

Scoping Report and Terms of Reference (TOR) for ESIA Report for Kyauk Phyu Special Economic Zone Deep Sea Port Project

YANBYE ISLAND PORT TERMINAL



Submitting Party:

**CITIC Consortium Myanmar Port
Investment Limited**

Preparation Party:

MSR
Myanmar Survey
Research

SSG
Sustainable
Solutions Global

PELLOW-MARRIN

**Independent
Engineering
consultants**

**Consortium of MSR and
International Consultants**

4 October 2023



KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Scoping Report

Document title:	Environmental and Social Impact Assessment (ESIA) of Kyauk Phyu Special Economic Zone Deep Sea Port Project (Yanbye Island Port Terminal of the Project)
Document subtitle:	Scoping Report
Project No.:	MSR/ESIA-47
Date:	4 October 2023
Status:	Final
Authors:	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.
Client Name:	CITIC Consortium Myanmar Port Investment Limited Company

Document history

Version	Revision	Authors	Reviewed by	MSR Approval to issue		Remarks
				Name	Date	
01	0.0	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than	Kyaw Hlaing	1 Nov 2022	First Draft for Internal Review
01	0.1	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than	Kyaw Hlaing	18 Nov 2022	Second Draft for Community Expert Group of Rakhine Review
01	0.2	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than	Kyaw Hlaing	20 Dec 2022	Third Draft for Internal Review
01	0.3	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than	Kyaw Hlaing	7 Feb 2023	Fourth Draft for Community Expert Group of Rakhine Review
01	0.4	Htay Aung Pyae,	1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win	Kyaw Hlaing	3 March 2023	Submission to • CITIC Consortium Myanmar Port Investment Limited

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Version	Revision	Authors	Reviewed by	MSR Approval to issue		Remarks
				Name	Date	
		Kyan Dyne Aung, Aye Aye Saw, et. al.	5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than			
Final	0.0	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	MSR Consortium 1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than The Client and PMC 1. CITIC Consortium Myanmar Port Investment Limited 2. HATCH	Kyaw Hlaing	28 June 2023	Submission to • CITIC Consortium Myanmar Port Investment Limited
Final	0.1	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	MSR Consortium 1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than The Client and PMC 1. CITIC Consortium Myanmar Port Investment Limited 2. HATCH	Kyaw Hlaing	8 Aug 2023	Submission to • CITIC Consortium Myanmar Port Investment Limited
Final	0.2	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	MSR Consortium 1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than The Client and PMC 3. CITIC Consortium Myanmar Port Investment Limited 4. HATCH	Kyaw Hlaing	15 Aug 2023	Submission to • CITIC Consortium Myanmar Port Investment Limited
Final	0.3	Htay Aung Pyae, Kyan Dyne Aung,	MSR Consortium 1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi	CITIC Consortium Myanmar Port Investment Limited	22 Aug 2023	Submission to • CITIC Consortium Myanmar Port Investment Limited

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Version	Revision	Authors	Reviewed by	MSR Approval to issue		Remarks
				Name	Date	
		Aye Aye Saw, et. al.	6. Dr. Khin Maung Nyo 7. Tin Than The Client and PMC 1. CITIC Consortium Myanmar Port Investment Limited 2. HATCH			
Final	0.4	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	MSR Consortium 1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than The Client and PMC 1. CITIC Consortium Myanmar Port Investment Limited 2. HATCH	CITIC Consortium Myanmar Port Investment Limited	21 Sep 2023	Submission to • CITIC Consortium Myanmar Port Investment Limited
Final	0.5	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	MSR Consortium 1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than The Client and PMC 1. CITIC Consortium Myanmar Port Investment Limited 2. HATCH	CITIC Consortium Myanmar Port Investment Limited	2 Oct 2023	Submission to • CITIC Consortium Myanmar Port Investment Limited
Final	0.6	Htay Aung Pyae, Kyan Dyne Aung, Aye Aye Saw, et. al.	MSR Consortium 1. Dr. Geraldine McGuire 2. Dr. Justine Thorp 3. Than Tun 4. Win Tin Win 5. Dr. Maung Maung Kyi 6. Dr. Khin Maung Nyo 7. Tin Than The Client and PMC 1. CITIC Consortium Myanmar Port Investment Limited 2. HATCH	CITIC Consortium Myanmar Port Investment Limited	11 Oct 2023	Submission to • Kyauk Phyu Special Economic Zone Management Committee • Environmental Conservation Department, Ministry of Natural Resources and Environmental Conservation

4 October 2023

Environmental and Social Impact Assessment (ESIA) of Kyauk Phyu Special Economic Zone Deep Sea Port Project (Yanbye Island Port Terminal of the Project)

Scoping Report

Submission of Documentation

We, Myanmar Survey Research (MSR) Consortium, hereby submit this Scoping Report and ToR for Yanbye Island Port Terminal of the Project in Kyauk Phyu township, Rakhine State. To our best knowledge, the information contained in this report is accurate and truthful, representing all findings related to the Project.



Kyaw Hlaing

Project Director

On behalf of MSR Consortium and International Consultants

(MSR) Myanmar Survey Research Co Ltd, Yangon Central Railway Station Building,
Mingalartaungnyunt Township, Yangon.

© Copyright 2023 by MSR (Myanmar Survey Research Co Ltd).
All rights reserved. No part of this work may be reproduced or transmitted in any form,
or by any means, without the prior written permission of MSR

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

SCOPING PROCESS COMPLIANCE CHECKLIST

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
0.	Executive Summary				
0.1.	The Executive Summary summarizes the significant findings and recommendations of the Scoping Report and the ToR for EIA preparation.	Essential	6	Public Consultation and Disclosure Table ES-6: Key findings from stakeholders' discussions (PCM 1)	110 – 111
				Table ES-7: Key findings from stakeholders' discussions (PCM 2)	112 – 113
				Table ES-8: Key findings from discussions with government officers	113 – 114
				Summary of findings from Community Expert Groups Workshop	115
			7	Conclusions and Recommendations	115 – 120
			8	Terms of Reference	120 – 123
0.2.	The Executive Summary provides a clear picture of the project e.g., its environment, the key impacts and associated mitigation measures and management, and the significant issues included in the ToR and so on.	Essential	1	Context of Project	87 – 123
			3	Project Description and Alternatives	
			4	Description of Surrounding Environment	
			5	Table ES – 5: List of Major Negative Impacts and Mitigation Measures identified for Made Island Port Terminal of the Project	
				Table ES – 6: Key findings from stakeholders' discussions at PCM 1	
			6	Table ES – 7: Key findings from stakeholders' discussions at PCM 2	
				Table ES – 8: Key findings from discussions with government officers	
				Table ES – 9: Highlights and responses	

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
				from Community Expert Groups Workshop	
			7	Conclusions and Recommendations	
			8	Terms of Reference	
0.3	The Executive Summary is at least written in Myanmar language.	Essential		Executive Summary (Myanmar Version)	33 – 86
1.	Context of the Project				
1.1	The context of the Project is described here, which include the background, the overall context.	Essential	1.2	Introduction	125 – 126
			1.3	Overview of the whole Project	126 – 127
1.2	Presentation of the Project Proponent and consultants has been stated.	Essential	1.5	Project Proponent	128 – 129
			1.6	Project Management Consultant and Technical Advisor	129
			1.7	EIA Consultant Team	129 – 143
31.3	Key findings of previous technical, economic, environmental or social studies are described.	Dependent		Not Applicable	
1.4	Related projects and developments	Essential	1.8	Related projects and developments	143 – 145
2.	Overview of the Policy, Legal and Institutional Framework				
2.1	The current Myanmar environmental and social policy, legal, and institutional framework applicable to the Project are briefly summarized	Essential	2.4	Overview of National Policies, Plans and Strategies	147 – 151
			2.5	Overview of Existing Local Laws, Rules, Procedures and Guidelines	151 – 177
			2.6	Government Agencies and their regulatory/administrative functions related to the Project	177 – 181
2.2	Applicable international or regional conventions and treaties signed or ratified by Myanmar related to the Project are briefly summarized	Essential	2.12	International Conventions, Treaties and Agreements	183
2.3	The corporate environmental and social policies of the Proponent are described.	Optional	2.11.1	Project Environmental Policy	182
			2.11.2	Project Social Policy	182 – 183
2.4	The policies, regulations, guidelines, and standards of international financial agencies (e.g., World Bank, Asian Development Bank) are briefly summarized, in cases where the Project is	Dependent	2.13	International Best Practice	184

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
	supported from them.				
2.5	The status of concession agreements or Memorandum of Understandings (MOUs) between the Project Proponent and the Government of Myanmar are presented here.	Dependent	2.8	Status of Transaction Documents for the Project	181
2.6	Institutional Framework Presentation of the actual body which is responsible for every activity related to EIA e.g., EIA studies, monitoring and inspection, mitigation measures, compensation and so on.	Essential	2.9	Institutional Framework	182
2.7	Potential stakeholders have been identified.	Essential	2.6	Government Agencies and their regulatory/administrative functions related to the Project	177 – 181
2.8	Details of any other permission issued by relevant ministries	Essential	2.10	Permissions of Relevant Ministries	182
3.	Project Description and Alternatives				
3.1	The Project for certain key decisions in Scoping process is briefly described e.g., on choice of technology or location is still under consideration.	Essential	3.20.3	Proposed project will apply 5 th Generation multi-purpose design and technologies	220 – 221
3.2	Description of each alternative (including No-project alternative) in reasonable detail and with prediction and evaluation of all major potential environmental and social impacts and risks.	Essential	3.20.4	This section discusses “No project” alternative option. The likelihood of this option to be further assessed in next EIA step.	221 – 222
3.3	Whether include reasonably feasible alternatives that are within the scope and area of business of the Project Proponent or not.	Essential	3.20.1	This section analyses certain feasibility and limitation. But the Project Proponent reported extended feasibility will be conducted	218 – 219 219 – 220
3.4	State the reasons for selection of the preferred alternative at the Scoping stage.	Essential	3.20.2		
3.5	The structure and content of the Project description are included as follows:				
3.5.1	Description of the components in the proposed Project in its alternatives for all applicable project phases is expressed in terms of area, size, activities, installations, technology, production, use of materials and resources and generation of waste and emissions, category/type, site layout maps, number of employees, raw materials and use of	Essential	3.14 3.15 3.16 3.17	Presented as per information obtained from Project Proponent. With proposed project is at start-up phase, preliminary engineering is being undertaken.	214, 215, 215 – 217 217 – 218

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
	equipment, facilities (e.g., Transportation, supporting facilities, ancillary facilities, water management facilities, etc.) or project investment.	Essential		The Project Proponent admits to comply Article 95 of the Myanmar EIA Procedure that is to inform ECD for any sizeable changes impacting to the environment made it will adhere to directions and notifications issued by concerned authorities.	
3.5.2	Study area and Location – An overview map at a scale appropriate to the size of the Project and the study area.		3.4 3.5 3.6		186 – 190
3.5.3	Facilities and Infrastructure – Description of main facilities and infrastructure (internal or ancillary) including operational facilities and their alternatives.		3.8 3.9 3.10 3.11 3.12 3.13		192 192 – 195 196 – 199 199 – 205 205 – 211 211 – 214
3.5.4	Time schedule – Present a diagram with planned timing such as studies, permitting / licensing / agreements, design and contracting (Project Phases); pre-construction, construction, operations; and, if applicable, decommissioning / closure / post-closure phase as well.		3.17		217 – 218
3.5.5	Whether the purpose and needs of the proposed project and its main components, and project design are summarized or not.		3.4 3.5 3.6 3.7		186 – 192
3.5.6	Whether detail description of project Proponent in terms of name, address, detail information for contacting is included or not.		3.18		218
4.	Description of the Environment				
4.1	<p>The section includes “Setting the study limits including the spatial and temporal (boundaries) / study limits”</p> <p>Example:</p> <p>The study areas delineated and those limits justified where will include all project-related activities, a map at a scale appropriate to the size of the Project and the area of influence, and all the important features of the study, including natural features (e.g., forest, water bodies, etc.) existing infrastructure (e.g., roads, bridge, etc.) human settlements and commercial area. In the case of urban area, sensitive areas (schools, cultural monuments, etc.) should be clearly indicated.</p>	Essential	4.3	Rationale and justification for setting study limits to each individual component of ESIA is explained comprehensively and figuratively.	224 – 238

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled	
			Section	Page (s)
4.2	Data collection methodologies to be conducted in EIA study	Essential	4.4 – 4.7.10	*1239 – 328
4.3	The section includes “Physical Characteristics” which have been collected mainly through primary/secondary sources. Example: Study area’s climate, topography, geology, soil, seismology, and surface hydrology and so on.	Essential	4.4	Findings from baseline data collection is described as partial primary data sources that are further confirmed by secondary and literature review. 239 – 254
4.4	The section includes “Biological Characteristics” which have been collected mainly through primary/secondary sources. Example: Environmental sensitive areas, endemic and species-at-risk, and so on.	Essential	4.5 4.6	The account of methodology and data collection is presented in the ToR in details towards all components of ESIA. 255 – 263 263 – 276
4.5	The section includes “Social Characteristics” which have been collected mainly through primary/secondary sources. Example: Existing statistics or through the district or village authorities, and those corroborated or complemented with visits- Population by district or village, health conditions (mortality and morbidity, as well as diseases), gender and age distribution, main economic activities (including data on income, cost of living, and unemployment), level of education, and presence of vulnerable groups and so on.	Essential	4.7 – 4.7.9	Findings from baseline data collection is described as partial primary data sources that are further confirmed by secondary and literature review. The account of methodology and data collection is presented in the ToR in details towards all components of ESIA. 277 – 315
4.6	The section included “Cultural Characteristics” which have been collected mainly through primary / secondary sources. Example: Religious and beliefs, local values and custom, sites of traditional or historical value, natural resource use, livelihoods, and key institutions and organizations, and so on.	Essential	4.7.10	Findings from baseline data collection is described as partial primary data sources that are further confirmed by secondary and literature review. The account of methodology and data collection is presented in the ToR in details towards all components of ESIA. 315 – 328
4.7.	The section includes “Visual Characteristics” which have been collected mainly through primary / secondary sources. Example:	Essential	4.7.10.1, 4.7.10.2	315 – 316 316 – 322

¹ This section involves multi-disciplinary subjects and studies of environment. Each individual strategies and methodologies to support ESIA are comprehensively presented in the ToR.

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
	Monuments and tourist attractions that will be affected or visually disrupted by the Project.				
4.8	Preliminary identification of valued environmental and social components (VEC), sensitive environmental, social, cultural and visual features within the study area.	Essential	4.9	These sections presented are considered as VECs that include inside the study limit of ESIA.	329 – 334
4.9	Identification of other development in the Project area relevant to consideration of cumulative impacts.	Essential	4.12	Projects in the vicinity of proposed project is described in this section. Compulsory, potential impacts are further discussed in the Chapter 5; then impacts are to be mitigated or managed with respective assessment.	342 – 344
5.	Key Potential Environmental Impacts and Mitigation Measures.				
5.1	This section should include preliminary identification and assessment of key project impacts as follows:				
5.1.1	The methodology and approach to be taken in EIA study have been described to determine on how those impacts will be identified.	Essential	5.3, 5.3.1, 5.3.2, 5.3.3	Methodology and Approach to be taken in EIA study	347 – 350
5.2	The major potential emission sources and other impacts factors have been described in every project phase as follows. Example: Project activities directly posing adverse impacts, summary of all the environmental components based on its pre-construction, construction, operation, and if applicable, decommissioning / closure/ post-closure phases as well and so on.				
5.2.1	Water to be required	Essential	No. 11 under Section 5.4.2.1 and 5.4.3.1	Resource Depletion	357, 374
5.2.2	Energy to be required	Essential	No. 11 under Section 5.4.2.1 and 5.4.3.1	Resource Depletion	357, 374
5.2.3	Solid waste	Essential	No. 12 under Section 5.4.2.1 and 5.4.3.1	Waste Management	357 – 358 374 – 375

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applica- bility	Fulfilled		
			Section	Page (s)	
5.2.4	Effluents	Essential	No. 1 under Section 5.4.2.1 and 5.4.3.1	Water Quality (Water Pollution)	352 – 353 369
5.2.5	Air emission sources	Essential	No. 2 under Section 5.4.2.1 and 5.4.3.1	Air Quality (Air Pollution)	353, 370
5.2.6	Any other emission sources not mentioned above	Dependent	No. 3, 5, 7(a) and (b) under Section 5.4.2.1 and 5.4.3.1	3. Noise Pollution 5. Light Pollution 7(a) Greenhouse gases emission 7(b) Microclimate	353 – 354 354 – 355, 355 355 – 356 370 – 371 371 – 372 372, 373
5.3	Provisional identification of impacts – The preliminary Impact Assessment is conducted in Scoping stage to identify the outline of the likely impacts and risks.				
5.3.1	Physical impacts	Essential	No. 1 to 12 under Section 5.4.2.1 and 5.4.3.1	Physical Environment	352 – 358 369 – 374
5.3.2	Biological impacts	Essential	No.1 under Section 5.4.1.1; No. 1 to 12 under Section 5.4.2.2; No. 1 to 9 under Section 5.4.3.2	Biological Environment	351 358 – 365 374 – 380
5.3.3	Socio-economic impacts	Essential	No.1 and 2 under Section 5.4.1.2; No.1 to 4 under Section 5.4.2.3 and 5.4.3.3	Social Environment	351 – 352 365 – 367 381 – 383
5.3.4	Occupational and Community health and safety impacts	Essential	No. 6, 6.1,6.1.1,6.1.2, 6.1.3 and No.7, 7.1 under Section 5.4.2.3; No. 5, 5.1,5.1.1,5.1.2, 5.1.3 and No.6, 6.1 under Section 5.4.3.3	Community Health and Safety, Occupational Health and Safety	367 – 368 368 – 369 383 – 384 384

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
5.3.5	Cultural impacts	Essential	No.5 under Section 5.4.2.3; No.4 under Section 5.4.3.3	Heritage-Culturally Significant Sites	367 383
5.3.6	Visual impacts	Essential	No.6 under Section 5.4.2.1 and 5.4.3.1	Landscape and Visual Impact	355, 372
5.4	Provisional Mitigation Measures are described in the section. Example: Major potential impacts of the proposed project alternatives based on its pre-construction, construction, operation, and if applicable, decommissioning / closure / post-closure phases, the proposed mitigation measures, expected residual impacts and so on.				
5.4.1	Pollution control and prevention	Essential	No.1,2,5,7 (a) and 7(b) under Section 5.4.2.1 and 5.4.3.1	1.Water Quality (Water Pollution) 2. Air Quality (Air Pollution) 5. Light Pollution 7(a) Greenhouse gases emission 7(b) Microclimate	352 – 353 353, 354 – 355 355, 355 – 356 369 – 370, 370, 371 – 372, 372, 373
5.4.2	Site and waste management	Essential	No. 12 under Section 5.4.2.1 and 5.4.3.1	Waste Management	357 – 358 374
5.4.3	Biodiversity Conservation	Essential	No. 1 to 12 under Section 5.4.2.2; No. 1 to 9 under Section 5.4.3.2	Biological Environment	358 – 365 374 – 380
5.4.4.	Conservation of energy and water	Essential	No. 11 under Section 5.4.2.1 and 5.4.3.1	Resource Depletion	357, 374
5.4.5	Occupational Health and Safety	Essential	No.7, 7.1 under Section 5.4.2.3; No.6, 6.1 under Section 5.4.3.3	Occupational Health and Safety	368 – 369 384
5.4.6	Community Health and Safety	Dependent	No. 6, 6.1,6.1.1,6.1.	Community Health and Safety,	367 – 368 383 – 384

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
			2, 6.1.3 under Section 5.4.2.3; No. 5, 5.1, 5.1.1, 5.1.2, 5.1.3 under Section 5.4.3.3		
5.4.7	Socio-economic measures	Essential	No.1 and 2 under Section 5.4.1.2; No.1 to 4 under Section 5.4.2.3 and 5.4.3.3	Social Environment	351 – 352 365 – 367 381 – 383
5.4.8	Protection of Physical Cultural Resources	Dependent	No.5 under Section 5.4.2.3; No.4 under Section 5.4.3.3	Heritage-Culturally Significant Sites	367, 382 – 383
5.4.9	Preservation and Protection of Visual Resources	Dependent	No.6 under Section 5.4.2.1 and 5.4.3.1	Landscape and Visual Impact	355, 372
5.4.10	Community engagement, and Grievance Redress Mechanism	Optional	No.1 and 2 under Section 5.4.1.2; No.1 to 4 under Section 5.4.2.3 and 5.4.3.3	Social Environment	351 – 352 365 – 367 381 – 383
6.	Public Consultation and Disclosure				
6.1	The section includes the summary of public consultation undertaken in scoping stage as follows		6.4.1.2.1	Public Consultation Meetings 1. Table 6-22 2. Table 6-23	414 – 416 417 – 418
6.2	Purpose of the consultation for Scoping	Essential	6.4.1.2.1	Public Consultation Meetings (Objectives of PCMs)	412
6.3	The measures that are taken to identify people likely to be affected by the proposed project are described.	Dependent	6.3.1.1, 6.3.1.2	<ul style="list-style-type: none"> • Stakeholder groups in rural areas • Stakeholder groups in Kyauk Phyu Township 	395 – 403 403 – 407
6.4	The measures that are taken to obtain information from and the opinions of the public, especially project affected people, and NGOs are described.	Essential	6.1	Summary	393 – 394
6.5	Summary of consultation activities undertaken including dates, venues, attendance, topics and so on;	Essential	6.4	Consultation and engagement plan activities	409 – 440

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
6.6	Summary of main comments received from every related stakeholder (e.g., affected people, NGOs, other governmental authorities and so on) at each consultation meeting.	Essential	6.4.1.2.1	Public Consultation Meetings	412 – 420
6.7	Identification on how those comments were taken into account	Essential	6.4.1.2.1	Public Consultation Meetings (Identification of how the comments are taken into account)	419 – 420
6.8	Meeting minutes at each consultation meeting during scoping stage.	Essential	6.4.1.2.2, 6.4.1.2.3	Meeting minutes of PCM 1 and PCM 2	421 – 430
6.9	Information disclosure e.g., press releases, web site, newsletters, etc.	Essential	6.4.1.1.2, 6.4.1.1.3	<ul style="list-style-type: none"> • Disclosure of Project information and ESIA process • Notifications prior to the PCMs 	410 – 412
6.10	Recommendations for consultation to be undertaking during the EIA study phase and so on.	Essential	6.9	Recommendations for the PCMs	452
6.11	A plan of public consultation for EIA study including methodologies to be used, arrangements to be put into place, responsible person and way to keep record, and arrangements to be made for communication and opinions.	Essential	6.5	Planned activities in investigation stage	440 – 449
7.	Conclusion and Recommendations				
7.1	<p>The conclusion including the key findings and recommendations serve as the basis for the preparation of the ToR for the EIA Study and Investigation.</p> <p>The section includes the summary of conclusion and recommendations for Scoping as follows;</p> <ol style="list-style-type: none"> 1. Main challenges and issues to be studied in detail. 2. Major alternatives to be taken into account during EIA study. 3. Magnitude and extent of the study to impacts 4. Stakeholders to be consulted 5. Important data gaps and constraints 	Essential	7.2	Main challenges and issues to be studied in detail during EIA stage	454 – 455
			7.3	Major alternatives to be taken into account during EIA study	455
			7.4	Magnitude and extent of the study to impacts	455 – 456
			7.5	Stakeholders to be consulted	456
			7.6	Important data gaps and constraints	456 – 457
			7.7	Additional recommendations	457 – 460
8.	Terms of Reference for the EIA Study and Investigation				
8.1	The Terms of Reference (ToR) is made up of a key result of the Scoping Report.	Essential	All sections	Terms of Reference	462 – 531

SCOPING CHECKLIST

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Items	Applicability	Fulfilled		
			Section	Page (s)	
8.2	Contents of ToR – ToR is basically a detailed table of contents for the EIA report and EMP with descriptions of further required studies for EIA investigation (e.g., biodiversity studies, socio-economic surveys, health surveys), activities, methodologies and expert input for each section of the report. Generic contents of ToR are as follows:				
8.2.1	Introduction – State the purpose of the ToR, study area and limits.	Essential	1	Introduction	462
8.2.2	Background information – Objectives and major components of the Project.	Essential	2	Background Information	462 – 464
8.2.3	Detailed information of the Project Proponent	Essential	3	Information of Project Proponent	464 – 465
8.2.4	Policy, Legal and Institutional Framework	Essential	4	Policy, Legal and Institutional Framework	465 – 466
8.2.5	Project Description and alternatives	Essential	5	Project Description and Alternatives	466 – 467
8.2.6	Description of the Surrounding Environment	Essential	6	Description of the Surrounding Environment	467 – 508
8.2.7	Impact and Risk Assessment and Mitigation Measures	Essential	7	Impact and Risk Assessment and Mitigation Measures	508 – 513
8.2.8	Cumulative Impact Assessment	Essential	9	Cumulative Impact Assessment	513
8.2.9	Environmental Management Plan	Essential	10	Environmental Management Plan	514
8.2.10	Public Consultation and Disclosure	Essential	11	Public Consultation and Disclosure	514 – 526
8.2.11	Conclusion and Recommendation	Essential	12	Conclusion and Recommendations	526
8.2.12	Community Development Plans	Dependent	13	Community Development Plans	526 – 527
8.2.13	Visual and Graphic Presentation	Essential	14	Visual and Graphic Presentation	527
8.2.14	Implementation Program	Essential	15	Implementation Program	527 – 528
8.2.15	Table of contents for the EIA report and EMP	Essential	16	Table of contents for the EIA report and EMP	528 – 531

Note: The point “1.3 Key findings of previous technical, economic, environmental or social studies are described” is not applicable to this scoping report because the aforementioned studies were not conducted.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Table of Contents

Acronyms	30
Executive Summary (Myanmar Version).....	33
Executive Summary	87
Chapter 1. Context of the Project	125
1.1 Summary	125
1.2 Introduction.....	125
1.3 Overview of the Project	126
1.3.1 Project Phases	127
1.4 Benefits of Project	127
1.5 Project Proponent.....	128
1.6 Project Management Consultant and Technical Advisor	129
1.7 EIA Consultant Team	129
1.7.1 Organization Chart of the Consortium of MSR and International Partners	130
1.7.2 List of Key Personnel.....	131
1.7.3 Profiles of MSR, Partner Companies and Independent Engineering Consultants.....	132
1.7.4 Team members and their expertise	136
1.7.5 Project team qualifications.....	138
1.8 Related projects and developments.....	144
Chapter 2. Overview of the Policy, Legal and Institutional Framework	147
2.1 Summary	147
2.2 Introduction.....	147
2.3 National Administrative Framework	147
2.4 Overview of National Policies, Plans and Strategies	147
2.4.1 National Environmental Policy of Myanmar (2019)	148
2.4.2 Myanmar Climate Change Policy (2019).....	148
2.4.3 National Land Use Policy (2016)	148
2.4.4 Myanmar Climate Change Master Plan (2018 - 2030).....	149
2.4.5 Myanmar National Waste Management Strategy and Master Plan (2018 - 2030).....	149
2.4.6 Myanmar Climate Change Strategy (2018 - 2030)	149
2.4.7 National Sustainable Development Strategy (2009)	150
2.4.8 Myanmar Sustainable Development Plan (2018 – 2030).....	150
2.4.9 National Biodiversity Strategy and Action Plan (2015-2020)	150
2.5 Overview of Existing Local Laws, Rules, Procedures and Guidelines.....	151
2.5.1 Constitution of Republic of Union of Myanmar (2008)	152
2.5.2 Myanmar Special Economic Zone Law (2014).....	153
2.5.3 Myanmar Companies Law (2017)	154
2.5.4 Special Companies Act (1950).....	154
2.5.5 Environmental Conservation Law (2012)	154
2.5.6 The Penal Code (1861)	155
2.5.7 Prevention and Protection from the Danger of Chemicals and Related Substances Law (2013).....	156
2.5.8 Worksite-Use Explosive Substances Law (2018)	157
2.5.9 Export and Import Law (2012)	157
2.5.10 Foreign Exchange Management Law (2012)	157
2.5.11 Myanmar Insurance Law (1993).....	158
2.5.12 Union of Myanmar Public Health Law (1972).....	158
2.5.13 Prevention and Control of Communicable Diseases Law (1995).....	158

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

2.5.14	Control of Smoking and Consumption of Tobacco Product Law (2006)	158
2.5.15	Occupational Safety and Health Law (2019)	159
2.5.16	Myanmar Fire Brigade Law (2015)	159
2.5.17	Minimum Wage Law (2013).....	159
2.5.18	Leave and Holidays Act (1951)	160
2.5.19	Labor Organization Law (2011)	160
2.5.20	Labor Dispute Settlement Law (2012)	160
2.5.21	Land Acquisition Act (1894).....	160
2.5.22	Land Acquisition, Resettlement and Rehabilitation Law (2019)	161
2.5.23	Farmland Law (2012)	161
2.5.24	Vacant, Fallow and Virgin Land Management Law (2012)	162
2.5.25	Protection of the Rights and Enhancing the interests of Farmers Law (2013).....	163
2.5.26	Rural Area Development Law (2019)	163
2.5.27	Protection and Safeguarding the Right of the Ethnic Nationalities Law (2015)	164
2.5.28	Myanmar Immigration (Emergency Provisions) (Extension) Act (1949)	164
2.5.29	Myanmar Port Authority Law (2015).....	164
2.5.30	The Ports Act (1908)	165
2.5.31	Myanmar Territorial Sea and Maritime Zones Law (2017)	165
2.5.32	Inland Water-going Vessel Law (2015)	165
2.5.33	Conservation of Water Resources and Rivers Law (2006)	166
2.5.34	Vehicle Safety and Motor Vehicle Management Law (2020)	166
2.5.35	Myanmar Marine Fisheries Law (1990).....	167
2.5.36	Forest Law (2018)	167
2.5.37	Protection and Safeguarding of Biodiversity and Natural Conservation Areas Law (2018).....	167
2.5.38	Protection and Conservation of Cultural Heritage Regions Law (2019)	168
2.5.39	Protection and Conservation of Antique Structures Law (2015)	168
2.5.40	Protection and Conservation of Antique Objects Law (2015)	168
2.5.41	Social Security Law (2012).....	169
2.5.42	Employment and Skill Development Law (2013)	169
2.5.43	Workmen’s Compensation Act (1923).....	170
2.5.44	Electricity Law (2014)	170
2.5.45	Myanmar Merchant Shipping Act (1923).....	170
2.5.46	Sea-Custom Act (1878)	171
2.5.47	Telecommunications Law (2013)	171
2.5.48	Myanmar Special Economic Zone Rules (2015)	172
2.5.49	Environmental Conservations Rules (2014)	172
2.5.50	Minimum Wage Rules (2013)	173
2.5.51	Labour Dispute Settlement Rules (2012)	173
2.5.52	Myanmar Port Authority Rules (2016)	173
2.5.53	Permanent Residency of a Foreigner Rules (2014)	173
2.5.54	Farmland Rules (2012).....	173
2.5.55	Labour Organization Rules (2012)	173
2.5.56	Vehicle Safety and Motor Vehicle Management Rules (2022).....	174
2.5.57	Conservation of Water Resources and Rivers Rules (2013)	174
2.5.58	Electricity Rules (2015).....	174
2.5.59	The Insurance Business Regulatory Board of Myanmar explains in Notification No. 1/2017 of Insurance Business Regulatory Board	174
2.5.60	Environmental Impact Assessment Procedure (2015).....	174
2.5.61	National Environmental Quality (Emission) Guidelines (2015)	174
2.6	Government Agencies and their regulatory / administrative functions related to the Project	177
2.7	Requirement of Environmental Conservation Department	181
2.8	Status of Transaction Documents for the Project	181
2.9	Institutional Framework	181
2.10	Permissions of Relevant Ministries	182

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

2.11	The Project Environmental and Social Management System	182
2.11.1	Project Environmental Policy	182
2.11.2	Project Social Policy	182
2.12	International Conventions, Treaties and Agreements	183
2.13	International Best Practice	183
Chapter 3.	Project Description and Alternatives	186
3.1	Summary	186
3.2	Introduction	186
3.3	Objectives and Rationale of the Project	186
3.4	Project Dimension and Details	186
3.5	Project Location	187
3.6	Project Description	190
3.7	Scope of Project and Salient features	190
3.8	Site Access and Site Roads	192
3.9	Yanbye Island Port Terminal of the Project	192
3.10	Navigation and Shipping	196
3.10.1	Shipping Channel	196
3.10.2	Design Vessel	198
3.11	Marine Infrastructure	199
3.11.1	Approach Channel	199
3.11.2	Dredging	199
3.11.3	Revetments / Shore Protection	200
3.11.4	Berth 200	
3.11.5	Aids to Navigation	201
3.11.6	Anchorage	201
3.11.7	Dredging and Land Reclamation	204
3.11.8	Breakwater/Revetments	205
3.12	Terminal Infrastructure and Facilities	205
3.12.1	Reclamation / Land Transformation	205
3.12.2	Power Supply	206
3.12.3	Telecommunication	207
3.12.4	Water Supply	207
3.12.5	Stormwater Management	208
3.12.6	Water Treatment Plant	209
3.12.7	Sewage Treatment Plant	209
3.12.8	Transfer Waste Station	209
3.12.9	Refueling Yard	209
3.12.10	Firefighting	209
3.12.11	Borrow Sources	209
3.12.12	Ancillary facilities	210
3.12.13	Marine supply base	211
3.12.14	Pavement/ LANDING FACILITY / CONSTRUCTION JETTY	211
3.13	Operational Requirements	211
3.13.1	Handling Technology	211
3.13.2	IT System	213
3.13.3	Maintenance	218
3.13.4	Infrastructures (sub-projects) Summary	214
3.14	Workforce and Accommodation	214
3.15	Construction Materials and Resources	215
3.16	Project Phases	215
3.16.1	Commissioning and Startup Phase	215
3.16.2	Construction Phase Activities	215

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

3.16.3	Operations Phase	217
3.16.4	Transfer Phase	217
3.17	Project Schedule	217
3.18	Detail Information of the Project Proponent's Contact Person.....	218
3.19	Project Cost	218
3.20	Project Alternatives	218
3.20.1	Location Alternative	218
3.20.2	Orientation Alternative	219
3.20.3	Design Alternative	220
3.20.4	No Project Action Alternative.....	221
Chapter 4.	Description of the Surrounding Environment	224
4.1	Summary	224
4.2	Introduction.....	224
4.3	Setting Project Location and EIA Study Limits.....	224
4.3.1	Physical Environment	227
4.3.2	Biological Environment	231
4.3.3	Social Environment.....	233
4.4	Physical Environment.....	239
4.4.1	Climate.....	239
4.4.2	Air Quality	243
4.4.3	Noise and Vibration	244
4.4.4	Other Physical Components.....	244
4.5	Biological Environment.....	255
4.5.1	Terrestrial Flora	255
4.5.2	Terrestrial Fauna	259
4.5.3	Marine Fauna	262
4.6	Marine Environment	263
4.6.1	Seagrass and Seaweed	263
4.6.2	Benthos, Mollusks and Gastropods.....	264
4.6.3	Coral Reefs.....	266
4.6.4	Plankton.....	269
4.6.5	Marine Fish.....	272
4.6.6	Protected Areas and Ecoregions.....	274
4.7	Social Environment	277
4.7.1	Overview: Rakhine State	277
4.7.2	Kyauk Phyu Township Economic Development.....	289
4.7.3	Overview: Yanbye Island.....	291
4.7.4	Villages Profile: Communities in Project Intersection.....	293
4.7.5	Ethnic Minorities and Indigenous Groups.....	305
4.7.6	Land Ownership and Customary Land Rights.....	305
4.7.7	Marine Use Rights	305
4.7.8	Land Acquisition and Resettlement.....	306
4.7.9	Healthcare Environment and Community Health	306
4.7.10	Heritage – Culturally Environment.....	315
4.8	Local Infrastructure and Services.....	328
4.9	Valued Environmental and Social Components (VECs)	329
4.10	Port security and national security	334
4.11	Natural Disasters and Hazards	335
4.11.1	Earthquakes	335
4.11.2	Mud Volcano.....	339
4.11.3	Tsunami and Storm surges	339
4.11.4	Flood and Inundation.....	339
4.11.5	Cyclones and Storms	340

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.11.6	Landslide	341
4.11.7	Wildfire	342
4.11.8	Drought	342
4.12	Related projects and developments	342
Chapter 5.	Key Potential Environmental Impacts and Mitigation Measures	346
5.1	Summary	346
5.2	Procedure of Scoping for Environmental and Social Impact Identification	346
5.3	Methodology and Approach to be taken in EIA study	347
5.3.1	Impact Identification and Assessment Methodology	347
5.3.2	Impact Significance Assessment	347
5.3.3	Risk Assessment Methodology	350
5.4	Key Environmental and Social Impacts	351
5.4.1	Environmental and Social Impacts and Mitigation Measures Needed during the Pre-Construction Phase	351
5.4.2	Environmental and Social Impacts and Mitigation Measures Needed during the Construction Phase	352
5.4.3	Environmental and Social Impacts and Mitigation Measures Needed during the Operation Phase	369
5.4.4	Environmental and Social Impacts and Mitigation Measures Needed during the Decommissioning Phase	385
5.4.5	Environmental and Social Impacts and Mitigation Measures Needed during Transfer Phase	385
5.4.6	Environmental and Social Impacts and Mitigation Measures Needed during Abandonment of the Project	386
5.4.7	Exceptional Events*	386
5.4.8	Climate Change Impact	387
5.5	Residual Impacts	388
5.6	Cumulative Impact Assessment	388
5.7	Transboundary Impacts	388
5.8	Human Rights Impact Assessment	388
5.9	Fishery Livelihood Impact Assessment	390
5.10	Community benefit	390
5.11	Environmental Management Plan (EMP)	391
Chapter 6.	Public consultation and disclosure	393
6.1	Summary	393
6.2	Stakeholder engagement	394
6.2.1	Potentially affected villages	394
6.2.2	Stakeholder engagement	394
6.3	Mapping of potentially affected and interested parties	395
6.3.1	Identification of PAP and stakeholders	395
6.3.2	Stakeholder Mapping	407
6.4	Consultation and engagement plan activities	409
6.4.1	Screening and scoping phase of ESIA process	410
6.4.2	Community Expert Group Workshop	439
6.5	Planned activities in investigation stage	441
6.5.1	Stakeholder engagement methodologies	441
6.5.2	Information Disclosure	441
6.5.3	Notifications prior to the PCMs	442
6.5.4	Public participation (All methods)	443
6.6	Planned activities in reporting stage	449
6.6.1	Compilation of ESIA Report	449
6.6.2	Public Consultation Meetings	450

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

6.7	Responsible entities	450
6.8	Control of Documents.....	451
6.9	Recommendations for the PCMs	452
Chapter 7.	Conclusions and Recommendations	454
7.1	Introduction.....	454
7.2	Main challenges and issues to be studied in detail during ESIA stage.....	454
7.3	Major alternatives to be taken into account during EIA study	455
7.4	Magnitude and extent of the study to impacts	455
7.5	Stakeholders to be consulted.....	456
7.6	Important data gaps and constraints.....	456
7.7	Additional Recommendations	457
7.7.1	Community Benefits	457
7.7.2	“No Project” option.....	460
7.7.3	Environmental and Social Management and Monitoring Plans.....	460
	Terms of Reference (ToR) for Environmental Impact Assessment (EIA)	462
	References	532
	Appendices	539
	Photo Records	569

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

List of Tables

Table ES- 1: Project components and work activities of Yanbye Island Deep Sea Port	90
Table ES- 2: Demographic Data (Kyauk Phyu Township)	98
Table ES- 3: Land Use (Kyauk Phyu Township)	98
Table ES- 4: Major Livelihoods and Socioeconomic Settings (Kyauk Phyu Township).....	99
Table ES- 5: List of Major Negative Impacts and Mitigation Measures Identified for Yanbye Island Port Terminal of the Project	103
Table ES- 6: Key findings from stakeholders' discussions at PCM 1	110
Table ES- 7: Key findings from stakeholders' discussions at PCM 2	112
Table ES- 8: Key findings from discussions with government officers	113
Table ES- 9: Highlights and responses from Community Expert Groups Workshop	115
Table 1-1: Project Benefits	127
Table 2-1: Existing laws and acts and rules, procedures and guidelines.....	151
Table 2-2: Effluent levels	177
Table 2-3: Ministry and Government Bodies and their relationship with the Project.....	177
Table 3-1: Coordinates of Project Area	187
Table 3-2: Project Components and Activities	191
Table 3-3: Dimensions of Design Vessels.....	198
Table 3-4: Estimates of Container Throughput Forecast for KP DSP	198
Table 3-5: Planned Anchorage Areas	201
Table 3-6: Draft Requirements for Shipping Vessels	205
Table 3-7: Power supply and distribution facility	206
Table 3-8: Facilities of Yanbye Island Port Terminal of the Project	214
Table 3-9: Detailed Work for Project Activities	217
Table 4-1: List of the potentially affected villages due to three Projects which are in the inner zone proximity to the Project site	236
Table 4-2: Monthly Rainfall.....	239
Table 4-3: 2 days Focus Interval Continuous Sampling Program.....	244
Table 4-4: Soil Types and Soil Characteristic of Rakhine State.....	249
Table 4-5: The most common species of trees, small trees, shrubs, and climbers of Yanbye Island	255
Table 4-6: Mangroves from Yanbye and Made Islands and adjacent areas hotly included in IUCN Red List covered	257
Table 4-7: IUCN Listed Marine Turtles Near Project Area	263
Table 4-8: IUCN red listed status of coral reefs in Goat Island.	267
Table 4-9: IUCN red listed status of marine fishes in Kyauk Phyu.....	273
Table 4-10: Sharks and rays (by-catch) found in Kyauk Phyu	273
Table 4-11: Sub-division of Kyauk Phyu District	277
Table 4-12: Demographic Data	278
Table 4-13: Land use area of Kyauk Phyu	278
Table 4-14: Plantation area and other land area.....	282
Table 4-15: Business data.....	282
Table 4-16: Access to electricity.....	283
Table 4-17: Access to water.....	283
Table 4-18: Access to telecommunication.....	284
Table 4-19: Transportation vehicles	284
Table 4-20: The number of schools, students and teachers	285
Table 4-21: Types of School.....	285
Table 4-22: Healthcare data.....	285
Table 4-23: Social data.....	286
Table 4-24: Security	287
Table 4-25: Household and Population Data	291
Table 4-26: No. of students in 5 villages of the Made Island	292
Table 4-27: Percent distribution of population by sex, sex ratio and urban (%), State/Region and District.....	306

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Table 4-28: Heade of Households and mean Household size by State/Region and District n.....	307
Table 4-29: Population in the labour force and Unemployment	307
Table 4-30: Literacy rate.....	307
Table 4-31: Percentage of Literate and Numerate population age 15 years and over by sex, State/Region and District	308
Table 4-32: Type of toilet and their distribution in Kyauk Phyu District	309
Table 4-33: Proportion of households with access to improved sources of drinking water	309
Table 4-34: Health human resources at Kyauk Phyu District (2021)	310
Table 4-35: Health Care Facilities	310
Table 4-36: Health care delivery.....	310
Table 4-37: Leading causes of morbidity and mortality.....	310
Table 4-38: Frequently occur common diseases	311
Table 4-39: Malaria and Dengue Hemorrhagic Fever	311
Table 4-40: Confirmed COVID-19 cases by Township (As of 23 September 2020).....	312
Table 4-41: Stakeholders cum collaborators of health care delivery, blood donation, ambulance services, etc.....	312
Table 4-42: List of the potentially affected villages due to three Projects which are in the inner zone proximity to the Project site	313
Table 4-43: The Inventory of the Religious buildings of Project Areas	317
Table 4-44: Summary of VECs necessary for the Made Island Port Terminal Project Environmental and Social Impact Assessment	330
Table 4-45: EIA-type future projects located in Kyauk Phyu	344
Table 5-1: Criteria used to determine Impact Significance	347
Table 5-2: Impact Level Score.....	348
Table 5-3: Receptor Sensitivity Score	349
Table 5-4: Significance Level Score	349
Table 5-5: Categories of Impact Significance.....	349
Table 5-6: Consequence/probability matrix	350
Table 5-7: Risk ranking matrix.....	350
Table 6-1: Potentially affected villages at Made Island port terminal development site.....	394
Table 6-2: Stakeholder engagement activities (by sub-project)	394
Table 6-3: Stakeholder engagement activities (by method).....	395
Table 6-4: Demographics of farmers, fishermen and livestock breeders.....	396
Table 6-5: Dominant group in each village at the three sub-project sites	397
Table 6-6: Existence of other livelihoods than cultivation and fishing	398
Table 6-7: Demographics of vulnerable groups	399
Table 6-8: Demographics of minority ethnic groups.....	399
Table 6-9: Numbers of religious buildings	400
Table 6-10: Numbers of Buddhist buildings	401
Table 6-11: Religious leaders in Kyauk Phyu Township	402
Table 6-12: Political parties in Kyauk Phyu Township.....	403
Table 6-13: Town elders in Kyauk Phyu Township	404
Table 6-14: Civil Society Organizations in Kyauk Phyu Township.....	405
Table 6-15: NGOs in Kyauk Phyu Township	406
Table 6-16: International NGOs in Kyauk Phyu Township	406
Table 6-17: Ward Administrators in Kyauk Phyu Township	406
Table 6-18: Stakeholder influence and interest matrix	408
Table 6-19: Completion of stakeholder engagement activities	410
Table 6-20: Notifications to the public and notification methods	411
Table 6-21: Numbers of participants in PCMs 1 and 2 (By gender).....	413
Table 6-22: Key findings from stakeholders' discussions at PCM 1	414
Table 6-23: Key findings from stakeholders' discussions at PCM 2	417
Table 6-24: Topics for discussions at the two workshops	431
Table 6-25: KIIs completed in the Scoping Phase	432
Table 6-26: Places where KIIs were conducted	432
Table 6-27: FGDs conducted in the Scoping Phase	434

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Table 6-28: Places where FGDs were conducted.....	434
Table 6-29: No. of government officers engaged in Scoping Phase	435
Table 6-30: Government departments, enterprises and organizations engaged	436
Table 6-31: Key findings from discussions with government officers.....	437
Table 6-32: List of community expert group members	440
Table ToR 1: Project components and work activities of Yanbye Island Deep Sea Port.....	463
Table ToR 2: Demographic Data (Kyauk Phyu Township)	469
Table ToR 3: Land Use (Kyauk Phyu Township)	469
Table ToR 4: Major Livelihoods and Socioeconomic Settings (Kyauk Phyu Township).....	470
Table ToR 5: Scope for Baseline Environmental Data Collection for Yanbye Island Port Terminal of the Project EIA.....	472
Table ToR 6: Soil Samples Baseline Data Collection for Yanbye Island Port Terminal of the Project	473
Table ToR 7: Collection Points for 9 Baseline Water Samples Data Collection – Yanbye Island.....	474
Table ToR 8: Air Quality Measurement Station Location for Ambient Air and Noise Baseline Data Collection and Pollutants Dispersion Modelling for Yanbye Island	475
Table ToR 9: Marine Sediment Samples Baseline Data Collection for Yanbye Island Port Terminal of the Project.....	476
Table ToR 10: Attributes of abundance category, abundance score and ordinal scale in the encounter rate.....	489
Table ToR 11: The overview of baseline data collection sites and number of stations	491
Table ToR 12: Detailed description of location and period for marine biodiversity survey	493
Table ToR 13: List of the potentially affected villages due to three projects which are in the inner zone in proximity to the Project sites.....	495
Table ToR 14: KII interview and FGD discussion teams scheduled to be formed.....	495
Table ToR 15: Update and schedule of interviews (KIIs and FGDs)	496
Table ToR 16: KIIs scheduled for the Investigation Phase	497
Table ToR 17: FGDs schedule for the Investigation Phase	498
Table ToR 18: Census to be conducted by SEBHS team in inner zone	498
Table ToR 19: Criteria used to determine Impact Significance.....	509
Table ToR 20: Impact Level Score	510
Table ToR 21: Receptor Sensitivity Score	510
Table ToR 22: Significance Level Score	511
Table ToR 23: Categories of Impact Significance	511
Table ToR 24: Consequence/probability matrix	512
Table ToR 25: Risk ranking matrix	512
Table ToR 26: Planned methods of invitation to workshops and PCMs	515
Table ToR 27: Planned methods of information disclosure	515
Table ToR 28: Notifications to the public and notification methods	516
Table ToR 29: Schedule of stakeholder engagement activities for Investigation Stage	516
Table ToR 30: KII and FGD teams scheduled to be formed	518
Table ToR 31: Update and schedule of interviews (KIIs and FGDs)	519
Table ToR 32: KIIs scheduled for the Investigation Phase	520
Table ToR 33: FGDs schedule for the Investigation Phase	521
Table ToR 34: Census to be conducted by SEBHS team in inner zone	521
Table ToR 35: Overall schedule for conducting the Environmental and Social Impact Assessment (See enlarged table in Appendix 10)	527
Table ToR 36: Detailed Work for Project Activities	528

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

List of Figures

Figure 1-1: Project Site Layout (Enlarged figure in Appendix 1)	126
Figure 1-2: Yanbye Island deep sea port layout (See Enlarged Figure in Appendix 2)	127
Figure 3-1: Project layout	189
Figure 3-2: Project Layout of Yanbye Island Port Terminal of the Project	190
Figure 3-3: Yanbye Island Port Terminal of the Project Layout	194
Figure 3-4: Section Plan for Handling Process of Yanbye Island Terminal (See Enlarged Figure in Appendix 3).....	195
Figure 3-5: Near-shore Navigation in the Terminal Areas (See Enlarged Figure in Appendix 4)	197
Figure 3-6: Section of existing approach channel	199
Figure 3-7: Gravity caisson.....	201
Figure 3-8: Pile structure	201
Figure 3-9: Section of Container Terminal	202
Figure 3-10: Section of Multi-Purpose Terminal.....	202
Figure 3-11: Section of Heavy Container Yard.....	203
Figure 3-12: Section of Empty Container Yard.....	203
Figure 3-13: Section of General and Bulk Cargo Yard.....	203
Figure 3-14: 11/0.4kV Substations at Port Sites	206
Figure 3-15: Communication switch center at Port Sites	207
Figure 3-16: Communication switch center at Port Site	208
Figure 3-17: Layout of Phase 4A (Enlarged Figure in Appendix 5).....	216
Figure 3-18: Layout of Phase 4B (Enlarged Figure in Appendix 6).....	216
Figure 3-19: Aerial photo of Proposed Project Location on Yanbye Island (Local Scale)	219
Figure 3-20: Proposed Project Orientation (Modified from CITIC Source).....	220
Figure 3-21: Evolution path of generation five ports.....	221
Figure 4-1: Project location and layout.....	225
Figure 4-2: Project Location Area (Enlarged Figure in Appendix 7).....	226
Figure 4-3: Location of Baseline air and noise data collection inside Project AoI.....	228
Figure 4-4: Location of Baseline air and noise data collection for elevated impact assessment	228
Figure 4-5: Location of Baseline water quality data collection inside Project AoI and its proximity ...	229
Figure 4-6: Location of Baseline water quality data collection for elevated impacts assessment	229
Figure 4-7: Location of Baseline soil quality data collection inside Project AoI	230
Figure 4-8: Location of Baseline quality data collection for elevated impacts assessment	230
Figure 4-9: Location of Baseline sediment quality data collection inside Project footprint.....	231
Figure 4-10: Scope/boundary of marine biodiversity survey both Made and Yanbye Terminals of KPSEZ DSP.....	232
Figure 4-11: Terrestrial biodiversity study limit for of Yanbye Island Port Terminal of the Project Project.....	233
Figure 4-12: Location registered communities for socioeconomic assessment under Yanbye Island Port Terminal of the Project Scheme.....	234
Figure 4-13: Reference Benchmark Scope Requirement for all KPSEZ DSP EIA Project.....	234
Figure 4-14: Location of 3 sub-projects.....	235
Figure 4-15: Location of Villages in Inner zone and Outer zone of the Project site (Enlarged Figure in Appendix 8).....	235
Figure 4-16: Villages located in the Inner Zone where HIA will be conducted	236
Figure 4-17: Cultural significant places in the Project area	238
Figure 4-18: Observed Climatology of Min. Temperature (1991 -2020) of Rakhine	240
Figure 4-19: Observed Climatology of Mean Temperature (1991 -2020) of Rakhine	240
Figure 4-20: Observed Climatology of Max. Temperature (1991 - 2020) of Rakhine	241
Figure 4-21: Observed Average Annual Mean – Temperature (1991 – 2020) of Rakhine, Myanmar	241
Figure 4-22: Monthly Temperature and Precipitation (1991 – 2020) of Rakhine	242
Figure 4-23: Observed Annual Climatological of Precipitation 1991 – 2020 of Rakhine	242
Figure 4-24: Meteorological Stations in the Project Area (Enlarged Figure in Appendix 9).....	243
Figure 4-25: Terrain Map of Yanbye and Made Islands.....	245
Figure 4-26: Satellite Map of Yanbye and Made Islands	245

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Figure 4-27: Topographic map of Yanbye and Made Islands	246
Figure 4-28: Modelled Elevation Contour in 10 metres interval of Yanbye and Made Islands	246
Figure 4-29: Modelled 3D imagery of Yanbye and Made Islands in Elevation Exaggeration.	247
Figure 4-30: Soil Map of Rakhine State	248
Figure 4-31: Generalized Geology Map of Myanmar.	250
Figure 4-32: Near-shore Navigation in the Terminal Areas.....	251
Figure 4-33: Modelled Bathymetry in -5 metres interval of Yanbye and Made Islands	252
Figure 4-34: Coastal Mangrove Forest Cover in Kyauk Phyu	258
Figure 4-35: Marine Mammal Sightings and Turtle Nesting Sites in the Project Area	262
Figure 4-36: Seagrass Habitat in the Project Area (UNEP-WCMC, Short, 2021).....	264
Figure 4-37: Coral Reefs in the Project Area	267
Figure 4-38: Protected Areas in the Project Area.....	275
Figure 4-39: Key Biodiversity Areas in the Project Area	276
Figure 4-40: Fishing grounds of respective villages in Yanbye Island	279
Figure 4-41: Fishing grounds of respective villages in Made and Yanbye Islands (Sketch).....	280
Figure 4-42: Water transportation infrastructures.....	280
Figure 4-43: Rakhine State, Townships and Village Tracts	288
Figure 4-44: Oil and Gas Development in the Project Area	290
Figure 4-45: Map of Sit Taw Village	293
Figure 4-46: Map of Say Maw Village	296
Figure 4-47: Map of Kyan Chein Village.....	299
Figure 4-48: Thit Poke Taung Village.....	302
Figure 4-49: Cultural Significant Places in the Project Area	316
Figure 4-50: VECs Identification for Scoping Study	329
Figure 4-51: Distribution of historical and some recent earthquakes in Myanmar	337
Figure 4-52: Seismic Zone Map of Myanmar	338
Figure 4-53: Location of Mud Volcanos identified within Kyauk Phyu Township.	339
Figure 4-54: land projected to be below tideline in Year 2100 at 1.5°C in GWP	340
Figure 4-55: Land projected to be below tideline in Year 2100 at 4.5 °C in GWP	340
Figure 4-56: Historical storm tracks in Bay of Bengal since 1980s	341
Figure 4-57: Topographic map of Yanbye and Made Islands	342
Figure 6-1: Influence / Interest Matrix.....	407
Figure ToR 1: Aerial Ph-to - Tentative location of Soil Sample Collections for Environmental Baseline Data Collection for Yanbye Island Port Terminal of the Project	474
Figure ToR 2: Aerial Photo - Tentative location of Water Sample Collection Points for Baseline Environmental Water Quality Data for Yanbye Island Port Terminal of the Project.....	475
Figure ToR 3: Aerial Photo - Tentative location of Air and Noise Sample Collection Points for Baseline Environmental Ambient Air Quality Data for Yanbye Island Port Terminal of the Project.....	476
Figure ToR 4: Aerial Photo – Location of Marine Sample Collections for Environmental Baseline Data Collection for Yanbye Island Port Terminal of the Project.....	477
Figure ToR 5: Terrestrial biological sampling sites (with the related study of terrestrial plants and animals such as amphibians & reptiles, mammals, birds and butterfly & dragonfly within the assigned study range of direct and indirect impact zones) of Deep-Sea Port Project (DSP-1) of Made Island	484
Figure ToR 6: Biological sampling sites of marine surveys for marine mammals, coastal birds and marine turtles in Thanzit River and Ku La Bar Strait	484
Figure ToR 7: Sample design for line-transect and data collection.....	485
Figure ToR 8: Detailed description of marine biodiversity survey sites for EIA.	491
Figure ToR 9: Villages located in the Inner Zone where Social Environment Baseline will be collected	494
Figure ToR 10: Locations of 50 sample villages and wards in the Outer Zone where Social Environment Baseline will be collected in Kyauk Phyu Township.....	499
Figure ToR 11: Livelihoods Toolbox.....	507

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

List of Photo Plates

Photo plate 3-1: Sketch of Gate	204
Photo plate 3-2: Container Quay Crane	212
Photo plate 3-3: Container Quay Crane	212
Photo plate 3-4: E-RTG	213
Photo plate 4-1: Some of the most common species of trees from Yanbye Island Area	256
Photo plate 4-2: Shoreline along Made Island Terminal quay line	259
Photo plate 4-3: Shoreline south-west of the future Yanbye Island Port Terminal of the Project Site	259
Photo plate 4-4: Some recorded photos of animals (birds, dolphin and bat) in and surrounding area of the Project site	261
Photo plate 4-5: Benthic organisms: Worms	265
Photo plate 4-6: Benthic organisms: Mollusca	266
Photo plate 4-7: Photo of Coral	268
Photo plate 4-8: Photograph of Phytoplankton	270
Photo plate 4-9: Photograph of zooplankton	271
Photo plate 4-10: Photograph of fishes	274
Photo plate 4-13: Photos of Sit Taw village	295
Photo plate 4-14: Photos of Say Maw village	298
Photo plate 4-15: Photos of Kyan Chein village	301
Photo plate 4-16: Photos of Thit Poke Taung village	304
Photo plate 4-17: Rural Health Centre at Prain village	314
Photo plate 4-18: Ywar Ma Monastery with its artworks	318
Photo plate 4-19: Two Stairways Leading to Monastery situated on the hill	318
Photo plate 4-20: The Seated Buddha Image and Stupa	318
Photo plate 4-21: Monastery, Stupa and Sima at the Hill top of Kyan Chein village	319
Photo plate 4-22: The new and Old Monasteries of Saw Maw Village	320
Photo plate 4-23: The Stairway to the Monastery and Rest House	320
Photo plate 4-24: Artworks Illustrating the Story of Vidhura Jataka	320
Photo plate 4-25: Bodhi Tree and Spirit Tree Called Sitpan (Fabaceae) at the Say Maw Village	321
Photo plate 4-26: Stupa and Monastery of U Gin Village	321
Photo plate 4-27: The Interior Artworks, Mosaic Pillars and Painted Wood Relief	322
Photo plate 4-28: Sima in Which Buddha Stupas Enshrined	322
Photo plate 4-29: The Cave in Which the Ancient Seated Buddha Stupas Enshrined	322
Photo plate 4-30: Boat Repairing and Constructing Workshop Shelter at Thit Poke Taung	323
Photo plate 4-31: Wood Sawing and Cutting by Chief Carpenter at Thit Poke Taung	323
Photo plate 4-32: Sitpan (Albizia Procera), Say Maw Village	324
Photo plate 4-33: Abode or Shrine of Guardian Spirit, Ku Lar Bar Taung Village	324
Photo plate 4-34: The Stamps of Drum Figures Attributed to Rakhine Traditional Musical Instrument	325
Photo plate 4-35: Playing Auspicious Drum with Drum Stick	325
Photo plate 4-36: Kyauk Phyu Inscription Ganga or Kantkaw village	326
Photo plate 4-37: Shitthaung Pagoda, Ananda Candra Inscription	327
Photo plate 4-38: Entrance gates of monastery	327
Photo plate 4-39: Rakhine national flag	328

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

List of Appendices

Appendix 1: Project Layout.....	540
Appendix 2: Yanbye Island deep sea port layout.....	541
Appendix 3: Section Plan for Yanbye Island deep sea port.....	542
Appendix 4: Near-Shore Navigation in the Terminal Areas.....	543
Appendix 5: Layout of Phase 4 A.....	543
Appendix 6: Layout of Phase 4 B.....	544
Appendix 7: Project Location.....	544
Appendix 8: Location of Villages in Inner zone and Outer zone of the Project site.....	546
Appendix 9: Meteorological Stations in the Project Area.....	547
Appendix 10: Overall schedule for conducting the Environmental and Social Impact Assessment ..	548
Appendix 11: Baseline Air Quality Sampling Result.....	549
Appendix 12: Baseline Noise Quality Sampling Result.....	552
Appendix 13: List of Parameters for Laboratory Sampling and Analysis under Physical Environment	556
Appendix 14: Recommended default guideline values for toxicants in sediment.....	561
Appendix 15: Environmental Conservation Department’s remarks on the implementation of KPSEZ DSP.....	563
Appendix 16: Project-Environment Interaction Risk Matrix (To be updated in EIA stage).....	567

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Acronyms

Acronyms	Meanings
AEC	ASEAN Economic Community
AFP	Arakan Front Party
ALD	Arakan League for Democracy
ALGAS	Asia Least Cost Greenhouse Gas Abatement
ANF	Arakan National Force Party
ANP	Arakan National Party
AoI	Area of Influence
ASEAN	Association of Southeast Asian Nations
CAPEX	Capital Expenditure
CAPI	Computer-Assisted Personal Interview
CBD	Convention on Biological Diversity
CD	Chart Datum
CERDA	Centre of Environment and Resources Development in Arakan
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CFS	Container Freight Station
CIA	Cumulative Impact Assessment
CITES	Convention on International Trade in Endangered Species
CITIC Consortium	CITIC Consortium Myanmar Port Investment Limited
CNOOC	China National Offshore Oil Corporation
CO ₂	Carbon dioxide
CPI	Consumer Price Index
CR	Critically Endangered
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
CBD	Convention on Biological Diversity
DBFOT	Design-Build-Finance-Operate-Transfer
DSP	Deep Sea Port
DWT	Dead weight tonnes
ECD	Environmental Conservation Department
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EN	Endangered
EPC	Engineering, Procurement and Construction
EPCM	Engineering, Procurement, Construction, Management
ESIA	Environmental and Social Impact Assessment
ESOMAR	European Society for Opinion and Marketing Research
FGD	Focus Group Discussion
GEF	Global Environment Facility
GHG	Greenhouse Gases
GMS	Greater Mekong Subregion
GOM	Government of Myanmar
ha	hectares
HH	Household
ICESCR	International Covenant on Economic, Social and Cultural Rights
IDI	In-depth Interview
IEE	Initial Environmental Examination
IFC	International Finance Corporation
INGO	International non-governmental organization
IP	Industrial Park
ITCZ	Inter-Tropical Convergence Zone

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Acronyms	Meanings
ITTA	International Tropical Timber Agreement
IUCN	International Union for the Conservation of Nature
JV	Joint Venture
KBA	Key Biodiversity Area
KII	Key Informant Interview
km	kilometers
Km ²	Square kilometer
KP	Kyauk Phyu
KPSEZ MC	Kyauk Phyu Special Economic Zone Management Committee
kV	Kilovolt
LGBTQ	Lesbian, gay, bisexual, transsexual and queer person
m ³	cubic meters
MARPOL	International Convention for the Prevention of Pollution from Ships
MCCP	Myanmar Climate Change Policy
MCCS	Myanmar Climate Change Strategy
MDGs	Millennium Development Goals
Mm ³	Million cubic meters
MONERC	Ministry of Natural Resources and Environmental Conservation
MSDP	Myanmar Sustainable Development Plan
MSR	Myanmar Survey Research Co Ltd
MW	megawatt
NGO	Non-governmental organization
NH2	National Highway 2
NH ₄	ammonium
NLD	National League for Democracy
NLU	National Land Use Policy
NO _x	Oxides of nitrogen
NSDS	National Sustainable Development Strategy
NT	Near Threatened
OHS	Occupational Health and Safety
ONGC	Oil and Natural Gas Corporation
OPRC	Oil Pollution Preparedness, Response and Co-operation
PAP	Project Affected Peoples
PCM	Public Consultation Meeting
PGTS	Preliminary Geological and Topographical Survey
PM ₁₀	Particulate matter 10 micrometers or less in diameter
PM _{2.5}	Particulate matter 2.5 micrometers or less in diameter
PMC	Project Management Consultant
PPR	Project Proposal Report
PWM	Peplow-Warren Management
RFP	Request for Proposal
SAM	Severe acute malnutrition rate
SEAOP	South East Asia Crude Oil Pipeline
SEBHS	Socio-Economic Baseline Household Survey
SEZ	Special Economic Zone
SIA	Social Impact Assessment
SMEs	Subject Matter Experts
SO _x	Oxides of sulphur
SPV	Special Purpose Vehicle
SSG	Sustainable Solutions Global Pty Ltd
tcf	Trillion cubic feet (measurement of natural gas)
TEU	Twenty-foot Equivalent Unit
ToR	Terms of Reference
UNCLOS	United Nations Convention on the Law of the Sea

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Acronyms	Meanings
UNEP	United Nations Environment Programme
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
UNFCCC	United Nations Framework Convention on Climate Change
USDP	Union Solidary and Development Party
VECs	Valued Environmental and Social Components
VU	Vulnerable

Executive Summary (Myanmar Version)

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်း ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အတွက် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာအကျဉ်းချုပ်

၁။ စီမံကိန်းအကြောင်းအရာ

စီမံကိန်းနောက်ခံအကြောင်းနှင့် စီမံကိန်းအဆိုပြုသူ

ကျောက်ဖြူအထူးစီးပွားရေးဇုန်စီမံခန့်ခွဲမှုကော်မတီသည် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ၏ ကိုယ်စား နိုင်ငံတကာမှအဆိုပြုလွှာများအား ယှဉ်ပြိုင်စနစ်ဖြင့်ခေါ်ယူခဲ့ပြီးနောက် CITIC Group Corporation (CITIC Consortium) က ဦးဆောင်သည့် ကွန်ဆိုတီယမ်အဖွဲ့တစ်ဖွဲ့အား ကျောက်ဖြူအထူးစီးပွားရေးဇုန် ရေနက်ဆိပ်ကမ်းစီမံကိန်းအား အကောင်အထည်ဖော်နိုင်ရန်အတွက် ၂၀၁၅ ခုနှစ်၊ ဒီဇင်ဘာလတွင် တာဝန်လွှဲပြောင်းပေးအပ်ခဲ့ပါသည်။ ထိုရေနက်ဆိပ်ကမ်းစီမံကိန်းတွင် မဒေးကျွန်းရေနက်ဆိပ်ကမ်း၊ ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းနှင့် ထိုဆိပ်ကမ်းများမှ အထူးစီးပွားရေးဇုန်အတွင်း စက်မှုဇုန် (industrial park) သို့ ဆက်သွယ်မည့် ၁၅ ကီလိုမီတာအရှည်ရှိ တံတားတစ်စင်းအပါအဝင် လမ်းတစ်လမ်း တည်ဆောက်ခြင်းများပါဝင်ပါသည်။ ထိုစီမံကိန်းအစိတ်အပိုင်းများအတွက် စီမံကိန်းဒီဇိုင်းရေးဆွဲခြင်း၊ ဆောက်လုပ်ခြင်း၊ ဘဏ္ဍာငွေရင်းနှီးမြှုပ်နှံခြင်း၊ လုပ်ငန်းလည်ပတ်ဆောင်ရွက်ခြင်း၊ ပြုပြင်ထိန်းသိမ်းခြင်းနှင့်လွှဲပြောင်း ပေးအပ်ခြင်းများ (Design, Build, Finance, Operation, Maintenance and Transfer – DBFOMT) တို့ကို ဆောင်ရွက်ရမည်ဖြစ်ပါသည်။

အဆိုပါရေနက်ဆိပ်ကမ်းစီမံကိန်းအား ကျောက်ဖြူအထူးစီးပွားရေးဇုန်စီမံခန့်ခွဲမှုကော်မတီနှင့် CITIC Consortium Myanmar Port Investment Limited (ရင်းနှီးမြှုပ်နှံသူ) တို့က ပူးတွဲဖွဲ့စည်းသည့် Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd. (စီမံကိန်းအဆိုပြုသူ) က အကောင်အထည်ဖော်မည် ဖြစ်ပါသည်။ CITIC Consortium သည် ရေနက်ဆိပ်ကမ်းလုပ်ငန်းများအား ၎င်း၏ကိုယ်စားလှုပ်ကိုင်နိုင်ရန် အတွက် CITIC Consortium Myanmar Port Investment Limited အား ဖွဲ့စည်းခဲ့ခြင်းဖြစ်ပါသည်။

ကျောက်ဖြူရေနက်ဆိပ်ကမ်းသည် အရှေ့အာရှ၊ အာဖရိကနှင့် အမေရိကတိုက်ရှိနိုင်ငံများ၊ အရှေ့အလယ်ပိုင်းဒေသနှင့် ဥရောပနိုင်ငံများသို့ ပင်လယ်ရေကြောင်းဖြင့် တိုက်ရိုက်ကုန်သွယ်မှုများအပြင် အရှေ့တောင်အာရှ၊ တရုတ်နှင့်အိန္ဒိယနိုင်ငံများ၏ အဓိကကမ္ဘာ့ဈေးကွက်များသို့လည်း ကုန်သွယ်မှုများ ပွင့်လင်းလာစေမည် ဖြစ်ပါသည်။ ထိုစီမံကိန်းသည် နိုင်ငံတကာအဆင့်မီ ဆိပ်ကမ်းဝန်ဆောင်မှုလုပ်ငန်းများကို ဆောင်ရွက်ခြင်းဖြင့် ကျောက်ဖြူအထူးစီးပွားရေးဇုန်၊ ရခိုင်ပြည်နယ်နှင့် မြန်မာနိုင်ငံတို့အတွက် ရေရှည်တည်တံ့ခိုင်မြဲသည့် စီးပွားရေးဖွံ့ဖြိုးမှုနှင့် ကြွယ်ဝမှုတို့ကို ဖြစ်ထွန်းလာစေမည်ဖြစ်ပါသည်။

ကျောက်ဖြူအထူးစီးပွားရေးဇုန်၊ ရေနက်ဆိပ်ကမ်းစီမံကိန်းအကြောင်းအရာအား ခြုံငုံဖော်ပြမှု

ရေနက်ဆိပ်ကမ်းစီမံကိန်းတွင် သင်္ဘောဆိုက်ကပ်ရန်ဆိပ်ခံနေရာ ၆ ခုပါဝင်သည့် မဒေးကျွန်းဆိပ်ကမ်းနှင့် ဆိပ်ခံနေရာ ၄ ခုပါဝင်သည့် ရမ်းဗြဲကျွန်းဆိပ်ကမ်းတို့ပါဝင်ပါသည်။ မဒေးကျွန်းနှင့်ရမ်းဗြဲကျွန်းတို့ကို ဆက်သွယ်မည့်တံတားတစ်စင်းနှင့် စက်မှုဇုန်သို့ဆက်သွယ်မည့် ၁၅ ကီလိုမီတာ (၉.၃ မိုင်) အရှည်လမ်း တစ်လမ်းတို့လည်း ပါဝင်မည်ဖြစ်ပါသည်။ မဒေးကျွန်းဆိပ်ကမ်းသည် ၁၅၀ ဟက်တာ (၃၇၀ ဧက) ရှိပြီး၊ ရမ်းဗြဲကျွန်း ဆိပ်ကမ်းသည် ၉၆ ဟက်တာ (၂၃၀ ဧက) ကျယ်ဝန်းပါသည်။ စီမံကိန်းတစ်ခုလုံး၏ စုစုပေါင်းခန့်မှန်း အကျယ်မှာ ၂၄၆ ဟက်တာ (၆၀၀) ခန့်ဖြစ်ပါသည်။

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

ဆိပ်ကမ်းနှစ်ခုစလုံးတွင် ပါဝင်မည့်အစိတ်အပိုင်းများမှာ ကုန်သေတ္တာဆိပ်ကမ်း၊ ဘက်စုံသုံးဆိပ်ကမ်း၊ ဝန်ဆောင်မှု ဆိပ်ကမ်း၊ ကြီးမားလေးလံသည့်ကုန်သေတ္တာဝင်း၊ ဆိပ်ခံဘေး၊ သင်္ဘောဆိုက်ကပ်မည့်နေရာ၊ ဆောက်လုပ်ရေးကာလ ယာယီဆိပ်ကမ်း၊ ကုန်တင်ကုန်ချရေယာ၊ လေအေးပေးစက်တပ်ဆင်ထားသည့် ကုန်သေတ္တာဝင်း၊ ဟင်းလင်းပြင်ဝင်း၊ အထွေထွေကုန်စည်ဝင်း၊ ၆၆ ကီလိုမီတာလျှပ်စစ်ဓာတ်အားလိုင်း၊ ချဉ်းကပ်လမ်းအသစ်၊ ကုန်ပစ္စည်းများအား ကုန်သေတ္တာ အတွင်းထည့်သည့် သိုလှောင်ရုံနှင့် အကောက်ခွန် စစ်ဆေးရေး ဂိတ်၊ သိုလှောင်ရုံနှင့် ပြုပြင်ထိန်းသိမ်းရေးအလုပ်ရုံ၊ မီးသတ်စခန်း၊ ရေသန့်စင်စက်ရုံ၊ ရေဆိုးသန့်စင်စက်ရုံ၊ လောင်စာဆီဖြည့်သည့်စခန်း၊ စွန့်ပစ်ပစ္စည်းများယာယီသိုလှောင်ရုံ၊ ရုံးအဆောက်အဦ၊ လူနေအဆောက်အဦ၊ စားသောက်ခန်းမ၊ ကုန်တင်ကုန်ချထိန်းချုပ်မှုရုံး၊ အပူချိန်ထိန်းစနစ်၊ ကုန်တင်ကား ရပ်နားဝင်း၊ ကားရပ်နားဝင်း၊ ဝင်-ထွက်ဂိတ်များနှင့် ဂိတ်ရုံး၊ လုံခြုံရေးကင်းစခန်းနှင့် လျှပ်စစ်ဓာတ်အားခွဲရုံ တို့ဖြစ်ကြသည်။

မဒေးကျွန်းဆိပ်ကမ်းနှင့် ရမ်းဗြဲကျွန်းဆိပ်ကမ်းတို့အား စက်မှုဇုန်နှင့် ဆက်သွယ်ပေးမည့် လမ်းတစ်လမ်းကို လည်း တည်ဆောက်မည်။ တံတားတစ်စင်းအပါအဝင် လမ်း၏ စုစုပေါင်းအရှည်မှာ ၁၅ ကီလိုမီတာ (၉.၃ မိုင်) ခန့်ဖြစ်သည်။ ထိုလမ်းမှ မဒေးကျွန်းဆိပ်ကမ်းသို့သွားသည့်ချဉ်းကပ်လမ်းအပိုင်းသည် လေးလမ်း သွားဖြစ်ပြီး လမ်းအကျယ်မှာ ၂၆.၁ မီတာ (၈၅.၆ ပေ) ဖြစ်သည်။ ရမ်းဗြဲကျွန်းဆိပ်ကမ်းသို့သွားသည့် ချဉ်းကပ်လမ်းအပိုင်း သည် နှစ်လမ်းသွားဖြစ်ပြီး လမ်းအကျယ်မှာ ၁၄.၃ မီတာ (၄၇ ပေ) ဖြစ်သည်။

မဒေးကျွန်းဆိပ်ကမ်းဆောက်လုပ်မှုနှင့်အတူ မဒေးကျွန်းမှရမ်းဗြဲကျွန်းသို့ဆက်သွယ်မည့် လေးလမ်းသွား တံတားတစ်စင်းကိုလည်း ဆောက်လုပ်မည်ဖြစ်သည်။



ပုံ-၁။ ကျောက်ဖြူအထူးစီးပွားရေးဇုန် ရေနက်ဆိပ်ကမ်းစီမံကိန်းအခင်းအကျင်းပြပုံ

ရေးသားပြုစုရမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာသုံးစောင်

အထက်တွင်ဖော်ပြထားသည့်အတိုင်း ကျောက်ဖြူအထူးစီးပွားရေးဇုန် ရေနက်ဆိပ်ကမ်းစီမံကိန်းတွင် ဆက်စပ် နေသည့် အစိတ်အပိုင်းသုံးခုပါဝင်သည်။

- (၁) ဆိပ်ခံနေရာ ၆ ခုပါဝင်သည့် မဒေးကျွန်းဆိပ်ကမ်း
- (၂) ဆိပ်ခံနေရာ ၄ ခုပါဝင်သည့် ရမ်းဗြဲကျွန်းဆိပ်ကမ်း

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

(၃) ရေနက်ဆိပ်ကမ်းမှ စက်မှုဇုန်သို့ဆက်သွယ်မည့် တံတားတစ်စင်းအပါအဝင် ၁၅ ကီလိုမီတာ အရှည်လမ်း

ထိုစီမံကိန်းအစိတ်အပိုင်း ၃ ခုကို အကောင်အထည်ဖော်ရာတွင် လိုအပ်သောပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (ESIA) လုပ်ငန်းဆောင်ရွက်ရန်နှင့် စီမံကိန်းအစိတ်အပိုင်း ၁ ခုခြင်းစီအတွက် အစီရင်ခံစာ ၁ စောင်စီ ပြုစုတင်ပြရန် သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနက ညွှန်ကြားခဲ့ပါသည်။

ယခုတင်ပြသော ESIA နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာမှာ ရမ်းဗြဲကျွန်းနှင့်သက်ဆိုင်သည့် အစီရင်ခံစာဖြစ်ပါသည်။

တတိယအဖွဲ့အစည်း ESIA အတိုင်ပင်ခံအဖွဲ့ဖြစ်သည့် MSR Consortium

MSR Consortium သည် ကျောက်ဖြူအထူးစီးပွားရေးဇုန်ရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် လိုအပ်သော ESIA လုပ်ငန်းများဆောင်ရွက်ရန် လွတ်လပ်သော အတိုင်ပင်ခံ၊ တတိယအဖွဲ့အစည်းတစ်ခုအဖြစ် ရွေးချယ်ခြင်းခံခဲ့ရပါသည်။ MSR Consortium အား Myanmar Survey Research (MSR-Myanmar), Sustainable Solutions Global Pty Ltd (SSG-Australia), Peplow Warren Management (PWM-Brunei) တို့နှင့်အတူ ကိုရီးယားသမ္မတနိုင်ငံမှ နိုင်ငံတကာအတိုင်ပင်ခံ အင်ဂျင်နီယာနှစ်ဦးတို့ဖြင့် ဖွဲ့စည်းထားပါသည်။

စီမံကိန်းစီမံခန့်ခွဲမှုအတိုင်ပင်ခံနှင့်နည်းပညာဆိုင်ရာအကြံပေး

ရေနက်ဆိပ်ကမ်းစီမံကိန်း၏ အစပျိုးလုပ်ငန်းနှစ်ခုဖြစ်သည့် ကနဦးဘူမိဗေဒဆိုင်ရာတိုင်းတာခြင်း (PGTS)² လုပ်ငန်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (ESIA) လုပ်ငန်းများအတွက် စီမံခန့်ခွဲမှုအတိုင်ပင်ခံ (PMC)³ နှင့် နည်းပညာဆိုင်ရာအကြံပေး (Technical Advisor) အဖြစ် လုပ်ငန်းနယ်ပယ်အမျိုးမျိုးတွင် ဝန်ဆောင်မှုများပေးနေသည့် နိုင်ငံတကာကုမ္ပဏီတစ်ခုဖြစ်သည့် Hatch Associates Ltd အား စီမံကိန်းအဆိုပြုသူက ခန့်အပ်ခဲ့ပါသည်။

၂။ မူဝါဒ၊ ဥပဒေဆိုင်ရာ နှင့် မူဘောင်အဖွဲ့အစည်းဆိုင်ရာ ခြုံငုံဖော်ပြမှု

ဤအခန်းတွင် ရေနက်ဆိပ်ကမ်းစီမံကိန်းနှင့်စပ်လျဉ်းသည့် ဥပဒေမူဘောင်များကို ဖော်ပြထားပြီး စီမံကိန်းအကောင်အထည်ဖော်ဆောင်ရွက်မည့်သူအနေဖြင့် စီမံကိန်းအဆင့်တိုင်းတွင် မပျက်မကွက်လေးစားလိုက်နာကျင့်သုံးရမည့် နိုင်ငံတော်ကချမှတ်ထားသော မူဝါဒများ၊ တည်ဆဲဥပဒေများ၊ စည်းမျဉ်းစည်းကမ်းများ၊ စံသတ်မှတ်ချက်များ၊ လုပ်ထုံးလုပ်နည်းများနှင့် လုပ်ငန်းစဉ်များကို ဖော်ပြထားခြင်းဖြစ်ပါသည်။ မူဝါဒ၊ ဥပဒေဆိုင်ရာနှင့် မူဘောင်အဖွဲ့အစည်းဆိုင်ရာ ခြုံငုံသုံးသပ်ချက်အသေးစိတ်ကို ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာ (EIA Report) တွင် ဖော်ပြသွားမည်ဖြစ်ပါသည်။

အမျိုးသားအဆင့်မူဝါဒများ၊ အစီအစဉ်များ၊ မဟာဗျူဟာများနှင့်စပ်လျဉ်း၍ မြန်မာနိုင်ငံအမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာမူဝါဒ (၂၀၁၉)၊ မြန်မာနိုင်ငံ ရာသီဥတုပြောင်းလဲမှုဆိုင်ရာမူဝါဒ (၂၀၁၉)၊ အမျိုးသား မြေအသုံးချခြင်းမူဝါဒ (၂၀၁၆)၊ မြန်မာနိုင်ငံ ရာသီဥတုပြောင်းလဲမှုဆိုင်ရာ ပင်မလုပ်ငန်းအစီအစဉ် (၂၀၁၈-၂၀၃၀)၊ မြန်မာနိုင်ငံအမျိုးသားအဆင့် စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု မဟာဗျူဟာနှင့်ပင်မလုပ်ငန်းအစီအစဉ် (၂၀၁၈-၂၀၃၀)၊ မြန်မာနိုင်ငံ၏ ရေရှည်တည်တံ့ခိုင်မြဲပြီး ဟန်ချက်ညီသော ဖွံ့ဖြိုးတိုးတက်မှုစီမံကိန်း (၂၀၁၈-၂၀၃၀) အစရှိသည်တို့ကို ဖော်ပြထားသည်။

² PGTS: Preliminary Geology and Topography Survey
³ PMC: Project Management Consultant

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

စီမံကိန်းနှင့်သက်ဆိုင်သောတည်ဆဲဥပဒေ၊ နည်းဥပဒေ၊ လုပ်ထုံးလုပ်နည်း စုစုပေါင်း ၆၁ ခုကို ဖော်ပြထားသည်။ မြန်မာ့အထူးစီးပွားရေးဇုန်ဥပဒေ (၂၀၁၄)၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂)၊ ပြည်ထောင်စုမြန်မာနိုင်ငံ ပြည်သူ့ကျန်းမာရေးဆိုင်ရာဥပဒေ (၁၉၇၂)၊ လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာဥပဒေ (၂၀၁၉)၊ တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးအား ကာကွယ်စောင့်ရှောက်သည့်ဥပဒေ (၂၀၁၅)၊ မြန်မာ့ဆိပ်ကမ်းအာဏာပိုင်ဥပဒေ (၂၀၁၅)၊ ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများထိန်းသိမ်းရေးဥပဒေ (၂၀၀၆)၊ ယဉ်ကျေးမှုအမွေအနှစ်ဒေသများကာကွယ်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၉)၊ ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅)၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅) တို့ပါဝင်ကြပါသည်။

ကျောက်ဖြူအထူးစီးပွားရေးဇုန်စီမံခန့်ခွဲမှုကော်မတီအပါအဝင် သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၊ ဆောက်လုပ်ရေးဝန်ကြီးဌာန၊ အလုပ်သမားဝန်ကြီးဌာန၊ လယ်ယာစိုက်ပျိုးရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာန၊ ပြည်ထဲရေးဝန်ကြီးဌာနစသည်ဖြင့် စီမံကိန်းအကောင်အထည်ဖော်ရာတွင် အကောင်အထည်ဖော်မည့်သူက ပူးပေါင်းဆောင်ရွက်သွားရမည့် သက်ဆိုင်ရာဝန်ကြီးဌာနများ၏ တာဝန်၊ ဝတ္တရားနှင့် လမ်းညွှန်ချက်များကို အသေးစိတ်ဖော်ပြထားပါသည်။

စီမံကိန်းဆိုင်ရာ ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာ မူဝါဒများကိုလည်းဖော်ပြထားပါသည်။ ထို့အပြင် စီမံကိန်းအကောင်အထည်ဖော်မည့်သူက လိုက်နာရမည့် ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်က ပါဝင် လက်မှတ်ရေးထိုးအတည်ပြုထားသော အပြည်ပြည်ဆိုင်ရာ သဘောတူညီချက်များ၊ ပဋိညာဉ်စာချုပ်များ၊ ညီလာခံဆုံးဖြတ်ချက်များကိုပါဖော်ပြထားပါသည်။ သာဓကအားဖြင့် ကုလသမဂ္ဂ ရာသီဥတုပြောင်းလဲမှုဆိုင်ရာ မူဘောင်ကွန်ဗင်းရှင်း (UNFCCC)⁴၊ ရေနံညစ်ညမ်းမှုကိုကြိုတင်ကာကွယ်မှု၊ တုံ့ပြန်မှုနှင့် ပူးပေါင်းဆောင်ရွက်ရေးဆိုင်ရာ နိုင်ငံတကာကွန်ဗင်းရှင်း (OPRC)⁵၊ သင်္ဘောများကြောင့် ညစ်ညမ်းမှုဖြစ်ပွားခြင်းကို တားဆီးကာကွယ်ရေးနိုင်ငံတကာကွန်ဗင်းရှင်း (MARPOL)⁶၊ ဌာနတိုင်းရင်းသားများအခွင့်အရေးဆိုင်ရာ ကုလသမဂ္ဂ ကြေညာစာတမ်း၊ ကမ္ဘာ့ယဉ်ကျေးမှုနှင့်သဘာဝအမွေအနှစ်များ ကာကွယ်စောင့်ရှောက်ရေးဆိုင်ရာ ယူနက်စကို သဘောတူညီချက်များ (၁၉၇၂) (World Heritage Convention) စသည်တို့ဖြစ်ကြပါသည်။

စီမံကိန်းအကောင်အထည်ဖော်ရာတွင် နိုင်ငံအတွင်းပြဋ္ဌာန်းထားသည့် ဥပဒေများဖြင့် အကျုံးဝင်မှုမရှိသော အခြေအနေများ၊ လစ်ဟာမှုများရှိလာပါက ၎င်းတို့ကိုထိန်းချုပ်နိုင်ရန် အပြည်ပြည်ဆိုင်ရာတွင် လက်ခံကျင့်သုံးသည့်အလေ့အထများကို လိုက်နာဆောင်ရွက်သွားရမည်ဖြစ်သည်။ ထိုအလေ့အထများမှာ အပြည်ပြည်ဆိုင်ရာ ဘဏ္ဍာရေးကော်ပိုရေးရှင်း (IFC)⁷ ၏ ပတ်ဝန်းကျင်နှင့်လူမှုရေး စွမ်းဆောင်ရည်စံနှုန်းများ၊ ပတ်ဝန်းကျင်၊ လုပ်ငန်းခွင်ဘေးကင်းလုံခြုံရေးနှင့် အများပြည်သူကျန်းမာရေးဆိုင်ရာ ယေဘုယျလမ်းညွှန်ချက်များ၊ ဆိပ်ကမ်းများနှင့်သက်ဆိုင်သော ပတ်ဝန်းကျင်၊ လုပ်ငန်းခွင်ဘေးကင်းလုံခြုံရေးနှင့် အများပြည်သူကျန်းမာရေးဆိုင်ရာ လမ်းညွှန်ချက်များတို့ဖြစ်သည်။

၃။ စီမံကိန်းဆိုင်ရာဖော်ပြချက်များနှင့်အခြားနည်းရွေးချယ်ခြင်း

စီမံကိန်းဆိုင်ရာဖော်ပြချက်များ

ရမ်းဗြဲကျွန်းဆိပ်ကမ်းစီမံကိန်းကို ရမ်းဗြဲကျွန်း၏အရှေ့မြောက်ပိုင်းတွင် အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ စီမံကိန်းတည်နေရာအားဖြင့် မြောက်လတ္တီတွဒ် ၁၉° ၂၂' ၄၉.၆၂၃"၊ အရှေ့လောင်ဂျီတွဒ် ၉၃° ၃၇'

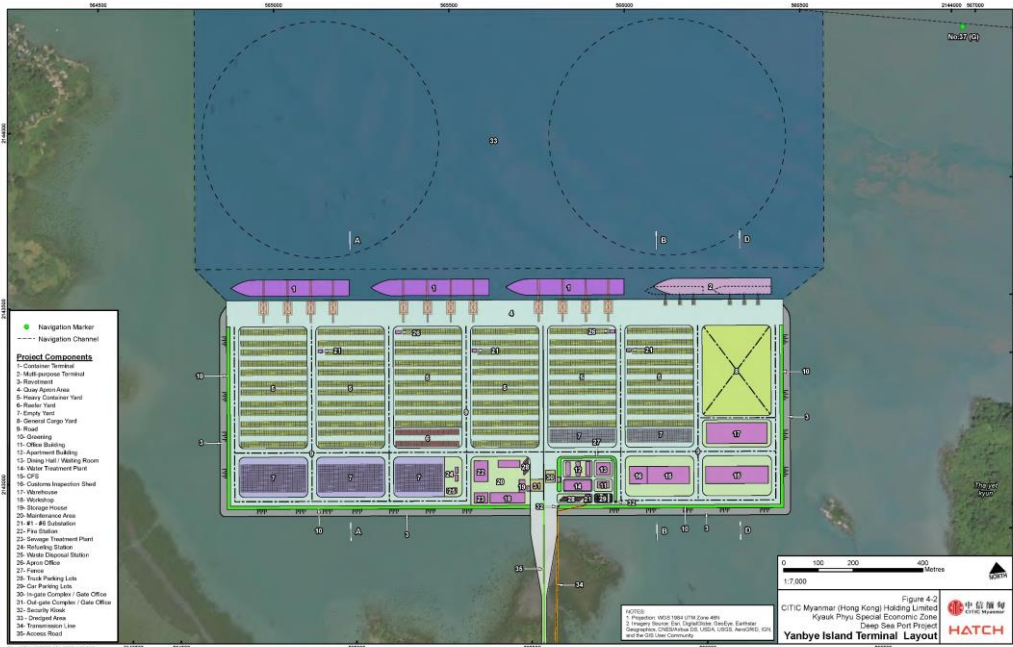
4 UNFCCC: United Nations Framework Convention on Climate Change
5 OPRC: International Convention on Oil Pollution Preparedness, Response and Co-operation
6 MARPOL: International Convention for the Prevention of Pollution from Ships
7 IFC: International Finance Corporation

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

၂၅.၉၁၂"တွင် တည်ရှိပြီး ကျောက်ဖြူမြို့၏ အရှေ့တောင်ဘက် ရေမိုင်အားဖြင့် ၁၀ ကီလိုမီတာ အကွာအဝေး တွင် တည်ရှိပါသည်။ စီမံကိန်းတွင် ဆိပ်ခံနေရာပေါင်း ၄ ခု ပါဝင်ပြီး မြေဧရိယာအားဖြင့် ၉၆ ဟက်တာ (၂၃၀ ဧက) ပေါ်တွင် တည်ဆောက် အကောင်အထည် ဖော်သွားမည် ဖြစ်ပါသည်။

ထိုဆိပ်ခံနေရာ ၄ ခုတွင် ဘက်စုံသုံးဆိပ်ခံနေရာ ၁ ခုနှင့် ကုန်သေတ္တာဆိပ်ခံနေရာ ၃ ခု ပါဝင်မည်ဖြစ်ပြီး စီမံကိန်းအဆင့် ၄ တွင်တည်ဆောက်သွားမည်ဖြစ်သည်။ ရမ်းဗြဲကျွန်းဆိပ်ကမ်းစီမံကိန်းသည် တစ်နှစ်လျှင် ၉၀-၂၀ ကုန်သေတ္တာ (TEU)^၈ ၂.၇၂ သန်းနှင့် အထွေထွေကုန်စည်တန်ချိန်ပေါင်း ၂.၆ သန်းကို ကူးသန်း ရောင်းဝယ်ရေးဆိုင်ရာ ဝန်ဆောင်မှုပေးသွားရန် ရည်ရွယ်ပါသည်။ ထိုဆိပ်ခံနေရာပေါင်း ၄ ခုကို တည်ဆောက်သွားနိုင်ရန်အတွက်ရေနက်ဆိပ်ကမ်း တစ်ခုလုံး၏အရှည်သည် ပျမ်းမျှ ၁၆၀၀ မီတာနှင့် အကျယ် ၆၀၀ မီတာရှိမည်ဖြစ်သည်။



ပုံ-၂။ ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်း စီမံကိန်းလျာထားမှုဖော်ပြချက်

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်းတွင်ပါဝင်မည့်အစိတ်အပိုင်းများနှင့်လုပ်ငန်းဆောင်တာများကိုအောက်ပါ ဇယားဖြင့် ဖော်ပြထားပါသည်။

ဇယား-၁။ ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်းတွင်ပါဝင်မည့်အစိတ်အပိုင်းများနှင့် လုပ်ငန်းဆောင်တာများ

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းဆိုင်ရာဖော်ပြချက်	ပမာဏ/အတိုင်းအတာ
စီမံကိန်းအစိတ်အပိုင်းများ	
စီမံကိန်းဧရိယာ	၉၆ ဟက်တာ (၂၃၀ ဧက)
ကုန်သေတ္တာဆိုင်ကပ်ဆိပ်ခံ	၃ ခု
ဘက်စုံသုံးဆိုင်ကပ်ဆိပ်ခံ	၁ ခု
ဝန်ဆောင်မှုဆိုင်ရာဆိုင်ကပ်ဆိပ်ခံ	-

^၈ TEU: Twenty-foot equivalent unit

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းဆိုင်ရာဖော်ပြချက်	ပမာဏ/အတိုင်းအတာ
အကြီးစား၊ လေးလံသည့်ကုန်သေတ္တာများအတင်အချအရိယာ	၆ နေရာ (၃၇ ဟက်တာ)
နှစ်စဉ်ဝန်ဆောင်မှုပေးနိုင်မည့်ကုန်စည်ပမာဏ (တန်ချိန်ပေါင်း)	၂.၆ သန်း
နှစ်စဉ်ဝန်ဆောင်မှုပေးနိုင်မည့်အများဆုံး (ပေ ၂၀ ယူနစ်) ကုန်သေတ္တာပမာဏအရေအတွက်	၂.၇၂ သန်း
ဆိပ်ကမ်းအခြေခံအဆောက်အအုံတည်ဆောက်ခြင်း (အရှည်)	၁,၆၀၀ မီတာ
စုစုပေါင်းဆိုက်ကပ်ဆိပ်ခံ	၄ ခု
တည်ဆောက်ရေးကာလယာယီဆိပ်ခံတံတား	၁ ခု
သာမန်ကုန်စည် ကုန်တင်ကုန်ချနေရာအကျယ်	၁၂ ဟက်တာ
လေအေးပေးစက်တပ်ဆင်ထားသည့်ကုန်သေတ္တာဝင်းအကျယ်	၁.၂ ဟက်တာ
ဟင်းလင်းပြင်ဝင်းအကျယ်	၈.၆ ဟက်တာ
အထွေထွေကုန်စည်ပစ္စည်းဝင်းအကျယ်	၅.၁ ဟက်တာ
၆၆ ကေမီ ဓါတ်အားလိုင်း (ဆိပ်ကမ်းမှလက်ရှိဓါတ်အားခွဲရုံ များအထိ)	၂,၉၆၅ မီတာ
တံတား	အရှည်ကိုအတည်မပြုရသေး
ချဉ်းကပ်လမ်းအသစ် (၁၃.၅ ကီလိုမီတာ)	၂ လမ်းသွား
ကမ်းထိန်းနံရံအလျား	၂,၈၀၀ မီတာ
ပင်လယ်ရေကြောင်းဆိုင်ရာအစိတ်အပိုင်းများ (ကျောက်ဆူး များနှင့်အတူရေကြောင်းလမ်းပြကိရိယာများ ခန့်မှန်းအရေ အတွက်)	၂၀ ခု (မြစ်တွင်းရေကြောင်းလမ်းအမှတ် အသားများ)
ရေပြင်အတွင်း တည်ဆောက်မည့်ယာယီရေတားနံရံအလျား	၄,၄၀၀ မီတာ
ဆိပ်ကမ်းစီမံကိန်းအတွင်းလမ်းများ၏ဧရိယာ	၁၇.၅ ဟက်တာ
စိမ်းလန်းရေးဧရိယာ	၂.၆ ဟက်တာ
ကုန်သေတ္တာကုန်ပစ္စည်းစခန်းနှင့် အကောက်ခွန်စစ်ဆေးရေးဂိတ် ဧရိယာ	၆.၁ ဟက်တာ
ပြုပြင်ထိန်းသိမ်းရေးနှင့် သိုလှောင်ရုံ	၂ ခု
မီးသတ်စခန်း	၁ ခု
ရေသန့်စင်စက်ရုံ	၁ ခု
ရေဆိုးသန့်စင်စက်ရုံ	၁ ခု
ပင်လယ်ကူးသင်္ဘောများထောက်ပံ့ရေးအခြေစိုက်စခန်း	-
ဆီသိုလှောင်ကန်	-
လောင်စာဆီဖြည့်သည့်စခန်း	၁ ခု
စွန့်ပစ်ပစ္စည်းများယာယီသိုလှောင်ရုံ	၁ ခု
ဆိပ်ကမ်းရုံးအဆောက်အဦ	၁ ခု

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းဆိုင်ရာဖော်ပြချက်	ပမာဏ/အတိုင်းအတာ
လူနေအဆောက်အဦ	၃ ခု
ထမင်းစားခန်းမ	၁ ခု
ကုန်တင်ကုန်ချထိန်းချုပ်မှုရုံး	၁ ခု
ရေပူနှင့်လေအေးပေးစနစ်	၁ ခု
ကုန်တင်ကားများနှင့်ယန္တရားကြီးများရပ်နားဝင်း	၁ ခု (၃၃ စီး)
ကားရပ်နားဝင်း	၁ ခု (၃၃ စီး)
ဆိပ်ကမ်းဝင်-ထွက်ဂိတ်များနှင့်ဂိတ်ရုံး	၁ ခု
လုံခြုံရေးကင်းစခန်း	၁ ခု
လျှပ်စစ်ဓာတ်အားခွဲရုံ	၄ ခု
တစ်နေ့ခန့်မှန်းရေသုံးစွဲမှုပမာဏ	၃,၀၀၀ ကုဗမီတာခန့်
ရေပိုက်လိုင်းတည်ဆောက်မှုအရှည်စုစုပေါင်း	အတည်မပြုရသေး
အများဆုံး လုပ်သားအရေအတွက် (ဆောက်လုပ်ရေးကာလ)	၁,၀၈၃ ဦး
အများဆုံး လုပ်သားအရေအတွက် (လုပ်ငန်းလည်ပတ်ကာလ)	၁,၄၀၀ ဦး
စီမံကိန်းလုပ်ငန်းဆောင်တာများ	
ပြန်လည်ဖော်ဆောင်မည့်မြေဧရိယာ	၉၆ ဟက်တာ
နန်းတူးဖော်ခြင်းလုပ်ငန်း (ရေစူးအတွက်လျှော့စောက်များ၊ ဆိုက်ကပ်လမ်းကြောင်းနှင့် ခုတ်မောင်းမည့်လမ်းကြောင်းများ ဖော်ဆောင်ခြင်းတို့အတွက် ခန့်မှန်းထိခိုက်မှုရှိနိုင်မည့်ရေပြင် ဧရိယာနှင့် ဆယ်ယူမည့် နန်းထုထည်)	၂၄၃ ဟက်တာ (ဧရိယာ) ၂၂ ကုဗမီတာ (ထုထည်သန်းပေါင်း)
မိုင်းခွဲလုပ်ငန်းများ (လိုအပ်သည့်အတိုင်း)	---
ဆိပ်ကမ်းအတွက် အမာခံအုတ်မြစ်ချလုပ်ငန်းတည်ဆောက်ရေး (ဆိပ်ကမ်းစီမံကိန်းနယ်နိမိတ်အတွင်း ၁၅ မီတာ တူညီ အကွာအဝေးဖြင့် ပိုင်ရိုက်ခြင်းလုပ်ငန်းများနှင့် ဝန်ချိုကရိန်း အုတ်မြစ်တည်ဆောက်ခြင်းလုပ်ငန်း)	၁၀၇ ခု (ခန့်မှန်းပိုင်အရေအတွက်)
ပြည်သူ့အကျိုးပြုဆောက်လုပ်ရေးနှင့် မြေသားလုပ်ငန်းများ (မြေရှင်း၊ ပြင်ဆင်၊ ပုံဖော်ခြင်းများစသည်ဖြင့်)	အတည်မပြုရသေး
ပင်လယ်ပြင်တွင် စွန့်ပစ်မည့် နန်းပမာဏ (တူးဖော်နန်းပမာဏ၏ ၃၀% ကို ပြန်လည်အသုံးပြုမည်ဟုယူဆ၍ ကျန်ရှိသော ၇၀% ကို ပင်လယ်ပြင်တွင် စွန့်ပစ်ရန် ကနဦးရည်ရွယ်ပါသည်)	၁၅.၄ ကုဗမီတာ (ထုထည်သန်းပေါင်း)
ရေကြောင်းအသွားအလာ (တည်ဆောက်ရေးကာလ) (ကျောက်ဖြူမြို့ ဆိပ်ကမ်းမှ CNPC ဆိပ်ကမ်းအထိ)	အတည်မပြုရသေး
ရေကြောင်းအသွားအလာ (လုပ်ငန်းလည်ပတ်ရေးကာလ) (ပို့ကုန်၊ သွင်းကုန်ပမာဏများအပေါ်မူတည်၍ နှစ်စဉ်)	အတည်မပြုရသေး

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းဆိုင်ရာဖော်ပြချက်	ပမာဏ/အတိုင်းအတာ
တိုးတက်များပြားလာမှုများ ရှိလာမည်ဖြစ်သည်။)	
ရေပိုက်သွယ်တန်းခြင်းလုပ်ငန်းများ	အတည်မပြုရသေး

စီမံကိန်းနှင့်စပ်လျဉ်းသည့် အခြားနည်းဆောင်ရွက်နိုင်မှုများ

စီမံကိန်းနှင့်စပ်လျဉ်း၍ ထည့်သွင်းစဉ်းစားထားသော အခြားနည်းဆောင်ရွက်နိုင်မှုများမှာ -

- ၁။ စီမံကိန်းတည်နေရာဆိုင်ရာ အခြားနည်းဆောင်ရွက်နိုင်မှုများ
- ၂။ စီမံကိန်း အနေအထားဆိုင်ရာ အခြားနည်းဆောင်ရွက်နိုင်မှုများ
- ၃။ ဒီဇိုင်းနည်းပညာပိုင်းဆိုင်ရာ အခြားနည်းဆောင်ရွက်နိုင်မှုများ နှင့်
- ၄။ စီမံကိန်းအကောင်အထည်ဖော်မည့်အစီအစဉ်ကို ရပ်ဆိုင်းခြင်းတို့ဖြစ်သည်။

အခြားနည်းလမ်းရွေးချယ်ခြင်းနှင့်ပတ်သက်၍ လူမှုရေးရှုထောင့်မှလည်းကောင်း၊ သဘာဝပတ်ဝန်းကျင်အမြင်အရ လည်းကောင်း၊ စီးပွားရေးဆိုင်ရာ အသွင်အပြင်များအရလည်းကောင်း ထည့်သွင်းစဉ်းစားပါသည်။ အဆိုပြုထားသော တည်နေရာသည် စီမံကိန်းအကောင်အထည်ဖော်ရန်အတွက် အသင့်လျော်ဆုံးနေရာဖြစ်သည်ဟုယူဆနိုင်ပါသည်။ သို့သော် ထိုအဆိုပြုထားသည့်နေရာ၌ ဖြစ်လာနိုင်ခြေရှိသောကိစ္စရပ်များအတွက် လေ့လာဆန်းစစ်မှုများကို စီမံကိန်းမစတင်မီကပင် အပြည့်အဝလုပ်ဆောင်ရန် အလေးအနက်အကြံပြုပါသည်။ လက်ရှိလျာထားသည့် စီမံကိန်းအနေအထားပုံစံ၏ ဦးတည်ရာနှင့် တည်နေရာများအား အပြောင်းအလဲများပြုလုပ်ပါက ရေကြောင်းသွားလာမှု ဧရိယာ နှင့် သင်္ဘောများခတ်မောင်းသွားလာမှုအပေါ် သက်ရောက်မှုများဖြစ်ပေါ်လာနိုင်ပါသည်။

ယခုအဆိုပြုထားသည့် ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်းသည် ပဉ္စမမျိုးဆက်ဘက်စုံသုံးရေနက်ဆိပ်ကမ်း၏ စံသတ်မှတ်ချက်များအားလုံးနှင့်ကိုက်ညီမှုရှိပါသည်။ နိုင်ငံတကာလမ်းညွှန်ချက်များနှင့်အညီ အကောင်းဆုံးပုံစံဖြင့် အကောင်အထည်ဖော်မည့်ရည်ရွယ်ချက်အား စီမံကိန်းအဆိုပြုသူက ဖော်ပြထားသည်။ လက်ရှိဖော်ပြထားသော ဘက်စုံသုံးရေနက်ဆိပ်ကမ်း၏အတိုင်းအတာနှင့်ဒီဇိုင်းများသည် နောက်ဆုံးမျိုးဆက်ခေတ်မီရေနက်ဆိပ်ကမ်း ပုံစံအတိုင်းဖြစ်၍ အခြားဒီဇိုင်းနည်းပညာပိုင်းဆိုင်ရာ ပြောင်းလဲရွေးချယ်ရန် မလိုအပ်ပါ။

စီမံကိန်းအကောင်အထည်ဖော်မည့်အစီအစဉ်အား ရပ်ဆိုင်းခြင်းနည်းလမ်းကိုရွေးချယ်ပါက သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာကဏ္ဍများအပေါ် ဆိုးကျိုးသက်ရောက်မှုများ မရှိနိုင်တော့ပါ။ ထိုနည်းလမ်းကိုလည်း ရွေးချယ်စရာတစ်ခု အဖြစ် ထည့်သွင်းစဉ်းစားခဲ့ပါသည်။ သို့ရာတွင် စီမံကိန်းကို အကောင်အထည်ဖော်ခြင်း မပြုတော့ဘဲ စွန့်လွှတ်လိုက်ပါက ဒေသခံပြည်သူများနှင့် အစိုးရတို့ (ပြည်နယ်နှင့်ပြည်ထောင်စု) အနေဖြင့် ဤစီမံကိန်းမှရရှိနိုင်မည့် အခွင့်အလမ်းများကို လက်လွှတ်ဆုံးရှုံးကြလိမ့်မည် ဖြစ်သည်။

ရေနက်ဆိပ်ကမ်းများသည် စီးပွားရေးဖွံ့ဖြိုးမှုအတွက် အလွန်အရေးကြီးသော်လည်း ဆောက်လုပ်မှု၊ လုပ်ငန်းလည်ပတ်မှု၊ ပင်လယ်ရေကြောင်းသွားလာမှု၊ ကုန်ပစ္စည်းများကိုင်တွယ်မှုနှင့် ကုန်းလမ်းပို့ဆောင်ရေးတို့ကြောင့် ဖြစ်ပေါ်လာမည့် လေထုနှင့်ရေထုညစ်ညမ်းစေခြင်းက သဘာဝပတ်ဝန်းကျင်အပေါ်တွင် လည်းကောင်း၊ ဒေသခံများ၏ အသက်မွေးဝမ်းကျောင်းလုပ်ငန်းများနှင့် လူမှုရေးကဏ္ဍများအပေါ်တွင်လည်းကောင်း ကြီးမားသောသက်ရောက်မှုများ ဖြစ်ပေါ်လာစေနိုင်ပါသည်။ ရေနက်ဆိပ်ကမ်းများတည်ဆောက်လုပ်ကိုင်ခြင်း ကြောင့် ဖြစ်ပေါ်လာမည့် သဘာဝပတ်ဝန်းကျင်အပေါ် ဆိုးရွားသောသက်ရောက်မှုများအကြောင်းကို ကမ္ဘာ့ဘဏ်၊

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

အာရှဖွံ့ဖြိုးမှုဘဏ်နှင့် နိုင်ငံတကာဆိပ်ကမ်းများအသင်းတို့အပါအဝင် အဖွဲ့အစည်းအများအပြားက ဖော်ထုတ် ရေးသားတင်ပြခဲ့ပြီးဖြစ်ပါသည်။

တည်ဆောက်ရေးစီမံကိန်းလုပ်ငန်းများနှင့်ပတ်သက်၍ ESIA ကိုဆောင်ရွက်ခြင်းအားဖြင့် ဤစီမံကိန်း၏ ထူးခြားသော သက်ရောက်မှုများကို ဖော်ထုတ်နိုင်မည်ဖြစ်သည်။ ဆိုးကျိုးသက်ရောက်မှုများထက် ကောင်းသောအကျိုးခံစားမှုများက ပိုမိုအလေးသာစေရန်အတွက် သော်လည်းကောင်း၊ စီမံကိန်းရပ်ဆိုင်းခြင်း နည်းလမ်းအား ရှောင်ရှားရန်အတွက်သော် လည်းကောင်း အဆိုပြုထားသည့် သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာထိခိုက်မှုလျော့ပါးစေသည့် နည်းလမ်းများကို လက်တွေ့ဖော်ဆောင်ရန် အရေးကြီးပါ သည်။ ၎င်းနည်းလမ်းများကို EIA အစီရင်ခံစာတွင် အသေးစိတ် ဖော်ပြမည်ဖြစ်ပါသည်။

၄။ ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များဖော်ပြချက်

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအစီရင်ခံစာ၏ ယခုအပိုင်းသည် ရခိုင်ပြည်နယ်၊ ကျောက်ဖြူမြို့နယ်၊ ရမ်းဗြဲကျွန်းရှိ ရေနက်ဆိပ်ကမ်းစီမံကိန်းနေရာ၏အနီးတစ်ဝိုက်တွင် လက်ရှိတည်ရှိနေသော သဘာဝပတ်ဝန်း ကျင်နှင့်လူမှုစီးပွားဆိုင်ရာ အခြေအနေများကို ဖော်ပြထားပါသည်။

ရမ်းဗြဲကျွန်းတွင် ပင်မဆိပ်ကမ်းဆောက်လုပ်ရန်အတွက် သံဇော်မြစ်၏ အစိတ်အပိုင်းတစ်ခုကို အသုံးပြုရန် လိုအပ်ပါသည်။ ကျောက်ဖြူအထူးစီးပွားရေးဇုန် မဒေးကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်းသည် မြောက်လတ္တီတွဒ် ၁၉° ၂၂' ၄၀.၆၉၅"၊ အရှေ့လောင်ဂျီတွဒ် ၉၃° ၃၉' ၂၄.၆၄၆" တွင်တည်ရှိပြီး၊ ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်း စီမံကိန်းသည် မြောက်လတ္တီတွဒ် ၁၉° ၂၂' ၄၉.၆၂၃"၊ အရှေ့လောင်ဂျီတွဒ် ၉၃° ၃၇' ၂၅.၉၁၂" တွင် တည်ရှိပါ သည်။ ထိုဆိပ်ကမ်းများနှင့် ကျောက်ဖြူ အထူးစီးပွားရေးဇုန်ရှိ စက်မှုဇုန်တို့အား ဆက်သွယ်မည့် ၁၅ ကီလိုမီတာ အရှည် လမ်းတစ်လမ်းနှင့် တံတားတစ်စင်းတို့ ပါဝင်ပါသည်။ ရေနက်ဆိပ်ကမ်းစီမံကိန်းသည် ရမ်းဗြဲကျွန်း အရှေ့မြောက်ပိုင်းနှင့်အနီးအနားရှိ ပင်လယ်ရေပြင်ဧရိယာ စုစုပေါင်းဧရိယာ ၃၃၉ ဟက်တာကို လွှမ်းခြုံ သက်ရောက်မည်ဖြစ်သည်။ သို့ဖြစ်၍ ထိုနေရာများသည် အဓိကအာရုံစိုက် လေ့လာရမည့် လွှမ်းမိုးမှုခံရမည့် ဧရိယာဖြစ်သည်။

လေ့လာမှုနယ်ပယ်သတ်မှတ်ခြင်းအား အရည်အသွေးပိုင်းဆိုင်ရာသုတေသနနည်းလမ်း (qualitative) ဖြင့် လည်းကောင်း၊ အရေအတွက်ပိုင်းဆိုင်ရာ သုတေသနစစ်တမ်းကောက်ယူခြင်းနည်းလမ်း (quantitative) ဖြင့်လည်းကောင်း၊ ကွင်းဆင်းမှုများနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာကနဦးအခြေခံ အချက်အလက်များ ကောက်ယူခြင်းနည်းလမ်းများအပေါ်အခြေ၍ လေ့လာဆန်းစစ်သတ်မှတ်ပါသည်။ သဘာဝပတ်ဝန်းကျင် ဆိုင်ရာ အဓိကလေ့လာမှုနယ်ပယ်များဖြစ်သည့် ရုပ်ပိုင်းဆိုင်ရာ၊ ဇီဝဆိုင်ရာနှင့် လူမှုရေးဆိုင်ရာပတ်ဝန်းကျင် တို့ကို အဓိကထားလေ့လာပါသည်။ ထို့အပြင် စီမံကိန်းဒီဇိုင်းအဆိုပြု အစီရင်ခံစာများ၊ အလားတူစီမံကိန်း များနှင့် သက်ဆိုင်သောစာပေမှတ်တမ်းမှတ်ရာများနှင့် ပညာရပ်ပိုင်းဆိုင်ရာ အစီရင်ခံစာများကို အသေးစိတ် လေ့လာမှုများပြုလုပ်ပါသည်။ နောက်တစ်ဆင့်တွင် ECD ၏ နယ်ပယ်အတိုင်းအတာဆိုင်ရာ အကြံဉာဏ်များ၊ လုပ်ထုံးလုပ်နည်းများ၊ ညွှန်ကြားချက်များနှင့်ကိုက်ညီမှုရှိသည့် EIA နယ်ပယ်အတိုင်းအတာ အကန့်အသတ်များ ကိုအလေးထားလျက် သက်ရောက်မှုများအားဆန်းစစ်ခြင်းကို ဆောင်ရွက်ပါမည်။ EIA လုပ်ငန်းစဉ် အစိတ် အပိုင်းအသီးသီး၏ လေ့လာမှုနယ်ပယ်ကန့်သတ်ချက်များနှင့် ကန့်သတ်ရသည့် အကြောင်းရင်းများကို အောက် တွင် ဆက်လက်ဖော်ပြထားပါသည်။

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင်အခြေအနေများ

ရခိုင်ကမ်းရိုးတန်း၏ ရာသီဥတုကို ပူပြင်းသောရာသီ (မတ်လမှ မေလအထိ)၊ စိုစွတ်ရာသီ (ဇွန်လမှ အောက်တိုဘာလ အထိ) နှင့် ဆောင်းရာသီ သို့မဟုတ် အေးမြသောရာသီ (နိုဝင်ဘာလမှ ဖေဖော်ဝါရီလအထိ) ဟူ၍ ယေဘုယျ သတ်မှတ် နိုင်သည်။ အဆိုပါဒေသအား အပူပိုင်းမှတ်သုံးရာသီကာလနှစ်ခုက လွှမ်းမိုးလျက်ရှိသည်။ ဇွန်လမှ စက်တင်ဘာလအထိ ပထမကာလတွင် အနောက်တောင်မှတ်သုံးလေ၏ လွှမ်းမိုးမှုခံရပြီး ကျယ်ပြန့်သောတိမ်ဖုံးလွှမ်းမှု၊ နေ့စဉ်နိုးပါး မိုးရွာသွန်းမှုနှင့်အတူ မိုးသက်လေပြင်းများ၊ မိုးထစ်ချုန်းရွာခြင်းများ ဖြစ်ပေါ်လေ့ရှိပါသည်။ ဒီဇင်ဘာလမှ ဧပြီလအထိ ဒုတိယကာလတွင် အရှေ့မြောက်မှတ်သုံးလေတိုက်ခတ်ပြီး အပူချိန်နည်းပါးကာ စိုထိုင်းဆနည်းပါးမှု ဖြစ်ပေါ်ပြီး မိုးရွာသွန်းမှုနည်းပါးသည်။

ရမ်းဗြဲကျွန်းအတွက် လုံလောက်ပြည့်စုံသော လေထုအရည်အသွေး စောင့်ကြည့်ခြင်းဆိုင်ရာမှတ်တမ်းများ မရှိပါ။ ကျောက်ဖြူသဘာဝဓာတ်ငွေ့သုံးဓာတ်အားပေးစက်ရုံ၊ ဒေသတွင်းကုန်းတွင်း၊ ရေကြောင်းယာဉ်များ (သင်္ဘောနှင့် မော်တော်ယာဉ်သွားလာမှု)၊ ထင်းမီးရှို့ခြင်းတို့မှထွက်ရှိသော အမိုးအငွေ့များကို လေထုအတွင်း သိသာထင်ရှားသော ထုတ်လွှတ်မှုများအဖြစ် သတ်မှတ်နိုင်ပါသည်။ ဒေသ၏ကျေးလက်သဘာဝနှင့် ကမ်းရိုးတန်းမိုးလေဝသဆိုင်ရာ လွှမ်းမိုးမှုများကြောင့် လေထုညစ်ညမ်းမှုဖြစ်စေသည့် အဆိပ်အတောက် ဓာတ်ငွေ့များ ပါဝင်မှုနည်းပါးသေးသည်ဟု သတ်မှတ်နိုင်ပါသည်။ သို့သော် အခြေခံပတ်ဝန်းကျင်လေထု အရည်အသွေး အချက်အလက်စုဆောင်းမှုလုပ်ငန်း၏ တစ်စိတ်တစ်ပိုင်းအနေဖြင့် MSR သည် လေ့လာမှု ပြုလုပ်မည့် နယ်မြေများရှိ ပဏာမအခြေခံ လေထုအရည်အသွေး အချက်အလက်စုဆောင်းမှုကို လုပ်ဆောင်ခဲ့ သည်။ ၇ ရက် ဆက်တိုက်ကောက်ယူထားသည့် SO₂ နှင့် NO₂ နမူနာ ရလဒ်များအရ ဤဓာတ်ငွေ့ ၂ ခုသည် ဒေသတွင်းလေထုအရည်အသွေးညစ်ညမ်းမှုကို ဖြစ်စေသည်ဟု ရှာဖွေဖော်ထုတ် တွေ့ရှိခဲ့သည်။

အလားတူပင် ဆူညံသံနှင့်တုန်ခါမှုဆိုင်ရာ အခြေခံအချက်အလက်စုဆောင်းခြင်းကို လုပ်ဆောင်ခဲ့သည်။ ၂ ရက် ဆက်တိုက် ကောက်ယူခဲ့သော ဆူညံသံနှင့်တုန်ခါမှုဆိုင်ရာအချက်အလက်များအရ ဧရိယာအတွင်း ဆူညံသံ ပြင်းအားမြင့်မား နေသည်ကို တွေ့ရှိရပါသည်။ ဤကဲ့သို့ဖြစ်ခြင်းမှာ ရာသီဥတုအပြောင်းအလဲများနှင့် ငှက်များနှင့်အင်းဆက်ပိုးမွှားများမှ ထွက်ပေါ်လာသည့် နောက်ခံဆူညံသံများကြောင့်ဟု တွေ့ရှိရပါသည်။

စီမံကိန်းသည် မြန်မာနိုင်ငံအနောက်ဘက်ခြမ်းရှိ ရခိုင်ကမ်းရိုးတန်း၏ မြေနိမ့်ပိုင်းများပေါ်တွင် တည်ရှိသည်။ ရမ်းဗြဲကျွန်း ၏ မြေမျက်နှာသွင်ပြင်သည် စိမ့်မြေအဖြစ်တည်ရှိပြီး၊ ယေဘုယျအားဖြင့် ညီညာပြန့်ပြူးသည်။ ကျွန်း၏ မြောက်ဘက်ပိုင်း ရှိ အမြင့်ဆုံးနေရာသည် မီတာ ၁၅၀ အောက်တွင်ရှိသည်။ အဆိုပြုစီမံကိန်းသည် ကျွန်း၏မြောက်ပိုင်းနယ်မြေဖြစ်သည့် အရှေ့မြောက်ဘက်ကျွန်းဆွယ်အပိုင်းတွင်ကျရောက်သည်။

မြန်မာနိုင်ငံ၏ ငလျင်ဇုန်မြေပုံအရ အဆိုပြုထားသောစီမံကိန်းသည် အားပြင်းငလျင်ဇုန်အတွင်းတွင် တည်ရှိ သည်။ ထို့ကြောင့် စီမံကိန်းဆိုင်ရာ အင်ဂျင်နီယာတွက်ချက်မှုများနှင့် ဒီဇိုင်းအားလုံးသည် ငလျင်အမျိုးအစား မာကာဒါလီ (Mercalli) စကေး၊ အဆင့်-၈ ကို ခံနိုင်ရည်ရှိသော တွက်ချက်မှုနှင့် ဒီဇိုင်းဖြစ်ရန်လိုအပ်သည်။

ရမ်းဗြဲကျွန်း၏ မြေအမျိုးအစားနှင့် သွင်ပြင်လက္ခဏာများသည် မြေနိမ့်ပိုင်းနေရာများတွင် တွေ့ရှိရသော ရွှံ့စေးနှင့် ရွှံ့နွံမြေအမျိုးအစားဖြစ်ပြီး ဂဝံမြေအုပ်စုထဲတွင်ရှိသည်။ ထို့ကြောင့် အပင်အာဟာရဖြစ်သည့် ဖော့စဖိုးရပ်ဓာတ်သတ္တု ပါဝင်မှုနည်းပါးကာ ပိုတက်စီယမ်ဓာတ်မြင့်မားပြီး ဇီဝနိုက်ထရိုဂျင် အလယ်အလတ် ပါဝင်သည်။ မြေဆီလွှာတွင် အက်စစ်နှင့်အယ်လကာလိုင်းဓာတ်ပါဝင်မှု (pH) သည် ၄.၅ နှင့် ၆ ကြားတွင် ရှိကြောင်း လေ့လာသိရှိရပါသည်။ ထိုရလဒ်များအား အခြေခံမြေဆီလွှာအချက်အလက်စုဆောင်းခြင်း အစီအစဉ်ဖြင့် ထပ်မံအတည်ပြုသွားပါမည်။

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ရမ်းဗြဲကျွန်း၏ဇလဗေဒအခြေအနေအရ မြေအောက်ရေနှင့်မြေမျက်နှာပြင်ရှိရေအရင်းအမြစ် ၂ မျိုးလုံးတွင် ရေချိုကို တွေ့ရှိရပြီး ပင်လယ်ရေ (ဆားငန်ရေ) လည်းရှိပါသည်။ စီမံကိန်းဧရိယာအတွင်းရှိ လက်ရှိ မြေအောက် ရေအရည်အသွေး အချက်အလက်ကို မရရှိနိုင်ပါ။ မျက်နှာပြင်ရေ၊ မြေအောက်ရေနှင့် ပင်လယ်ရေများ၏ အခြေခံမူလရေအရည်အသွေးကို နေရာ ၁၉ ခုတွင် ကောက်ယူတိုင်းတာပြီး စီမံကိန်းနှင့် စီမံကိန်းဝန်းကျင်ရှိ ရေအရည်အသွေးအဖြစ် မှတ်တမ်းတင်ထားမည် ဖြစ်သည်။

စီမံကိန်းဧရိယာအတွင်းရှိ မြစ်ချောင်းများသည် မြစ်ဝနှင့် နန်းမြေပို့ချသည့် ဒီရေအတက်အကျရှိသောနေရာများ ဖြစ်ပြီး၊ မြစ်ချောင်းကွန်ရက်များနှင့်ရေချိုစီးဆင်းမှုများစွာရှိပါသည်။ သို့သော် အနည်းငယ်သော အငန်ဓာတ် သည်လည်း တစ်နှစ်ပတ်လုံးရှိနေပါသည်။

ဒေသအတွင်းရှိ ဒီရေအခြေအနေနှင့်ပတ်သက်၍ တစ်ရက်လျှင် ဒီရေအတက်နှစ်ကြိမ်၊ အကျနှစ်ကြိမ်ရှိပါသည်။ ကျောက်ဖြူဆိပ်ကမ်းအတွက်ထုတ်ပြန်ထားသော ၂၀၁၄ ခုနှစ်၊ ပင်လယ်ရေကြောင်းဇယားများအရ ရမ်းဗြဲကျွန်း ဆိပ်ကမ်းနေရာတွင် ဒီရေတက်ချိန်အတွင်းရေအမြင့် ၃.၂ မီတာနှင့် ၂.၆ မီတာအကြားရှိပြီး၊ ဒီရေကျချိန်တွင် ၁.၀ မီတာမှ ၀.၆ မီတာအကြား ပြောင်းလဲမှုရှိပါသည်။

အဆိုပြုထားသောစီမံကိန်းအား ရမ်းဗြဲကျွန်းနှင့်မဒေးကျွန်းတို့၏ မြေမျက်နှာသွင်ပြင်ယှဉ်တွဲတည်ရှိရာတွင် အကောင်အထည်ဖော်မည်ဖြစ်သည်။ စီမံကိန်းတည်ဆောက်မည့်တည်နေရာအနီး ပတ်ဝန်းကျင်တွင် သဘာဝဘေးအန္တရာယ်ကြောင့် အသက်မွေးဝမ်းကျောင်းလုပ်ငန်းများအားထိခိုက်မှုနှင့် မြေပြိုမှုဆိုင်ရာ ဘေးအန္တရာယ်များကို မှတ်တမ်းတင် ထားခြင်း မတွေ့ရှိရသေးပါ။

လယ်ကွင်းများအားပြန်လည်စိုက်ပျိုးခြင်းမပြုမီ ရှင်းလင်းရန်အတွက် မီးရှို့ခြင်းသည် ရမ်းဗြဲကျွန်းအတွက် အခြေခံပြဿနာ တစ်ခုဖြစ်သည်။ အထူးသဖြင့် လယ်ယာမြေများဖော်ထုတ်ရန်အတွက် သစ်တောများနှင့် မြက်ခင်းစားကျက်ကွင်းပြင်များ အတွင်းသို့ကျူးကျော်ဝင်ရောက်၍ မြေနေရာရှင်းလင်းခြင်း၊ မီးရှို့ခြင်းများသည် လူလုပ်တောမီးအဖြစ် ဤဒေသတွင် တွေ့ရှိရသော လယ်ယာစိုက်ပျိုးခြင်းဆိုင်ရာဓလေ့တစ်ခုဖြစ်သည်။

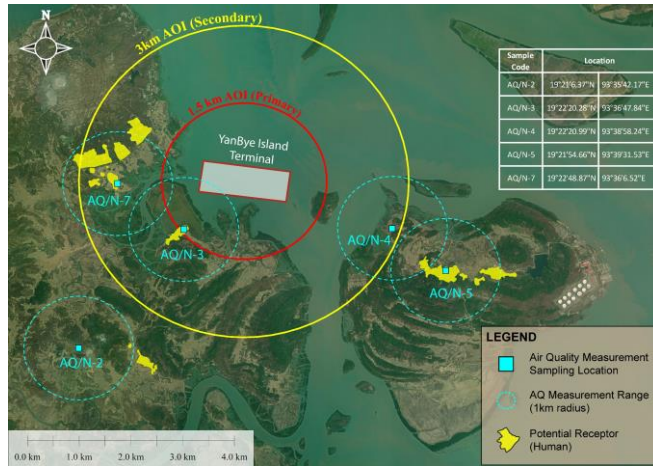
ရာသီဥတုပြောင်းလဲခြင်းဆိုင်ရာ သုတေသနရလဒ်များ၏တွေ့ရှိချက်အရလည်းကောင်း၊ ပါရီသဘောတူညီချက် ဖြစ်သော အပူချိန် ၁.၅ ဒီဂရီစင်တီဂရိတ် ပို၍ပူပြင်းလာမည့် ဘေးအန္တရာယ်ကိုပါ ထည့်သွင်းစဉ်းစားလျှင် အဆိုပြုစီမံကိန်း အနီးမြေနေရာများနှင့် ရမ်းဗြဲကျွန်းတို့သည် ကမ်းရိုးတန်းရေလွှမ်းမိုးမှု အန္တရာယ်သက်ရောက် နိုင်သည့် အခြေအနေတွင် ရှိနေပါသည်။

ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင် (Physical Environment) အတွက် လေ့လာမှုနယ်ပယ်အကျယ်အဝန်း သတ်မှတ်ခြင်း

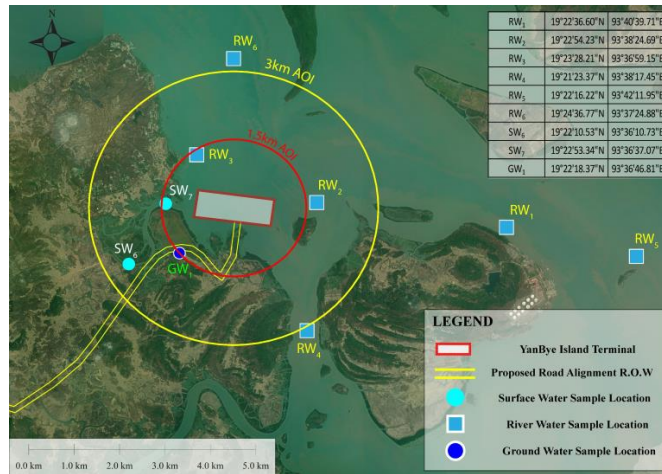
ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်း ဆောင်ရွက်ရာတွင် ရုပ်ပိုင်း ဆိုင်ရာပတ်ဝန်းကျင်လေ့လာမှုအဖြစ် ရေ၊ လေ၊ မြေနှင့် အရင်းအမြစ်စီမံခန့်ခွဲမှုများ ပါဝင်ပါသည်။ လေ့လာမှုနယ်ပယ် ကန့်သတ်ချက်နှင့်ပတ်သက်၍ တိုက်ရိုက်လွှမ်းမိုးနိုင်မည့်ဧရိယာအဖြစ် စီမံကိန်း၏ဗဟိုမှ အချင်းဝက် ၁.၅ ကီလိုမီတာ သတ်မှတ်ပြီး တစ်ဆင့်ခံလွှမ်းမိုး သက်ရောက်နိုင်မည့် ဧရိယာအဖြစ် အချင်းဝက် ၃ ကီလိုမီတာ အဝန်းအပိုင်းများအတွင်း အသီးသီးသတ်မှတ် လေ့လာမှုများပြုလုပ်ရန်ဆုံးဖြတ်ပါသည်။ နယ်ပယ် သတ်မှတ်ချက်များကို အဆိုပြုစီမံကိန်း၏ အရွယ်အစားနှင့် လုပ်ငန်းစဉ်များအပေါ်အခြေခံပြီး ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းကို အဆင့်တိုင်းတွင် လေ့လာမှု ပြုလုပ်ပါမည်။

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)



ပုံ-၃။ သက်ရောက်လွှမ်းမိုးမှုရှိနိုင်မည့်ဧရိယာတွင်း လေနှင့် ဆူညံသံဆိုင်ရာ ပတ်ဝန်းကျင်အရည်အသွေး အချက်အလက်များကောက်ယူစုဆောင်းမည့်နေရာပြပုံ



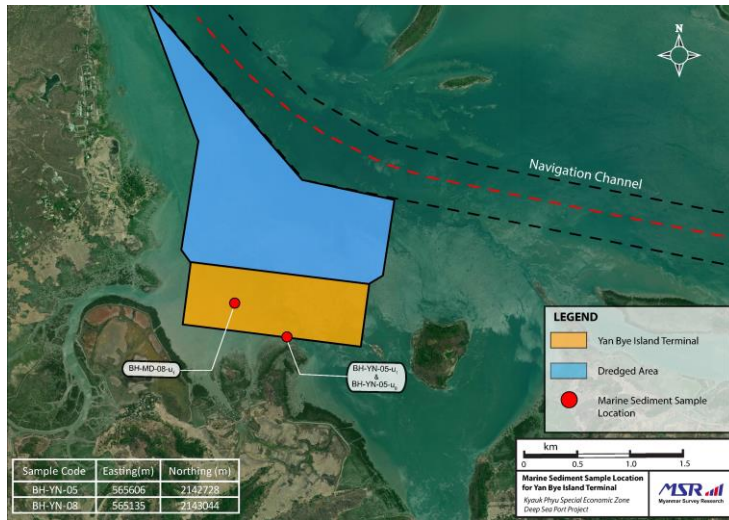
ပုံ-၄။ သက်ရောက်လွှမ်းမိုးမှုရှိနိုင်မည့်ဧရိယာအတွင်းနှင့်ပြင်ပရှိ ပတ်ဝန်းကျင် ရေအရည်အသွေး အချက်အလက်များကောက်ယူစုဆောင်းမည့်နေရာပြပုံ



ပုံ-၅။ သက်ရောက်လွှမ်းမိုးမှုရှိနိုင်မည့်ဧရိယာအတွင်းရှိ မြေအရည်အသွေးအချက်အလက်များ ကောက်ယူစုဆောင်းမည့်နေရာပြပုံ

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)



ပုံ-၆။ စီမံကိန်းဧရိယာအတွင်းရှိ နန်းနှင့်မြစ်ကြမ်းပြင်ပတ်ဝန်းကျင်အရည်အသွေးအချက်အလက်များ ကောက်ယူစုဆောင်းမည့်နေရာပြပုံ

ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင်အတွက်လေ့လာမှုနယ်ပယ်

ရေနက်ဆိပ်ကမ်းစီမံကိန်းနှင့်ပတ်သက်၍ EIA ၏ ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင် လေ့လာမှုများကို ခြောက်သွေ့ ရာသီနှင့် စိုစွတ်ရာသီ နှစ်ပိုင်းခွဲ၍သိပ္ပံနည်းကျကောက်ယူရာတွင် လေထု၊ ဆူညံသံ၊ ရေ၊ မြေသားနှင့် ပင်လယ်ရေအောက် အနည်အနှစ်များစသည်ဖြင့် ပါဝင်ပါသည်။ ထိုအချက်အလက်များကို စီမံကိန်းဧရိယာ အတွင်းနှင့်အနီးအနားနေရာများတွင်ကောက်ယူပြီးနောက် ထိုရေ၊ မြေမှုန့်များ အတွင်းပါဝင်သည့် ပစ္စည်း များအား လက်ခံနိုင်သည့်စံအဆင့်များနှင့်နှိုင်းယှဉ်လျက် ECD ၏လမ်းညွှန်ချက်များနှင့်အညီ ဆန်းစစ်မှုများ ပြုလုပ်ပါမည်။ စီမံကိန်းအဆင့်ဆင့်အတွက် ဆန်းစစ်မှုများပါဝင်သကဲ့သို့ စောင့်ကြည့်ခြင်းအစီအစဉ် (monitoring program) လည်းပါဝင်ပါသည်။ ထို့အပြင် လေထုကိုညစ်ညမ်းစေသည့်အရာများ မည်ကဲ့သို့ ပျံ့နှံ့လာနိုင်သည်၊ ပင်လယ်တွင်အနည်အနှစ်မြေများ မည်ကဲ့သို့ရွေ့လျား နိုင်သည်စသည်ဖြင့် အနာဂတ်တွင် မည်ကဲ့သို့ ဖြစ်လာနိုင်သည်ကို သိပ္ပံနည်းကျကြိုတင်ခန့်မှန်းမှုများ (scientific modelling) ပြုလုပ်ခြင်းတို့လည်း ပါဝင်ပါ မည်။ လေ့လာမှုအတိုင်းအတာများနှင့် နည်းလမ်းများကို ဤအစီရင်ခံစာ၏ Terms of Reference အပိုင်းတွင် အသေးစိတ်ဖော်ပြထားပါသည်။

ဇီဝဆိုင်ရာပတ်ဝန်းကျင်အခြေအနေများ

ရမ်းဗြဲကျွန်း၏တောင်ကုန်းဒေသများတွင် အများအားဖြင့် အမြစ်မီးသစ်ပင်များပေါက်ရောက်နေကြသည်။ ခရင်းဝါးကို ဒေသအတွင်းထူထပ်ပေါများစွာ တွေ့ရှိရသည်။ တောင်ပေါ်တောအုပ်အချို့တွင် ဝါးများသည် အခြားအပင်များနှင့် ရောနှောပေါက်ရောက်နေကြသည်။ ကွင်းဆင်းလေ့လာချက်များအရ တောင်သရက်၊ သင်ကန်း၊ တောင်ပိန္နဲနှင့် ညောင်ပင်များကို တောင်ကုန်းများ၏ မတ်စောက်သောအပိုင်းများတွင်တွေ့ရှိရသည်။

ရမ်းဗြဲကျွန်းသည် “မြန်မာ့ကမ်းရိုးတန်းဒီရေရောက်သစ်တောများ” ဂေဟစနစ်နယ်ပယ်တွင်ကျရောက်နေ သည်။ စီမံကိန်းဧရိယာအတွင်း သဘာဝထိန်းသိမ်းရေးအတွက် ဘေးမဲ့တောများ၊ အဓိကဇီဝမျိုးစုံမျိုးကွဲများ (Key biodiversity areas) ကဲ့သို့ တရားဝင်ထိန်းသိမ်းစောင့်ရှောက်ရန် သတ်မှတ်ထားသည့် နေရာများမရှိပါ။ ကျွန်းပတ်ပတ်လည်ရှိ ဒီရေတောများသည် အနည်းနှင့်အများ ထူထပ်သိပ်သည်းနေပြီး ဝမ်ဗိုက်ကြိုးဝိုင်း ဒီရေတော၏ ဇီဝမျိုးစုံမျိုးကွဲများဆိုင်ရာ စရိုက်လက္ခဏာများနှင့် ဆင်တူပါသည်။ ဝမ်ဗိုက်ကြိုးဝိုင်း ဒီရေတော သည် မြန်မာနိုင်ငံတွင် ကျန်ရှိနေသည့် အကြီးဆုံး ဒီရေတောများထဲတွင် တစ်ခုအဖြစ် ပါဝင်သည်။

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ရမ်းဗြဲကျွန်းသည် ပင်လယ်ပြင်၏အငွေ့အသက်လွှမ်းမိုးမှုရှိသောနေရာဖြစ်၍ ကုန်းနေတိရစ္ဆာန်အရေအတွက် နည်းပါးသောကျွန်းဖြစ်သည်။ ကုန်းနေရေနေသတ္တဝါများနှင့် တွားသွားသတ္တဝါများသည် ၎င်းတို့ ပေါက်ဖွားရန် အတွက် ကျွန်းပေါ် တွင်နေရာအကန့်အသတ်ရှိသောကြောင့် ပေါများစွာမတွေ့ရှိရပါ။ နို့တိုက်သတ္တဝါများ (လင်းနို့) များကို လေ့လာမှု ဧရိယာတွင် များများစားစား မတွေ့ရှိရပါ။ လေ့လာမှုဧရိယာတွင် တွေ့ရသော ငှက်များကို မှတ်တမ်းတင်ထားပါသည်။ အောက်ချင်းငှက်၊ ခိုပြောက်၊ ကုလားမကြက်တူရွေးနှင့် ဗွတ်ကလုံကဲ့ သို့သောငှက်များသည် လေ့လာမှုဧရိယာအတွင်း အများအပြားနေထိုင်ကျက်စားနေသည်ကို တွေ့ရှိရသည်။ စီမံကိန်းဧရိယာတွင် ပုစဉ်းမျိုးစိတ်များနှင့် လိပ်ပြာမျိုးစိတ်များ အလွန်နည်းပါးပါသည်။

နိုင်ငံတကာသဘာဝထိန်းသိမ်းရေးသမဂ္ဂ (IUCN) ၏ ပျောက်ကွယ်လုနီးပါး၊ မျိုးသုဉ်းရန်ဘေးအန္တရာယ်ရှိသော မျိုးစိတ်စာရင်းဝင် ပင်လယ်နို့တိုက်သတ္တဝါသုံးမျိုးဖြစ်သည့် ဧရာဝတီလင်းပိုင်၊ အင်ဒို-ပစိဖိတ် ရေယက်မဲ့ လင်းရှူးနှင့် အင်ဒို-ပစိဖိတ် ကျောခုံးမောက်လင်းပိုင်တို့ကို စီမံကိန်းနေရာအနီးတစ်ဝိုက်တွင် တွေ့ရှိရသည်ဟု ဒေသခံများက ဆိုကြသည်။ သို့သော် ၎င်းတို့၏ ရွှေ့ပြောင်းသွားလာမှုများကြောင့် အဆိုပါမျိုးစိတ်များကို စီမံကိန်းဧရိယာ ပတ်ဝန်းကျင်အပါအဝင် ကမ်းနီးနှင့် ကမ်းလွန်ပင်လယ်ပြင်တစ်လျှောက် တွေ့ရှိနိုင်ခြေ ရှိသည်။

စီမံကိန်းနေရာအနီးတစ်ဝိုက် ကွင်းဆင်းစစ်တမ်းကောက်ယူချက်အရ ရေအောက်ကြမ်းပြင်နှင့် ရွှံ့နွံပိုင်းတွင် နေထိုင် ကျက်စားသောအပင်နှင့် တိရစ္ဆာန်မျိုးစိတ် ၁၀ မျိုး၊ ကမာအုပ်စုဝင် မျိုးစိတ် ၁၃ မျိုးကို တွေ့ရှိရသည်။ စီမံကိန်းဧရိယာရှိ အခြားသောကုန်းမြေများတွင် ရွှံ့နွံထူထပ်သည့်ပင်လယ်ကမ်းခြေနှင့် ကျောက်ဆောင်များကို တွေ့ရှိရသည်။ အဆိုပါ နေရာများသည် ငါးဖမ်းလုပ်ငန်းလုပ်ကိုင်သော ဒေသခံများအတွက် စီးပွားရေးအရ အလွန်အရေးပါသည့် ရွှံ့ကဏန်းနှင့် ပုစွန်ကဲ့သို့သော ကျောရိုးမဲ့သတ္တဝါမျိုးစိတ်များ ကျင်လည်ကျက်စားရာ ပတ်ဝန်းကျင်ဖြစ်ပါသည်။

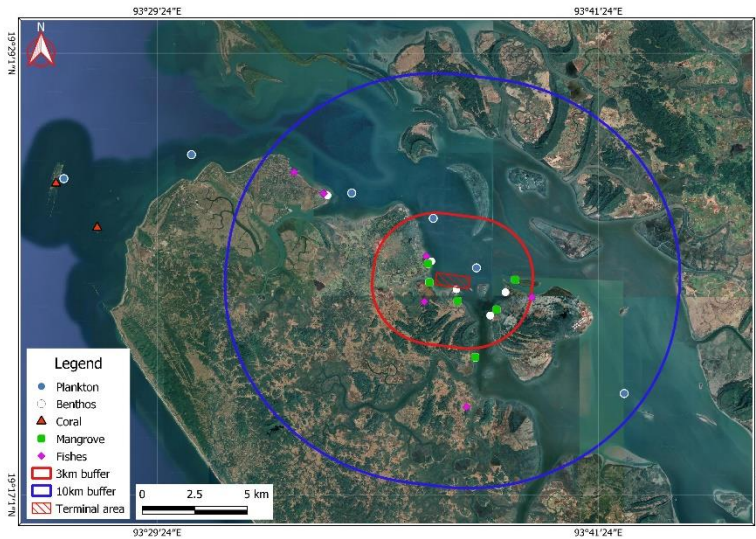
စစ်တမ်းကောက်ယူတွေ့ရှိချက်အရ ရခိုင်ကမ်းရိုးတန်းဒေသတွင် ရေမျောအပင်မျိုးစိတ် (phytoplankton) ၉၇ မျိုးနှင့် ရေမျောသတ္တဝါမျိုးစိတ် (zooplankton) ၁၈၆ မျိုးတို့ကို တွေ့ရှိရသည်။ ကျောက်ဖြူနှင့် ရခိုင် ကမ်းရိုးတန်းတစ်လျှောက် တို့တွင် လေ့လာတွေ့ရှိချက်အရ အရိုးရှိ ငါးမျိုးစိတ် ၁၀၄ မျိုး၊ ငါးမန်းမျိုးစိတ် ၂ မျိုး နှင့် ငါးလိပ် ကျောက်မျိုးစိတ် ၇ မျိုး ရှိကြောင်း သိရသည်။

ဇီဝဆိုင်ရာပတ်ဝန်းကျင် (Biological Environment) အတွက် လေ့လာမှုနယ်ပယ်အကျယ်အဝန်း သတ်မှတ်ခြင်း

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းနှင့်ပတ်သက်သည့် ဇီဝဆိုင်ရာလေ့လာမှုကို စီမံကိန်းအနီးပတ်ဝန်းကျင်နှင့် ဒေသတွင်းအဏ္ဏဝါဇီဝမျိုးစုံမျိုးကွဲများ ပျံ့နှံ့ကျက်စားမှုအချက်များအပေါ်အခြေခံ၍ နယ်ပယ်အတိုင်းအတာ သတ်မှတ်ရာတွင် တိုက်ရိုက်သက်ရောက်မှုဇုန်အဖြစ် အချင်းဝက် ၃ ကီလိုမီတာ အဝန်းအဝိုင်းတွင် လည်းကောင်း၊ တစ်ဆင့်ခံသက်ရောက်မှု ဇုန်အဖြစ် အချင်းဝက် ၁၀ ကီလိုမီတာ အဝန်းအဝိုင်းတွင် လည်းကောင်း ဇီဝနှင့်အဏ္ဏဝါသိပ္ပံပညာရှင်များက ရေးဆွဲသတ်မှတ်ကြပါသည်။ ဇီဝဆိုင်ရာပတ်ဝန်းကျင် အတွက် လေ့လာမှု နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း၏ သိပ္ပံနည်းကျသော အကြောင်းအချက်မှာ အပင်မျောလှေ (phytoplankton) များနှင့် အကောင်မျောလှေ (zooplankton) များသည် စီမံကိန်း လုပ်ငန်းများကြောင့် ဖြစ်ပေါ်လာ နိုင်သည့် ပင်လယ်တွင်းအနည်ထိုင်ခြင်း (ရေနောက်ကျိုခြင်း) ၏ သက်ရောက် မှုကို ခံရဖွယ်ရာရှိခြင်းကြောင့် ဖြစ်သည်။

EXECUTIVE SUMMARY

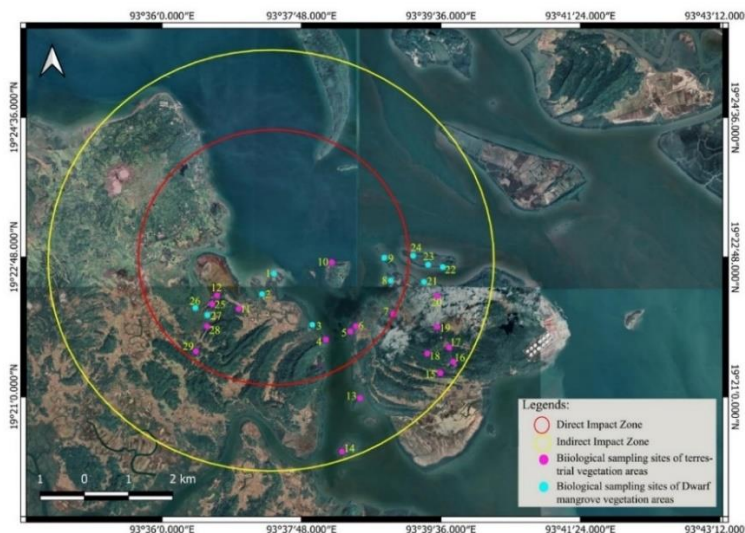
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)



ပုံ-၇။ အတ္ထဝါသိပွဲနှင့်ဇီဝမျိုးစုံမျိုးကွဲဆိုင်ရာ လေ့လာမှုနယ်ပယ်အကျယ်အဝန်းသတ်မှတ်ချက်

ကုန်းနေဇီဝမျိုးစုံမျိုးကွဲများစစ်တမ်းကောက်ယူခြင်းနယ်ပယ်ကို သတ်မှတ်ဧရိယာအတွင်း တိုက်ရိုက်အကျိုး သက်ရောက် သော ၃ ကီလိုမီတာအချင်းဝက်ဇုန်နှင့် တစ်ဆင့်ခံအကျိုးသက်ရောက်သော ၈ ကီလိုမီတာ အချင်းဝက်ဇုန်အဖြစ် ခွဲခြားသတ်မှတ်ပါသည်။ စီမံကိန်းလုပ်ဆောင်မှုများသည် ကုန်းနှင့်ရေနှစ်ပိုင်းစလုံးတွင် သက်ရောက်နိုင်ခြေရှိသောကြောင့် အချက်အလက်များနှင့်နမူနာများကောက်ယူစုဆောင်းခြင်းကို ဤနယ်ပယ် နှစ်ခုစလုံးအတွင်း သိပ္ပံနည်းကျဆောင်ရွက် သွားမည်ဖြစ်ပါသည်။

ထို့အပြင် စစ်တမ်းကောက်ယူမှုအား စီမံကိန်းကိုဗဟိုပြုလျက် သံဇော်မြစ်တစ်လျှောက် ၂၇ ကီလိုမီတာခန့်အထိ သတ်မှတ် သည့်အပြင် အထူးသဖြင့် ရေနေနို့တိုက်သတ္တဝါများ၊ ပင်လယ်လိပ်နှင့် ကမ်းရိုးတန်းငှက်များဆိုင်ရာ စစ်တမ်းကောက်ယူခြင်းဧရိယာအား ထပ်မံတိုးချဲ့သတ်မှတ်ကောက်ယူသွားမည်ဖြစ်ပါသည်။ စစ်တမ်း ကောက်ယူမှုသည် သတ်မှတ်ဧရိယာ အတွင်းပျံ့နှံ့ကျက်စားသည့် မတူညီသောသက်ရှိသတ္တဝါများ နေထိုင်ရာ နေရာအားလုံးအတွက် အကျိုးဝင်မည်ဖြစ်ပါသည်။

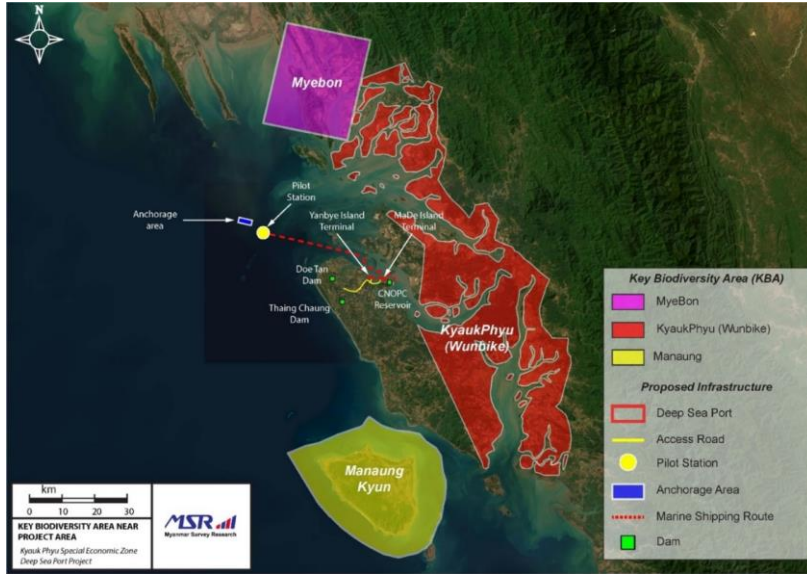


ပုံ-၈။ ကုန်းနေဇီဝမျိုးစုံမျိုးကွဲလေ့လာမှု နယ်ပယ်အတိုင်းအတာအကျယ်အဝန်း သတ်မှတ်ချက်ပြပုံ

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာလေ့လာမှုများကို အောက်ပါမြေပုံတွင်ဖော်ပြထားသည့်အတိုင်း စီမံကိန်းဧရိယာ၏ အနီးပတ်ဝန်းကျင်နေရာများတွင်လည်း ပြုလုပ်သွားပါမည်။ ထိုအနီးအနားနေရာများသာမက အဓိကဇီဝမျိုးစုံမျိုးကွဲများ ရှိနေသည့် ဝမ်ဗိုက်ဒီရေတော၊ မာန်အောင်နှင့်မြေပုံမြို့များကိုလည်း ထည့်သွင်းလေ့လာပါမည်။



ပုံ-၉။ စီမံကိန်းဧရိယာအနီးရှိ အဓိက ဇီဝမျိုးစုံမျိုးကွဲများရှိရာ လေ့လာမည့်နယ်မြေများ

ဇီဝဆိုင်ရာပတ်ဝန်းကျင်အတွက်လေ့လာမှုနယ်ပယ်

ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာလေ့လာမှုနယ်ပယ်တွင် သိပ္ပံနည်းကျအခြေခံအချက်အလက်များကောက်ယူခြင်းဖြင့် စီမံကိန်းနေရာနှင့်၎င်း၏ပတ်ဝန်းကျင်တွင်ရှိသည့် ကုန်းနေသတ္တဝါများ၊ ငှက်များ၊ ပင်လယ်အတွင်းရှိ သတ္တဝါများနှင့်အပင်များ အစရှိသည့် ဇီဝအရင်းအမြစ်များအားလုံးကို လေ့လာမည်ဖြစ်သည်။ အခြေခံစစ်တမ်းနှင့်အချက်အလက်များကောက်ယူရာတွင် ရာသီအလိုက်အပြောင်းအလဲများကိုသိရှိနိုင်ရန်အတွက် မုတ်သုံရာသီအကြို၊ မုတ်သုံရာသီနှင့် မုတ်သုံရာသီအပြီးကာလသုံးခုလုံးတွင် ဆောင်ရွက်ပါမည်။ ကောက်ယူထားသည့် အချက်အလက်များအား နိုင်ငံတကာသဘာဝထိန်းသိမ်းရေးသမဂ္ဂ (IUCN) ၏သတ်မှတ်ချက်များ၊ နိုင်ငံတော်၏ ဇီဝမျိုးစုံမျိုးကွဲများဆိုင်ရာလမ်းညွှန်ချက်များနှင့်အညီ နှိုင်းယှဉ်ဆန်းစစ်ပါမည်။ ဆန်းစစ်သုံးသပ်မှုများ ပြုလုပ်ပါမည်။ လေ့လာမှုအတိုင်းအတာသတ်မှတ်ခြင်းနှင့် နည်းလမ်းများကို ဤအစီရင်ခံစာ၏ Terms of Reference အပိုင်းတွင် အသေးစိတ်ဖော်ပြထားပါသည်။

လူမှုစီးပွားဆိုင်ရာ ပတ်ဝန်းကျင်အခြေအနေများ

ကျောက်ဖြူမြို့နယ်

စီမံကိန်းအကောင်အထည်ဖော်မည့်ဒေသဖြစ်သော ကျောက်ဖြူမြို့နယ်သည် ရခိုင်ပြည်နယ်အတွင်းတည်ရှိပြီး ရန်ကုန်မြို့ မှ ကုန်းလမ်းဖြင့် ၃၉၄ မိုင် (၆၃၄ ကီလိုမီတာ)၊ လေကြောင်းခရီးဖြင့် ၁ နာရီ၊ ၁၅ မိနစ်ခန့်ကြာမြင့်သော အကွာအဝေးတွင်ရှိပါသည်။ ကျောက်ဖြူမြို့နယ်အား အရှေ့ဘက်တွင် အမ်းမြို့နယ်၊ အနောက်ဘက်တွင် ဘင်္ဂလား ပင်လယ်အော်၊ တောင်ဘက်တွင် ရမ်းဗြဲမြို့နယ်နှင့် မြောက်ဘက်တွင် မြေပုံမြို့နယ်တို့ဖြင့် ဝန်းရံထားပါသည်။ ကျောက်ဖြူမြို့နယ်သည် ဧရိယာအားဖြင့် ၆၇၈.၃၅ စတုရန်းမိုင် ကျယ်ဝန်းပြီး အရှေ့ဘက်အစွန်းမှ အနောက်ဘက် အစွန်းသို့ ၅၄ မိုင်၊ တောင်ဘက်အစွန်းမှ မြောက်ဘက်အစွန်းသို့ မိုင် ၉၀ ကွာဝေးပါသည်။

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

ကျောက်ဖြူမြို့နယ်သည် ရခိုင်ပြည်နယ်တွင် ဒုတိယအကြီးဆုံးမြို့နယ်ဖြစ်ပြီး မြို့ ၂ မြို့ ရပ်ကွက်ပေါင်း ၂၂ ရပ်ကွက်၊ ကျေးရွာပေါင်း ၂၄၉ ရွာတို့ဖြင့် ဖွဲ့စည်းထားပါသည်။ မြို့နေလူအများစုမှာ ရခိုင်တိုင်းရင်းသားများ ဖြစ်ကြပြီး မရာမာကြီး၊ ချင်း၊ ကရင်နှင့် ဗမာ အစရှိသည့် အခြားသောတိုင်းရင်းသားများပါ စုပေါင်းနေထိုင် လျက် ရှိပါသည်။ စုစုပေါင်းလူဦးရေမှာ ၁၇၃,၂၇၅ ဦးဖြစ်ပြီး အများစုသည် ဗုဒ္ဓဘာသာကို ကိုးကွယ်ကြသည်။ ခရစ်ယာန်ဘာသာ၊ ဟိန္ဒူဘာသာနှင့် အစ္စလာမ် ဘာသာကိုးကွယ်သူအနည်းငယ်သာ ရှိကြသည်။

မြို့နယ်၏ အဓိကစီးပွားရေးလုပ်ငန်းများအတွက် သဘာဝအရင်းအမြစ်ကို မှီခိုကြရသည်။ ဒေသစီးပွားရေး ဖွံ့ဖြိုးလာစေ မည့် အခွင့်အလမ်းများလည်း ကြွယ်ဝသည်။ သာဓကအားဖြင့် ကမ်းနီး၊ ကမ်းဝေးရေနံနှင့် သဘာဝ ဓာတ်ငွေ့တူးဖော်ခြင်း၊ ရေနက်ဆိပ်ကမ်းနှင့် အထူးစီးပွားရေးဇုန်များတည်ဆောက်ခြင်း၊ ရိုးရာအရသော် လည်းကောင်း၊ စီးပွားဖြစ်သော်လည်းကောင်း ငါးဖမ်းလုပ်ငန်း၊ ဆန်စပါးနှင့်အခြားသီးနှံများစိုက်ပျိုးခြင်း လုပ်ငန်းများအပြင် သဘာဝအခြေခံခရီးသွားလုပ်ငန်းတို့ ဖြစ်ကြသည်။

ကျောက်ဖြူမြို့နယ်ဆိုင်ရာအချက်အလက်များအနက်မှ အရေးကြီးသောအချက်အလက်အချို့ကို အောက်ပါ ဇယားများ တွင် ဖော်ပြထားပါသည်။

ဇယား ၂။ လူဦးရေစာရင်း (ကျောက်ဖြူမြို့နယ်)

လူဦးရေ	အိမ်ထောင်စု	အိမ်ခြေ	ရပ်ကွက်	ကျေးရွာအုပ်စု	ကျေးရွာ	လူမျိုးစု	ကိုးကွယ်သည့် ဘာသာ
၁၇၃,၂၇၅	၃၉,၅၁၄	၃၆,၉၂၈	၂၂	၅၂	၂၄၉	ရခိုင် (၉၅.၆၁%) ချင်း (၀.၅%) ဗမာ (၀.၁၆%) အခြား (၃.၇၃%)	ဗုဒ္ဓဘာသာ (၉၅.၁၅%) ခရစ်ယာန် (၀.၅၁%) ဟိန္ဒူ (၀.၁၉%) အစ္စလာမ် (၄.၁၅%)

ဇယား ၃။ မြေအသုံးချမှု (ကျောက်ဖြူမြို့နယ်)

စဉ်	အကြောင်းအရာ	အကျယ်အဝန်း (ဧက)	ရာခိုင်နှုန်း(%)
၁	အသားတင်စိုက်ပျိုးမြေဧရိယာပေါင်း	၅၂,၆၉၂	၁၂.၁၄
	(က) လယ်ယာမြေဧရိယာ	၄၆,၀၉၀	
	(ခ) ယာမြေ	-	
	(ဂ) ကိုင်း/ကျွန်းမြေ	၁၂၈	
	(ဃ) ဥယျာဉ်မြေ	၅,၃၄၈	
	(င) ဓနိစိုက်မြေ	၁,၁၂၆	
၂	ချန်လှပ်ထားမြေဧရိယာပေါင်း	၉,၈၉၈	၂.၂၈
	(က) လယ်ယာမြေဧရိယာ	၉,၈၉၈	
၃	စားကျက်မြေ	၂၀၄	၀.၀၅
၄	စက်မှုလုပ်ငန်းသုံးမြေ	၈၄၉	၀.၂၀
၅	မြို့မြေ	၃၈၄	၀.၀၉
၆	ရွာမြေ	၁,၃၉၀	၀.၃၂
၇	ကြိုးဝိုင်း/ ကြိုးပြင်ကာကွယ်တောဧရိယာ	၁၆,၈၇၆	၃.၈၉
၈	တောရိုင်းမြေ	၂၀၁,၇၇၁	၄၆.၄၈
၉	မြေရိုင်း	၅၂,၁၅၄	၁၂.၀၁
၁၀	စိုက်ပျိုးခြင်းမပြုနိုင်သောဧရိယာ	၂၆,၉၃၇	၆.၂၀
၁၁	အခြားမြေများ	၇၀,၉၈၉	၁၆.၃၅
စုစုပေါင်း ►		၄၃၄,၁၄၄	၁၀၀.၀၀

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

အခြားမြေ၊ လမ်းများ၊ ကျေးရွာများအတွင်း ဘုံပိုင်မြေများ၊ ကမ်းခြေများ

ဇယား ၄။ အဓိကထွက်ကုန်များနှင့် လူမှုစီးပွားဆိုင်ရာမှတ်တမ်းများ (ကျောက်ဖြူမြို့နယ်)

စဉ်	အကြောင်းအရာ	အရေအတွက်	စဉ်	အကြောင်းအရာ	အရေအတွက်
၁	စိုက်ပျိုးရေးလုပ်ကိုင်သူ	၃၉,၂၄၀	၁၀	စက်ရုံများ	၁၀
၂	မွေးမြူရေးလုပ်ကိုင်သူ	၂,၁၅၄	၁၁	ကုမ္ပဏီ	၃၇
၃	အရောင်းအဝယ်လုပ်ကိုင်သူ	၄,၂၃၉	၁၂	ဟိုတယ်	၈
၄	ရေလုပ်ငန်းလုပ်ကိုင်သူ	၉,၄၉၅	၁၃	မိုတယ်	၂
၅	အစိုးရဝန်ထမ်း	၃,၈၆၂	၁၄	တည်းခိုခန်း	၁၈
၆	စတိုးဆိုင်၊ စားသောက်ဆိုင်နှင့် အခြားဆိုင်များ	၄၇၆	၁၅	ဘဏ်	၉
၇	ဝန်ဆောင်မှုလုပ်ငန်းလုပ်ကိုင်သူ	၁၅,၁၆၁	၁၆	ခါတ်ဆီ/ဒီဇယ်အရောင်းဆိုင်	၇
၈	အိမ်တွင်းစက်မှုအသေးစားလုပ်ငန်းလုပ်ကိုင်သူ	၂,၄၀၄	၁၇	ဈေး	၅
၉	ကျပန်း	၁၅,၁၇၄	၁၈	ကုန်တိုက်ငယ်	၂

ရမ်းဗြဲကျွန်း

ရေနက်ဆိပ်ကမ်းစီမံကိန်းတွင်ပါဝင်သည့် လုပ်ငန်းသုံးခုသည် မြန်မာနိုင်ငံအနှောက်ပိုင်း၊ ရခိုင်ပြည်နယ်၊ ကျောက်ဖြူမြို့နယ်အတွင်း တည်ရှိပါသည်။

ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းကို ကျောက်ဖြူမြို့မှ အရှေ့တောင်ဘက် ၁၀ မိုင်အကွာတွင်တည်ရှိသော ရမ်းဗြဲကျွန်းမြောက်ပိုင်း၊ သံဇော်မြစ်ကမ်းပါးပေါ်တွင် အကောင်အထည်ဖော်တည်ဆောက်မည်ဖြစ်သည်။ ရေနက်ဆိပ်ကမ်းစီမံကိန်းနှင့် အနီးဆုံးသော ရမ်းဗြဲကျွန်းပေါ်ရှိ ကျေးရွာ ၄ ရွာမှာ ကြံချိုကျေးရွာ၊ သစ်ပုတ်တောင်ကျေးရွာ၊ စေမော်ကျေးရွာနှင့် စစ်တောကျေးရွာတို့ဖြစ်ကြသည်။ ထိုကျေးရွာ ၄ ရွာတွင် အိမ်ထောင်စု ၆၁၃ စုရှိပြီး လူဦးရေ ၂,၈၉၉ ဦးနေထိုင်လျက် အားလုံးမှာ ရခိုင်တိုင်းရင်းသားများဖြစ်ကြသည်။

လက်ရှိအသက်မွေးဝမ်းကျောင်းလုပ်ငန်းများနှင့်အခြေခံအဆောက်အအုံများ

အဓိကလုပ်ငန်းများ	အဓိကစီးပွားရေးလုပ်ငန်းမှာ ငါးဖမ်းခြင်းဖြစ်ပြီး အိမ်ထောင်စုအားလုံး၏ ၇၅% ခန့်သည် ငါးဖမ်းလုပ်ငန်းကို လုပ်ကိုင်ကြသည်။ ကျွန်းတွင် ငါးဖမ်းလှေ ၂၅၀ စီးရှိပြီး ရွာသားများသည် သံဇော်မြစ်ကိုမှီခိုကာ ငါးဖမ်း လုပ်ငန်းဖြင့် အသက်မွေးဝမ်း ကျောင်းပြုနေထိုင်ကြသည်။
စိုက်ပျိုးရေး	အိမ်ထောင်စုအချို့က စပါးစိုက်ပျိုးကြပြီး အနည်းငယ်သာ လယ်မြေပိုင်ဆိုင် ကြသည်။ စေမော်ကျေးရွာ နှင့် စစ်တောကျေးရွာတို့တွင် အများစုမှာ စပါးစိုက်ပျိုး ကြသည်။
မွေးမြူရေး	အိမ်ထောင်စုအားလုံးနီးပါးသည် ကြက်နှင့်ဘဲများကို တစ်ပိုင်တစ်နိုင်မွေးမြူ ကြသည်။ အချို့မှာ ကျွဲ၊ နွား မွေးမြူကြသည်။ အချို့အိမ်ထောင်စုများသည် ဝက်အကောင်ရေ ၃ ကောင်မှ ၅ ကောင်အထိ မွေးမြူကြသည်။ စီးပွားဖြစ်တိရစ္ဆာန် မွေးမြူရေးလုပ်ငန်း လုပ်ကိုင်သူများမရှိပါ။
လျှပ်စစ်ဓာတ်အား	ရွာ ၄ ရွာအနက် ကြံချိုကျေးရွာနှင့် စေမော်ကျေးရွာများတွင် လျှပ်စစ်မီး မရရှိသေးပါ။ ရွာသူရွာသားအချို့မှာ နေရောင်ခြည်စွမ်းအင်၊ ဘက်ထရီ LED မီး

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

	သို့မဟုတ် မီးထွန်းရန်အတွက် ဖယောင်းတိုင်များကို အသုံးပြုကြသည်။ ဘုန်းကြီး ကျောင်းများတွင် ကိုယ်ပိုင်မီးစက်များရှိသည်။
သောက်သုံးရေ	ကျေးရွာများသည် ရေကန်များ၊ ရေတွင်းများမှ သောက်သုံးရေရရှိကြသည်။
ဆက်သွယ်ရေး	အိမ်ထောင်စုအားလုံးနီးပါး မိုဘိုင်း(လ်)ဖုန်းများရှိသော်လည်း ကျေးရွာများ ၏နေရာတိုင်းတွင် ဖုန်းလိုင်းဆက်သွယ်မှုမကောင်းပါ။
အမှိုက်စွန့်ပစ်ခြင်း	အမှိုက်များကို အိမ်ခြံဝင်းအတွင်းမြှုပ်နှံခြင်း သို့မဟုတ် မီးရှို့ခြင်းပြုလုပ်ကြ ပြီး အမှိုက်စွန့်ပစ်ရန်အတွက် အထူးသတ်မှတ်ထားသော နေရာမရှိပါ။ အချို့ အိမ်ထောင်စုများက အမှိုက်များကို မြစ်ထဲသို့ စွန့်ပစ်ကြသည်။
လမ်းများ	ကျေးရွာများရှိလမ်းများသည် မြေသားလမ်းများဖြစ်ပြီး ခြောက်သွေ့ရာသီတွင် ဆိုင်ကယ်များသာသွားလာနိုင်ပြီး မိုးရာသီတွင် ခြေလျင်ဖြင့်သာ သွား လာကြသည်။
အညစ်အကြေးစွန့်ခြင်း	အိမ်ထောင်စုအချို့တွင် ရေလောင်းအိမ်သာများရှိကြပြီး အများစုသည် တွင်း အိမ်သာများကိုအသုံးပြုကြသည်။ ချုံတောထဲတွင်မစင်စွန့်သည့် အလေ့ အထလည်း ရှိနေသေးသည်။
ရေလမ်းပို့ဆောင်ရေး	သစ်ပုတ်တောင်ကျေးရွာနှင့် စစ်တောကျေးရွာတို့သည် ရေတပ်ဝင်းအတွင်းတည်ရှိ ပြီး ထိုရေတပ်ဝင်းအဝင်ဝမှ ၎င်းရွာများအထိ ကတ္တရာခင်းလမ်းရှိသည်။ သစ်ပုတ် တောင်ကျေးရွာအနီးရှိ မြစ်မှနေ၍ ကျောက်ဖြူမြို့သို့ ကူးတို့လှေ များဖြင့်သွားနိုင် သော်လည်း ထိုမြစ်တွင် ဆိပ်ခံတံတားမရှိပါ။ ကြံချိုကျေးရွာနှင့် စေမော်ကျေးရွာ ကြားရှိလမ်းသည် မြေသားလမ်းများဖြစ်ပြီး ခြောက်သွေ့ရာသီ တွင် ကားနှင့် ဆိုင်ကယ်များသာသွားလာနိုင်ကာ ပို့ဆောင်ရေးခက်ခဲပါသည်။
ပညာရေး	စစ်တောကျေးရွာတွင် အထက်တန်း ကျောင်းတစ်ကျောင်း ရှိပြီး၊ ကြံချို ကျေးရွာနှင့် သစ်ပုတ်တောင်ကျေးရွာတို့ တွင် အလယ်တန်းကျောင်း တစ်ကျောင်း စီရှိသည်။ စေမော်ကျေးရွာတွင် မူလတန်း(လွန်) ကျောင်း တစ်ကျောင်းရှိသည်။ ထိုကျေးရွာ ၄ ရွာတွင် အထက်တန်း ကျောင်းသား/ သူဦးရေ ၁၅၉ ဦး၊ အလယ်တန်းကျောင်းသား/သူ ၂၅၈ ဦးနှင့် မူလတန်းအဆင့် ကျောင်းသား/ သူ ၅၄၁ ဦး ရှိသည်။
ကျန်းမာရေး စောင့်ရှောက်မှု	ထိုကျေးရွာ ၄ ရွာတွင် အစိုးရဆေးရုံ သို့မဟုတ် ပုဂ္ဂလိကဆေးခန်းမရှိပါ။ သစ်ပုတ် တောင်ကျေးရွာနှင့် စစ်တောကျေးရွာတို့မှ ရွာသူရွာသားများသည် ရေတပ်ဝင်း အတွင်းရှိ ဆေးခန်းသို့သွားကြပြီး ကြံချိုကျေးရွာနှင့် စေမော် ကျေးရွာတို့မှ အရေးကြီးလူနာများကို ကျောက်ဖြူဆေးရုံသို့ ပို့ဆောင်ကြ ရသည်။ ကျေးရွာတစ်ရွာ စီတွင် သားဖွားဆရာမ ၁ ဦး ရှိပါသည်။ ဝမ်းပျက် ဝမ်းလျှော့၊ အဆုတ်ရောဂါ၊ အသည်းရောင်အသားဝါ၊ သွေးတိုး၊ နှလုံးရောဂါ များ အဖြစ်များကြပြီး ကလေးများ တွင် သွေးအားနည်းခြင်းများ တွေ့ရှိရသည်။
ဘာသာရေး	ကျေးရွာတိုင်းတွင် ဗုဒ္ဓဘာသာ ဘုန်းတော်ကြီး ကျောင်းတစ်ကျောင်းစီ ရှိသည်။ ဘုန်းတော်ကြီးကျောင်းအချို့တွင် ရှေးဟောင်းပန်းချီကားများ၊ ဆင်းတုတော်များ၊ ရှေးဟောင်းစေတီများရှိကြသည်။ ရွာများတွင် ရာသီအလိုက် ဘာသာရေးပွဲတော် များကျင်းပကြသည်။ (ဥပမာ - ဝါဆိုသင်္ဃန်းကပ်ခြင်း၊ မီးထွန်းပွဲတော်ကျင်းပခြင်း) နွေရာသီတွင် ရှင်ပြုပွဲများကျင်းပလေ့ရှိသည်။

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

လူမှုပတ်ဝန်းကျင် (Social Environment) အတွက် လေ့လာမှုနယ်ပယ်အကျယ်အဝန်းသတ်မှတ်ခြင်း

အတွင်းဇုန် သို့မဟုတ် တိုက်ရိုက်ထိခိုက်ခံရမည့်ဧရိယာများ

လူမှုပတ်ဝန်းကျင်အတွက် တိုက်ရိုက်ထိခိုက်ခံရနိုင်သည့်ဧရိယာများနှင့် တစ်ဆင့်ခံထိခိုက်ခံရနိုင်သည့် ဧရိယာများ သို့မဟုတ် လွှမ်းမိုးမှုခံရနိုင်သောဧရိယာများဟူ၍ လေ့လာမှုနယ်ပယ်သတ်မှတ်ပါသည်။ တိုက်ရိုက်ထိခိုက်မှုခံရနိုင်သည့် ဧရိယာများမှာ မဒေးကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်းဆောက်လုပ်မှုကြောင့် မဒေးကျွန်းပေါ်ရှိ ရွာ ၅ ရွာ၊ ရမ်းဗြဲကျွန်း ရေနက်ဆိပ်ကမ်းစီမံကိန်းဆောက်လုပ်မှုကြောင့် ရမ်းဗြဲကျွန်း ပေါ်ရှိ ရွာ ၄ ရွာနှင့် ၁၅ ကီလိုမီတာအရှည် လမ်းနှင့်တံတား စီမံကိန်းဆောက်လုပ်မှုကြောင့် လမ်းတစ်လျှောက်တွင်ရှိသော ကျေးရွာပေါင်း ၆ ရွာ၊ စုစုပေါင်း ၁၅ ရွာဖြစ်ပါသည်။ ထိုရွာ ၁၅ ရွာကို အတွင်းဇုန် သို့မဟုတ် တိုက်ရိုက်ထိခိုက်မှုခံရမည့် သို့မဟုတ် တိုက်ရိုက်လွှမ်းမိုးမှုခံရသည့်ဧရိယာများဟု သတ်မှတ်သည်။

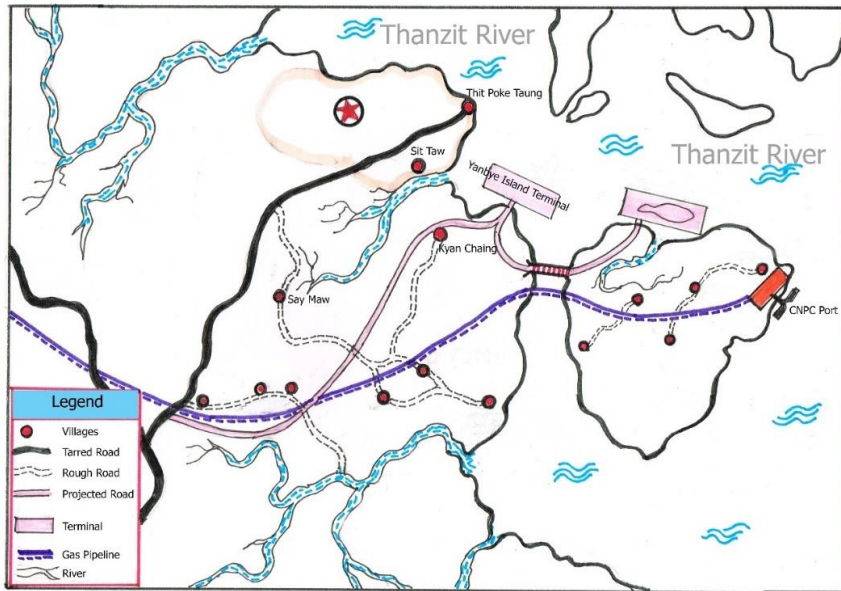
စီမံကိန်းအစိတ်အပိုင်း	တိုက်ရိုက်ထိခိုက်ခံရမည့်ရွာများ	ထိခိုက်ဆုံးရှုံးမှု
မဒေးကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်း	ကျွန်းပေါ်ရှိရွာ ၅ ရွာ	လယ်ယာမြေများ၊ ငါးဖမ်းကွက်များ ဆုံးရှုံးခြင်း
ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းစီမံကိန်း	ကျွန်းပေါ်ရှိရွာ ၄ ရွာ	လယ်ယာမြေများ၊ ငါးဖမ်းကွက်များ ဆုံးရှုံးခြင်း
၁၅ ကီလိုမီတာလမ်းနှင့်တံတားစီမံကိန်း	လမ်းတစ်လျှောက်ရွာ ၆ ရွာ	လယ်ယာမြေများဆုံးရှုံးခြင်း



ပုံ-၁၀။ ကျောက်ဖြူရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် လူမှုပတ်ဝန်းကျင်လေ့လာမှုပြုလုပ်ရန် တိုက်ရိုက်ထိခိုက်မှုခံရမည့် အတွင်းဇုန် ကျေးရွာများတည်နေရာပြပုံ

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

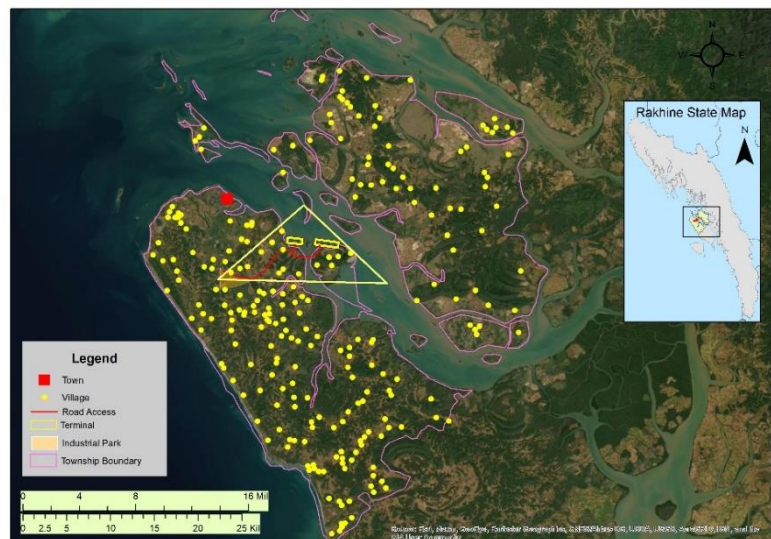


ပုံ-၁၁။ လူမှုစီးပွားဆိုင်ရာ (ကျန်းမာရေးနှင့်ယဉ်ကျေးမှုအပါအဝင်) ဆန်းစစ်ခြင်း ပြုလုပ်မည့် ရမ်းဗြဲကျွန်းပေါ်ရှိ ကျေးရွာ ၄ ရွာ တည်နေရာပြပုံ

ပြင်ပဇန် (ကျောက်ဖြူမြို့နယ်) (တစ်ဆင့်ခံထိခိုက်ခံရမည့်ဧရိယာများ)

အတွင်းဇန်ဟုသတ်မှတ်သည့် တိုက်ရိုက်ထိခိုက်ခံရမည့်ကျေးရွာ ၁၅ ရွာမှလွဲ၍ ကျောက်ဖြူမြို့နယ်အတွင်း အခြားသော ဧရိယာများအားလုံးကို ပြင်ပဇန် သို့မဟုတ် တစ်ဆင့်ခံထိခိုက်ခံရမည့်ဧရိယာများဟု သတ်မှတ် သည်။ ကျောက်ဖြူမြို့နယ်အတွင်း ရေထွက်နှင့်စိုက်ပျိုးရေးထွက်ကုန်ပစ္စည်းရောင်းဝယ်သူများ၊ သယ်ယူ ပို့ဆောင်သူများကဲ့သို့သော အကျိုးသက်ဆိုင်သူများကိုလည်း လူမှုစီးပွားလေ့လာမှုတွင် ထည့်သွင်းပါမည်။

ထို့အတွက် ရပ်ကွက်ပေါင်း ၂၂ ရပ်ကွက်၊ ကျေးရွာပေါင်း ၂၄၉ ရွာ၊ အိမ်ထောင်စုပေါင်း ၃၉,၅၁၄ စု၊ လူဦးရေ ပေါင်း ၁၇၃,၂၇၅ ရှိသည့် ကျောက်ဖြူတစ်မြို့နယ်လုံးအား လူမှုစီးပွားဆိုင်ရာလေ့လာမှုနယ်ပယ်အဖြစ် ကန့်သတ်သတ်မှတ်ပါသည်။



ပုံ-၁၂။ စီမံကိန်းဧရိယာ၏ အတွင်းဇန်နှင့် ပြင်ပဇန်ရှိ ကျေးရွာများ၏ တည်နေရာပြပုံ

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

လူမှုစီးပွားဆိုင်ရာလေ့လာမှုနယ်ပယ်

လူမှုစီးပွားပတ်ဝန်းကျင်လေ့လာမှုတွင် လူမှုစီးပွား၊ ကျန်းမာရေးစောင့်ရှောက်မှု၊ ယဉ်ကျေးမှုအမွေအနှစ်များ၊ လူ့အခွင့်အရေးများနှင့် ငါးဖမ်းခြင်းအသက်မွေးဝမ်းကျောင်းလုပ်ငန်းဟူ၍ လေ့လာမှုနယ်ပယ် ၅ ခု သတ်မှတ်ပါသည်။ ထိုကဲ့သို့သတ်မှတ်ခြင်းဖြင့် လူမှုစီးပွားထိခိုက်မှုဆန်းစစ်ခြင်းအား အသွင်အပြင်အမျိုးမျိုးမှ ရှုမြင်နိုင်မည်ဖြစ်ပါသည်။ ဤလေ့လာမှုများတွင် အိမ်ထောင်စုများအား စစ်တမ်းကောက်ယူခြင်း၊ အဓိက ဖြေဆိုနိုင်သူများအားတွေ့ဆုံမေးမြန်းခြင်း၊ အုပ်စုလိုက်ဆွေးနွေးပွဲများ ကျင်းပခြင်းနည်းလမ်းတို့ဖြင့် အချက်အလက်များကောက်ယူပါမည်။ အလုပ်ရုံဆွေးနွေးပွဲများနှင့် အများပြည်သူနှင့်ဆွေးနွေးပွဲများကို ပြုလုပ်ခြင်းဖြင့် အကျိုးသက်ဆိုင်သူများအားလုံး၏ သဘောထားအမြင်၊ အကြံဉာဏ်များကို ရရှိမည်ဖြစ်ပါသည်။

လူ့အခွင့်အရေးဆိုင်ရာလေ့လာမှု၏ ရည်ရွယ်ချက်မှာ အသွင်အပြင်တစ်မျိုးဖြင့် ဆန်းစစ်မှုပြုလုပ်ရန်ဖြစ်ပြီး ငါးဖမ်း လုပ်ငန်းအသက်မွေးမှုလေ့လာခြင်းအား သီးသန့်ကဏ္ဍတစ်ခုအဖြစ် ထည့်သွင်းထားပါသည်။

၅။ အဓိကအလားအလာရှိသော ပတ်ဝန်းကျင်ထိခိုက်မှုများနှင့် လျော့ပါးရေးအစီအမံများ

ဤအစီရင်ခံစာတွင်ဖော်ပြထားသည့် ကောင်းကျိုးသက်ရောက်မှုများနှင့် ဆိုးကျိုးသက်ရောက်မှုများသည် ရုပ်ပိုင်း၊ ဇီဝပိုင်းနှင့်လူမှုစီးပွားပိုင်းတို့တွင် ကနဦးတွေ့ရှိရသည့် သက်ရောက်မှုများဖြစ်ကြပါသည်။ စီမံကိန်းလုပ်ငန်းအဆင့်ဆင့်၏ သက်ရောက်မှုများကြောင့်ဖြစ်ပေါ်လာနိုင်သည့် ကျန်းမာရေးနှင့်ယဉ်ကျေးမှုဆိုင်ရာ အခြေအနေများကိုလည်း ထည့်သွင်း ထားပါသည်။

ဤသက်ရောက်မှုများသည် ဆောက်လုပ်ရေးမတိုင်မီကာလ၊ ဆောက်လုပ်ရေးကာလနှင့် လုပ်ငန်းလည်ပတ်မှုကာလဟူသော စီမံကိန်းအဆင့်ဆင့်ဆင့်လုံးတွင် အကျိုးဝင်ပါသည်။ စီမံကိန်းနှင့်တိုက်ရိုက်ပတ်သက်သူများအပါအဝင် အကျိုးသက်ဆိုင်သူများအားလုံးနှင့် တွေ့ဆုံမေးမြန်းမှုများ ပြုလုပ်ပါမည်။ လုပ်ငန်းလွှဲပြောင်းခြင်းနှင့်ပတ်သက်သည့် စီမံခန့်ခွဲမှုများဆိုင်ရာ အဆိုပြုချက်ကိုလည်း ထည့်သွင်းဖော်ပြမည်ဖြစ်ပြီး ဖြစ်ပေါ်လာနိုင်သည့် ပြဿနာများနှင့် ဖြေရှင်းဆောင်ရွက်ရမည့်နည်းလမ်းများကိုလည်း EIA အစီရင်ခံစာတွင် အဆိုပြုဖော်ပြပါမည်။

ရမ်းမြဲကျွန်းတွင်နေထိုင်သူများသည် ဆောက်လုပ်ရေးမတိုင်မီကာလ မြေယာသိမ်းဆည်းခံရမှုနှင့် ပြန်လည်နေရာချထားခြင်းဆိုင်ရာ ထိခိုက်မှုများကို ခံစားကြရမည်ဖြစ်သည်။ ဆောက်လုပ်ရေးကာလနှင့် လုပ်ငန်းလည်ပတ်မှုကာလများအတွင်း ဖုန်ထခြင်း၊ ဆူညံသံမြင့်တက်ခြင်း၊ ယာဉ်သွားယာဉ်လာများရှုပ်ထွေးခြင်း၊ ဆောက်လုပ်ရေးလုပ်ငန်းမှ စွန့်ပစ်ရေများအပါအဝင် စွန့်ပစ်ပစ္စည်းများထွက်ခြင်း၊ မြေတိုက်စားခံရခြင်းနှင့် အနည်ကျခြင်း၊ ရေနေသတ္တဝါများ၏ ကျက်စားရာနေရာ များဆုံးရှုံးခြင်း၊ အသက်မွေးဝမ်းကျောင်းလုပ်ငန်းများ ဆုံးရှုံးခြင်း (အထူးသဖြင့် ငါးဖမ်းလုပ်ငန်း) စသည်ဖြင့် ထိခိုက်မှုများ ရှိလာကြမည်။ သို့သော်လည်း ဆောက်လုပ်ရေးလုပ်ငန်းနှင့် စီမံကိန်းလုပ်ငန်းများလည်ပတ်ခြင်းကို သတ်မှတ်ထားသော စံနှုန်းများနှင့်အညီ ပြုလုပ်ခြင်းဖြင့် ထိုသက်ရောက်မှုများကို လျော့ပါးစေနိုင်မည်ဖြစ်ပါသည်။

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

အောက်ပါဇယားတွင် စီမံကိန်းအဆင့်တိုင်းအတွက် အလားအလာရှိသော ဆိုးကျိုးသက်ရောက်မှုအချို့နှင့် ၎င်းတို့အတွက် ဆီလျော်သော လျော့ပါးရေးအစီအမံအချို့ကို အကျဉ်းချုပ်ဖော်ပြထားသည်။

ဇယား-၅။ အလားအလာရှိသော ဆိုးကျိုးသက်ရောက်မှုများနှင့် လျော့ပါးရေးအစီအမံများ

စီမံကိန်းတည်ဆောက်မှုမစတင်မီအဆင့်

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
ရုပ်ပိုင်းဆိုင်ရာ ပတ်ဝန်းကျင်	<ul style="list-style-type: none"> စီမံကိန်းတည်ဆောက်ခြင်းမစတင်မီကာလတွင် ရုပ်ပိုင်းဆိုင်ရာဆိုးကျိုးသက်ရောက်မှုများ မတွေ့ရှိရသေးပါ။ 	
ဇီဝပိုင်းဆိုင်ရာ ပတ်ဝန်းကျင်	<ul style="list-style-type: none"> အချို့သောအပင်ငယ်များနှင့် သတ္တဝါများ ကျက်စားရာနေရာအချို့ ထိခိုက်ပျက်စီးခြင်း ကုန်းနေရေနေသတ္တဝါများအပါအဝင်နှင့် ၎င်းတို့၏ ဂေဟစနစ်ကိုထိခိုက်ခြင်း 	<ul style="list-style-type: none"> ဘူမိဗေဒနှင့်အင်ဂျင်နီယာဆိုင်ရာ ကွင်းဆင်းတိုင်းတာမှုများ၊ EIA အတွက် ကွင်းဆင်းလေ့လာမှုများသည် ပတ်ဝန်းကျင်အား ထိခိုက်မှု မရှိစေရန် ဂရုစိုက်ဆောင်ရွက်ခြင်း
လူမှုစီးပွား ဆိုင်ရာ ပတ်ဝန်းကျင်	<ul style="list-style-type: none"> ကျေးရွာများမှ အိမ်ထောင်စုများ၏ အဓိကအသက်မွေးဝမ်းကျောင်းဖြစ်သော ထွန်ယက်စိုက်ပျိုးမြေဆုံးရှုံးခြင်း အိမ်ထောင်စုများ ချက်ပြုတ်ရာတွင် အသုံးပြုသည့် ထင်းအရင်းအမြစ်များ ဆုံးရှုံးခြင်း စားကျက်မြေများဆုံးရှုံးခြင်းဖြင့် ကျေးရွာများရှိ တိရစ္ဆာန်မွေးမြူရေး လုပ်ငန်းအပေါ် ဆိုးကျိုးသက်ရောက်နိုင်ခြင်း ရပ်ရွာအခြေခံအဆောက်အအုံများ ဆုံးရှုံးခြင်း ပြန်လည်ရွှေ့ပြောင်းနေရာချထားမှုကြောင့် ရပ်ရွာစည်းလုံးညီညွတ်မှု ပျက်ပြားခြင်း၊ ကျန်းမာရေးနှင့် အခြေကျနေသော စီးပွားရေးလုပ်ငန်းများ ဆုံးရှုံးခြင်း 	<ul style="list-style-type: none"> မြေယာသိမ်းဆည်းမှုနှင့် ပြန်လည်နေရာချထားရေးတို့ကို မြန်မာနိုင်ငံ အစိုးရက တည်ဆဲဥပဒေများ၊ စံချိန်စံညွှန်းများနှင့်အညီ စနစ်တကျ စီမံခန့်ခွဲခြင်း မြေယာသိမ်းဆည်းမှုနှင့် ပြန်လည်နေရာချထားရေးတို့ကို ဆောင်ရွက်ရာတွင် နိုင်ငံတကာ စံနှုန်းများ၊ အကောင်းဆုံး အလေ့အထများနှင့် ကိုက်ညီစေရန် ပြည်ထဲရေးဝန်ကြီးဌာနအပြင် သက်ဆိုင်ရာ မြေယာကော်မတီများနှင့် ဆက်သွယ် ညှိနှိုင်းခြင်း

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စီမံကိန်းတည်ဆောက်မှုအဆင့်

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
ရုပ်ပိုင်းဆိုင်ရာ ပတ်ဝန်းကျင်	<ul style="list-style-type: none"> • ရေညစ်ညမ်းမှု 	<ul style="list-style-type: none"> • မြေပြင်ရေအရင်းအမြစ်များနှင့်ထိစပ်မှုရှိသည့် နေရာများတွင် မြေသားတူးဖော်ခြင်းအား တတ်နိုင်သမျှလျော့ချခြင်း • ဆောက်လုပ်ရေးလုပ်ငန်းမှ စီးဆင်းလာသည့် ရေများအတွက် အနည်ထိုင်ကန်များ တူးဖော်ထားရှိခြင်း • မြေပြင်ရေစီးဆင်းမှုအား စီမံခန့်ခွဲခြင်း
	<ul style="list-style-type: none"> • လေထုညစ်ညမ်းမှု 	<ul style="list-style-type: none"> • စီမံကိန်းအခြေခံအဆောက်အအုံများ ဆောက်လုပ် ရာမှ ထွက်လာနိုင်သော ဖုန်မှုန့်နှင့် အခိုးအငွေ့ ထုတ်လွှတ်မှုအတွက် စီမံခန့်ခွဲမှု လုပ်ငန်းစဉ်များ ရေးဆွဲဖော်ဆောင်ခြင်း
	<ul style="list-style-type: none"> • ဆူညံသံ 	<ul style="list-style-type: none"> • ဆောက်လုပ်ရေးလုပ်ငန်းများလုပ်ဆောင်ရာတွင် တတ်နိုင်သမျှ နေ့ပိုင်းအချိန်အတွင်း စီမံဆောင်ရွက်ခြင်း • ရှောင်လွှဲ၍မရသည့်အခြေအနေအတွက် ညပိုင်း အချိန်တွင်အလုပ်လုပ်ရန် လိုအပ်ပါက ခွင့်ပြုထား သော ဆူညံသံ (အသံညစ်ညမ်းမှု) အဆင့်အတွင်း တွင် ညဆိုင်းဆောက်လုပ်ခြင်းကို စီမံဆောင်ရွက် ခြင်း • အသံညစ်ညမ်းမှုကို ထိန်းချုပ်နိုင်ရန်အတွက် ဆူညံသံထိန်းချုပ်မှုအစီအမံများကို ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး အစီအစဉ်များထဲတွင် ရေးဆွဲအတည်ပြုခြင်း
	<ul style="list-style-type: none"> • အနှောင့်အယှက်ဖြစ်စေသော အလင်းရောင်များ 	<ul style="list-style-type: none"> • နေ့အလင်းရောင်မရှိသည့် အချိန်များတွင် လုပ်ငန်းဆောင်ရွက်ရာတွင် အနှောင့်အယှက် ဖြစ်စေသော အလင်းရောင်များကို ရှောင်ကြဉ်ရန် အလင်းရောင်လျော့ချပေးသည့် နည်းလမ်းများကို လိုအပ်ပါက အသုံးပြုခြင်း
	<ul style="list-style-type: none"> • ဖန်လုံအိမ်ဓာတ်ငွေ့များ ထုတ်လွှတ်မှု 	<ul style="list-style-type: none"> • လုံခြုံရေး သို့မဟုတ် လုပ်ငန်းလိုအပ်သည့်အခြေ အနေတို့မှလွဲ၍ ယာဉ်များ၊ အင်ဂျင်စက်များကို အချိန်ကာလ ကြာရှည်စွာ အကြောင်းမဲ့ စက်နိုးထားခြင်းကို ရှောင်ရှားရန် ယာဉ်မောင်းများနှင့် စက်မောင်းများအားညွှန်ကြားခြင်းနှင့်

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
	<ul style="list-style-type: none"> ဒေသတွင်းရာသီဥတု အခြေအနေပြောင်းလဲခြင်း ကမ်းရိုးတန်းဇလဗေဒ ပြောင်းလဲခြင်း ယာဉ်ကြောပိတ်ဆို့ခြင်း အမှိုက်ထွက်ရှိမှု 	<p>စောင့်ကြပ်ကြည့်ရှုခြင်း</p> <ul style="list-style-type: none"> ပတ်ဝန်းကျင်စိန်လမ်းစိုပြေရေးအတွက် ပြင်ဆင် ဆောင်ရွက်ချက်များကို ပါဝင်ထည့်သွင်းခြင်း ရေရှည်ဖွံ့ဖြိုးတိုးတက်မှုနှင့် ပတ်ဝန်းကျင် စိမ်းလန်းစိုပြည်ရေး အခြေခံသည့် သဘော တရားများကို အင်ဂျင်နီယာလုပ်ငန်းများရေးဆွဲ ရေး၊ အကောင်အထည်ဖော်ရေးလုပ်ငန်းစဉ် များနှင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲရေးအစီအမံများ၊ ရည်မှန်းချက်များ ရေးဆွဲထည့်သွင်းခြင်း ဆောက်လုပ်ရေးလုပ်ကိုင်ရာတွင် ကမ်းပေါ်မှ အပင်များအား တတ်နိုင်သမျှ ထိခိုက်မှုနည်းအောင် ဂရုစိုက်ခြင်း ယာဉ်အသွားအလာ စီမံခန့်ခွဲမှုအစီအစဉ်ကို ရေးဆွဲခြင်း ဒေသတွင်းလမ်းများနှင့် ယာဉ်ကြောစင်္ကြံများ ပေါ်တွင် စီမံကိန်းကြောင့် ယာဉ်ကြောပိတ်ဆို့မှု ကို လျော့နည်းစေရန်အတွက် ယာဉ်ကြော ပိတ်ဆို့မှုမဖြစ်စေရန် စောင့်ကြပ်ကြည့်ရှု ပြုလုပ်ခြင်း ဆောင်ရွက်နေသည့် စုံစမ်းစစ်ဆေးမှုလုပ်ငန်း များ၏ တွေ့ရှိချက်များနှင့် အကျိုးသက်ရောက်မှု အကဲဖြတ်ချက်များကို အခြေခံ၍ ယာဉ်ကြောစီမံ ခန့်ခွဲမှုအစီအစဉ်ရေးဆွဲခြင်းကဲ့သို့သော လျော့ပါး သက်သာစေရေး အစီအမံများကို ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာတွင် ရေးဆွဲ အတည်ပြုခြင်း ဆောက်လုပ်ရေး အမှိုက်စီမံခန့်ခွဲမှု အစီအစဉ်ကို ရေးဆွဲခြင်း 3Rs (လျော့ချ၊ ပြန်လည်အသုံးပြုခြင်းနှင့် ပြန်လည်ပြင်ဆင်အသုံးပြုခြင်း) အလေ့အကျင့်ကို ကျင့်သုံးခြင်း
<p>ဇီဝပိုင်းဆိုင်ရာ ပတ်ဝန်းကျင်</p>	<ul style="list-style-type: none"> ရေနေသတ္တဝါများ နေထိုင် ကျက်စားရာ နေရာများ ဆုံးရှုံးခြင်း 	<ul style="list-style-type: none"> ဒေသမျိုးရင်းအပင်များကို ပြန်လည်စိုက်ပျိုး ခြင်းဖြင့် ရေနေသတ္တဝါများ ကျက်စားရာနေရာ များကို ပြန်လည်ဖန်တီးခြင်း

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
	<ul style="list-style-type: none"> ကုန်းနေ၊ ရေနေတိရစ္ဆာန်များကို ထိခိုက်ပျက်စီးစေခြင်း နှင့် ၎င်းတို့ကျက်စားရာနေရာများ ရွှေ့ပြောင်းသွားခြင်း 	<ul style="list-style-type: none"> သောင်တူးခြင်းလုပ်ငန်းအတွက် သင့်လျော်သော အချိန်ကို ရွေးချယ်ခြင်း (ဥပမာ၊ ဒီရေတက်ချိန်၊ ကျချိန်အလိုက်)
လူမှုစီးပွား ဆိုင်ရာ ပတ်ဝန်းကျင်	<ul style="list-style-type: none"> ကျန်းမာရေးနှင့် နေထိုင်မှုအပေါ် သက်ရောက်မှုများ 	<ul style="list-style-type: none"> လေထုညစ်ညမ်းမှု၊ ဆူညံသံ၊ စွန့်ပစ်ပစ္စည်း ထုတ်လွှတ် ခြင်းနှင့် တုန်ခါမှုများလျော့ပါးရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြည့်ရေးအစီအမံများ ဖော်ဆောင်ခြင်း
	<ul style="list-style-type: none"> ရေလုပ်ငန်းအသက်မွေးဝမ်းကျောင်းများထိခိုက်နိုင်ခြင်း ဒေသတွင်း အခြေခံ အဆောက်အအုံနှင့် ဝန်ဆောင်မှုများ၏ လိုအပ်ချက်အပြောင်းအလဲများ 	<ul style="list-style-type: none"> ရေလုပ်ငန်းအသက်မွေးဝမ်းကျောင်း ဆုံးရှုံးသူများ၏ ပုံမှန်ဘဝပြန်လည်ရောက်ရှိစေရန် ကူညီဆောင်ရွက်ပေးခြင်း
	<ul style="list-style-type: none"> အများပြည်သူကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး (ကူးစက်နိုင်သောရောဂါများ) 	<ul style="list-style-type: none"> ရွှေ့ပြောင်းလာသော လုပ်သားများအတွက် ကျန်းမာရေး စောင့်ရှောက်ကုသမှုအလွယ်တကူ ရရှိခြင်းနှင့်သင့်လျော်သောစောင့်ရှောက်မှု ရရှိခြင်း
	<ul style="list-style-type: none"> အများပြည်သူကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး (ပိုးမွှားကြောင့်ဖြစ်နိုင်သော ရောဂါများ) 	<ul style="list-style-type: none"> ပိုးလောက်လန်းနှင့် ခြင်ပေါက်ပွားမှုကို တားဆီးရန်နှင့် ခြင်ကြောင့်ဖြစ်သော ရောဂါများကို ကာကွယ်ရန် (၁) ခြင်ပေါက်ပွားနိုင်သည့်နေရာများကို ရှင်းလင်းဖယ်ရှားခြင်း၊ (၂) ဆေးဖျန်းခြင်း (၃) ဆေးစိမ်ခြင်ထောင်များ အသုံးပြုခြင်း သက်ဆိုင်ရာကျန်းမာရေးဌာန၏ ပိုးမွှားကြောင့် ဖြစ်တတ်သော ရောဂါများ ထိန်းချုပ်ရေး အစီအစဉ်မှတာဝန်ရှိသူများနှင့် ပူးပေါင်း ဆောင်ရွက်ခြင်းဖြင့် ရောဂါပြန့်ပွားရာ ပင်မနေရာကို ထိန်းချုပ်ရှင်းလင်းခြင်း
	<ul style="list-style-type: none"> ယာဉ်အန္တရာယ်ကင်းရှင်းရေး 	<ul style="list-style-type: none"> ထိခိုက်ခံရမှုအလွယ်ဆုံးဖြစ်သော စီမံကိန်း လုပ်သားများနှင့် လမ်းအသုံးပြုသူများအတွက် ယာဉ်အန္တရာယ် လျော့ပါးစေသည့် နည်းလမ်းများ၊ အကာအကွယ်ပေးမည့် ဘေးကင်းရေး အစီအမံများ ချမှတ်ဆောင်ရွက်ခြင်း

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စီမံကိန်းလည်ပတ်မှုအဆင့်

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
ရုပ်ပိုင်းဆိုင်ရာ ပတ်ဝန်းကျင်	<ul style="list-style-type: none"> ရေညစ်ညမ်းမှု <ul style="list-style-type: none"> ရေဆိုးများစွန့်ထုတ်ခြင်း တားမြစ်ထားသော ပစ္စည်းများ မတော်တဆယိုဖိတ်မှု ရေယာဉ်များမှ စွန့်ထုတ် ပစ္စည်းများ 	<ul style="list-style-type: none"> ရေဆိုးစွန့်ထုတ်မှုကို အပြည်ပြည်ဆိုင်ရာ စည်းကမ်းချက်များအတိုင်း တင်းတင်းကျပ်ကျပ် လိုက်နာခြင်း ပင်လယ်ပြင်တွင် ဖိတ်စင်မှုများအား တုံ့ပြန်ရေး အစီအစဉ်တွင် သတ်မှတ်ထားသည့် လုပ်ထုံး လုပ်နည်းအဆင့်ဆင့် နှင့်အညီ သင့်လျော်သော အရေးပေါ်တုံ့ပြန်ရေး လုပ်ထုံး လုပ်နည်းများကို လိုက်နာခြင်း နိုင်ငံတကာစံနှုန်းများ၊ ဆိပ်ကမ်းမူဝါဒများ၊ လုပ်ထုံး လုပ်နည်းများနှင့်အညီ မြန်မာ့ရေပိုင်နက် အတွင်း သင်္ဘောများမှ မိလ္လာနှင့် အခြားအညစ် အကြေးများ စွန့်ပစ်ခြင်းကို တားမြစ်ခြင်း
	<ul style="list-style-type: none"> လေထုညစ်ညမ်းမှု 	<ul style="list-style-type: none"> NEQG⁹ နှင့် WHO လမ်းညွှန်ချက်စံနှုန်းများ နှင့် အညီ နိုက်ထရိုဂျင်အောက်ဆိုဒ်များနှင့် ကာဗွန်ဒိုင် အောက်ဆိုဒ်ထုတ်လွှတ်မှုနည်းသော နည်းပညာ အသုံးပြုသည့် လျှပ်စစ်ဂျင်နရေတာများကို အသုံးပြုခြင်း မော်တော်ယာဉ်များမှ ထုတ်လွှတ်သောမီးခိုးများ သည် သတ်မှတ်စံနှုန်းများအတွင်း ရှိ မရှိကို စောင့်ကြပ်ကြည့်ရှုခြင်း
	<ul style="list-style-type: none"> ယာဉ်ကြောပိတ်ဆို့ခြင်း (ကုန်းလမ်းနှင့် ရေကြောင်း) 	<ul style="list-style-type: none"> စီမံကိန်းအကောင်အထည်ဖော်ရာတွင် ပို့ဆောင် ရေးလုပ်ငန်းကြီးများကို လုပ်ငန်း မစတင်မီ ယာဉ်ကြောအသွားအလာဆိုင်ရာ အချက်အလက် နှင့်သတင်းများကို အများပြည်သူအား အသိပေး ခြင်း၊ ယခုစီမံကိန်းတွင် တည်ဆောက်မှု မစတင်မီ နှင့် ယာဉ်လမ်းကြောင်း အသုံးပြုမှုနှင့်ယာဉ်ကြော ကြပ်မှုများ စီမံကိန်း လိုအပ်ချက်အရ ဖြစ်ပေါ်လာ မည်ဖြစ်၍ ယာဉ်ကြောစီမံခန့်ခွဲရေး အစီအစဉ် အသေးစိတ်ကို ရေးဆွဲအတည်ပြုဖော်ပြခြင်း ယာဉ်ကြောထိန်းသိမ်းမှုကျွမ်းကျင်သူများ ခန့်အပ် တာဝန်ပေးခြင်း
ဇီဝပိုင်းဆိုင်ရာ	<ul style="list-style-type: none"> ဇီဝအရင်းအမြစ်များ ပျက်သုဉ်းလာပြီး 	<ul style="list-style-type: none"> အလုပ်သမားများ၏ စားနပ်ရိက္ခာအဖြစ် စီမံကိန်းဧရိယာမှ ငါးမန်း၊ ငါးလိပ်ကျောက်နှင့်

⁹ NEQG: National Environmental Quality (Emission) Guidelines

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
ပတ်ဝန်းကျင်	ဇီဝမျိုးစုံမျိုးကွဲများ ဆုံးရှုံးခြင်း	လင်းပိုင်ကဲ့သို့သော ရှားပါး၊ မျိုးသုဉ်းလုနီးပါး မျိုးစိတ်များကို ဖမ်းယူစားသုံးခြင်းမှ ရှောင်ရှားခြင်း • သန္တာကျောက်တန်းများနှင့် ပင်လယ်မြက်ရှိရာ နေရာများကို မထိခိုက်စေဘဲ သင်္ဘောကြီး၊ ငယ်များအား သတ်မှတ်ထားသော နေရာများတွင် ကျောက်ချစေခြင်း
	• ပင်လယ်ရေအရည်အသွေး ကျဆင်းခြင်းနှင့် ရေတွင် ပျော်ဝင်နိုင်သည့်သတ္တုဓာတ်များ ပိုမိုများပြားလာခြင်း	• မြေဆီလွှာအမှုန်အမွှားများ မပျံ့စေရန် ယာယီ အကာအရံ အတားအဆီးများ တည်ဆောက်ပေးခြင်း • စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုအတွက် နိုင်ငံတကာ အလေ့အထများနှင့်အညီ လုပ်ဆောင်နိုင်ရန် အစီအစဉ်ရေးဆွဲခြင်းနှင့် မြစ်ချောင်းကမ်းနားများ အတွင်း မစွန့်ပစ်ရန် တားမြစ်ခြင်း
လူမှုစီးပွား ဆိုင်ရာ ပတ်ဝန်းကျင်	• အများပြည်သူကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး (ကူးစက်နိုင်သောရောဂါများ)	• ရွှေ့ပြောင်းလာသော လုပ်သားများအတွက် ကျန်းမာရေးစောင့်ရှောက်မှုအလွယ်တကူ ရရှိခြင်းနှင့်သင့်လျော်သောစောင့်ရှောက်မှုရရှိခြင်း
	• အများပြည်သူကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေး (ပိုးမွှားကြောင့် ဖြစ်နိုင်သော ရောဂါများ)	• ပိုးလောက်လန်းနှင့် ခြင်ပေါက်ပွားမှုကို တားဆီးရန်နှင့် ခြင်ကြောင့်ဖြစ်သော ရောဂါများကို ကာကွယ်ရန် (၁) ခြင်ပေါက်ပွားနိုင်သည့် နေရာများကို ရှင်းလင်းဖယ်ရှားခြင်း၊ (၂) ဆေးဖျန်းခြင်း (၃) ဆေးစိမ်ခြင်ထောင်များ အသုံးပြုခြင်း • သက်ဆိုင်ရာကျန်းမာရေးဌာန၏ ပိုးမွှားကြောင့် ဖြစ်တတ်သော ရောဂါများ ထိန်းချုပ်ရေး အစီအစဉ်မှတာဝန်ရှိသူများနှင့် ပူးပေါင်း ဆောင်ရွက်ခြင်းဖြင့် ရောဂါပြန့်ပွားရာ ပင်မနေရာကို ထိန်းချုပ်ရှင်းလင်းခြင်း
	• ယာဉ်အန္တရာယ်ကင်းရှင်းရေး	• ထိခိုက်ခံရမှုအလွယ်ဆုံးဖြစ်သော စီမံကိန်း လုပ်သားများနှင့် လမ်းအသုံးပြုသူများအတွက် ယာဉ်အန္တရာယ် လျော့ပါးစေသည့် နည်းလမ်းများ၊ အကာအကွယ်ပေးမည့် ဘေးကင်းရေး အစီအမံများ ချမှတ်ဆောင်ရွက်ခြင်း

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စီမံကိန်းလွှဲပြောင်းမှုအဆင့်

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
လူမှုစီးပွား ဆိုင်ရာ ပတ်ဝန်းကျင်	<ul style="list-style-type: none"> • စီမံကိန်းတွင်ပါဝင်သော ကုမ္ပဏီအစုအဖွဲ့များနှင့်ပတ်သက်၍ အငြင်းပွားမှုများ ဖြစ်လာနိုင်ခြင်း • လုပ်ငန်းလုပ်ကိုင်ခွင့်ကာလ အားတိုးမြှင့်ခြင်း • စီမံကိန်းသုံးပစ္စည်းများ၊ ကိရိယာများကို အလွန်အမင်း သုံးစွဲထားခြင်း • စီမံကိန်းဝန်ဆောင်မှုများ တည်ငြိမ်မှုမရှိခြင်းနှင့် ဆက်စပ်မှု ပြတ်တောက်ခြင်း • အလုပ်သမားများ လွှဲပြောင်းခြင်း နှင့် ဝန်ထမ်းအသစ်များ အား လေ့ကျင့်သင်တန်း ပေးခြင်းတွင် အခက်အခဲရှိခြင်း • လုပ်ငန်းလွှဲပြောင်းခြင်းနှင့် လွှဲပြောင်းပြီးအခြေအနေများ အတွက် စီမံခန့်ခွဲမှု အခက်အခဲ ရှိခြင်း • ခေတ်မီမီတော့သည့် နည်းပညာ 	<ul style="list-style-type: none"> • အကျိုးသက်ဆိုင်သူများ၊ သက်ဆိုင်ရာ ဘာသာရပ်တွင် ကျွမ်းကျင်သူများ နှင့် ကျွမ်းကျင်မှု ဆိုင်ရာတွေ့ဆုံမေးမြန်းမှုများ၊ ဆွေးနွေးမှုများကို ပြုလုပ်ခြင်း (အထူးသဖြင့် စီမံကိန်းနှင့် သက်ဆိုင်သည့် လုပ်ငန်းအဖွဲ့ အစည်းများနှင့် ဆွေးနွေးခြင်း) • စီမံကိန်းလွှဲပြောင်းခြင်းအတွက် စီမံခန့်ခွဲမှု အစီအစဉ်ကို အဆိုပြုနိုင်ရန်အတွက် ပြင်ဆင်ခြင်း • ဖြစ်ပေါ်လာနိုင်သည့် ပြဿနာများနှင့် ဖြေရှင်း ဆောင်ရွက်ရမည့်အချက်များကို EIA အစီရင်ခံစာတွင် အဆိုပြုဖော်ပြခြင်း

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စီမံကိန်းရပ်ဆိုင်းမှုအဆင့်

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
<p>ရုပ်ပိုင်းဆိုင်ရာ ပတ်ဝန်းကျင်၊ လူမှုစီးပွားပတ်ဝန်းကျင်</p>	<ul style="list-style-type: none"> • ကုန်ကျစရိတ်ပြဿနာများ • ကျန်းမာရေး၊ လုံခြုံရေးဆိုင်ရာ ပြဿနာများ • သဘာဝပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု • သဘာဝအရင်းအမြစ်များ ရရှိနိုင်မှု • အကျိုးသက်ဆိုင်သူများ ပါဝင်မှု 	<ul style="list-style-type: none"> • စီမံကိန်းတစ်ခု၏ လုပ်ငန်းသက်တမ်း ကုန်ဆုံးသည့်အခါ သို့မဟုတ် ၎င်းစီမံကိန်းအား အသုံးပြုနိုင် သည့်ကာလကုန်ဆုံးသည့်အခါ ဆိပ်ကမ်းပိုင်ရှင်နှင့် သက်ဆိုင်သူများအားလုံး သည် ၎င်းတို့နှင့် သက်ဆိုင်သည့် အခြေခံ အဆောက်အအုံများ အားလုံးကို ရပ်တန့်ခြင်း • စီမံကိန်းရပ်တန့်ခြင်းတွင် ဆိပ်ကမ်းအခြေခံ အဆောက်အအုံများအား စီမံကိန်းဧရိယာမှ အချိန်မီ၊ အန္တရာယ်ကင်းစွာ ဖယ်ရှားပစ်ခြင်း ဖြစ်သည်။ ပတ်ဝန်းကျင်ဆိုင်ရာ တုံ့ပြန် ဆောင်ရွက်မှုများကိုလည်း ဆောင်ရွက်ရမည်။ တစ်နည်းအားဖြင့် ကျေနပ်မှုဖြစ်စေသော အခြေအနေအထိ ဖြေရှင်းခြင်းဖြစ်သည်။ • အခြေခံအဆောက်အအုံများအား လုပ်ငန်းခွင်တွင် ဖြိုချ ဖြုတ်ထုတ်ခြင်း သို့မဟုတ် အပိုင်းပိုင်းအစစ် ဖြစ်အောင် ဖြတ်တောက်ခြင်း နှင့် ရေယာဉ်ကုန် တင်တွဲများဖြင့် တခြား တစ်နေရာသို့ ပို့ဆောင် ခြင်းများဖြင့် စီမံကိန်းအား ရပ်တန့်နိုင်သည်။ • ထိရောက်ပြီး ဟန်ချက်ညီသော ဖြေရှင်းမှုများ ဖြစ်ရမည်။ နိုင်ငံတကာ ကတိကဝတ်များနှင့် ကိုက်ညီမှုရှိရမည်။ ဆိုလိုသည်မှာ စီမံကိန်း၏ အစိတ် အပိုင်းများအားလုံးကို ပြည့်စုံလုံလောက် စွာ ရှင်းထုတ်စွန့်ပစ်ခြင်း၊ မြေများ၊ အဆောက်အအုံများအား မူလအခြေအနေသို့ ပြန်လည်ရောက်ရှိအောင် ဆောင်ရွက်ရမည်။ • ဖြိုချဖြုတ်ထုတ်ခြင်းနှင့် စီမံကိန်းရပ်တန့်ခြင်း ဆိုင်ရာ လုပ်ဆောင်မှုများသည် ပြုပြင်ထိန်းသိမ်း ခြင်းနှင့် စွန့်ပစ်ခြင်းလုပ်ငန်းများတွင်လည်း အကျိုး ဝင်သည်။

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

ရာသီဥတုပြောင်းလဲခြင်း၏သက်ရောက်မှု

ပတ်ဝန်းကျင် အမျိုးအစား	ဆိုးကျိုးသက်ရောက်မှု	လျော့ပါးရေးအစီအမံများ
ရာသီဥတု ပြောင်းလဲခြင်း ၏ သက်ရောက်မှု	<ul style="list-style-type: none"> • စီမံကိန်းအကောင်အထည် ဖော်ခြင်းနှင့်လုပ်ငန်း လည်ပတ်ခြင်း ကာလတို့တွင် ရာသီဥတု ပြောင်းလဲခြင်းကို ဖြစ်စေနိုင် သည့် ဖန်လုံအိမ် ဓာတ်ငွေ့များ (မီသိန်း၊ ကာဗွန်ဒိုင်အောက်ဆိုဒ်၊ နိုက်ထရပ်အောက်ဆိုဒ်) ထုတ်လွှတ်ခြင်း 	<ul style="list-style-type: none"> • ရေနက်ဆိပ်ကမ်းအတွက်ဒီဇိုင်းရေးဆွဲရာတွင် အောက်ပါအချက်များကို အဓိကထား၍ရေးဆွဲ ရမည်။ <ul style="list-style-type: none"> ○ စွမ်းအင်သုံးစွဲမှုထိရောက်ခြင်းနှင့် စွမ်းအင် ချွေတာခြင်း အစီအစဉ်များ ○ သင့်လျော်သည့်ပစ္စည်းများ၊ အရင်းအမြစ် များကို ရွေးချယ်အသုံးပြုခြင်း ○ လုပ်ငန်းလည်ပတ်မှုအတွက် ပြန်ပြည့်မြဲ ဖြစ်သော စွမ်းအင် (Renewable energy) ကိုအသုံးပြုခြင်း ○ စွန့်ပစ်ပစ္စည်းများအတွက် ပြည့်စုံသော စီမံ ခန့်ခွဲမှုနှင့် ရေကိုထိရောက်စွာ အသုံးပြုခြင်း ○ ကာဗွန်ကိုစုတ်ယူနိုင်သည့် သစ်ပင်များ စိုက်ပျိုးခြင်းကို ပေါင်းစပ်လုပ်ကိုင်ခြင်း • စီမံကိန်းသက်တမ်းတစ်လျှောက် စက်ကိရိယာ များ၊ ဆောက်လုပ်ရေးပစ္စည်းများနှင့် စွမ်းအင် အသုံးပြုခြင်း၊ အဆင့်ဆင့်သောလုပ်ငန်းများ ဆောင်ရွက်ခြင်းတို့တွင် ဓာတ်ငွေ့ယိုစိမ့်၊ ထုတ်လွှတ်ခြင်းကို နည်းနိုင်သမျှနည်းအောင် သတိပြုဆောင်ရွက်ရမည်။

အခြားဆက်နွယ်နေသည့်သက်ရောက်မှုများ

အောက်ဖော်ပြပါ ဆက်နွယ်နေသည့်သက်ရောက်မှုများကိုလည်း လေ့လာဆန်းစစ်ပြီး EIA အစီရင်ခံစာတွင် ဖော်ပြပါ မည်။

- ၁။ ကြွင်းကျန်သက်ရောက်မှုများအား ဆန်းစစ်ခြင်း
- ၂။ ဆက်စပ်သက်ရောက်မှုများအား ဆန်းစစ်ခြင်း
- ၃။ နယ်စပ်ဖြတ်ကျော်နိုင်သည့် သက်ရောက်မှုများအား ဆန်းစစ်ခြင်း
- ၄။ လူ့အခွင့်အရေးအပေါ်သက်ရောက်မှုများအား ဆန်းစစ်ခြင်း
- ၅။ အသက်မွေးဝမ်းကျောင်းအပေါ်သက်ရောက်မှုများအား ဆန်းစစ်ခြင်း (အထူးသဖြင့် ငါးဖမ်းလုပ်ငန်း အတွက်)

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ကောင်းကျိုးသက်ရောက်မှုများ

ရေနက်ဆိပ်ကမ်းစီမံကိန်းသည် ဒေသခံများအား နည်းလမ်းအမျိုးမျိုးဖြင့် အကျိုးပြုနိုင်ပါသည်။ Corporate Social Responsibility (CSR) ဟုခေါ်သည့် ကုမ္ပဏီများ၏လူမှုရေးဆိုင်ရာတာဝန်အရ လုပ်ဆောင်သည့် ဆောင်ရွက်ချက်များသည် ဒေသခံများအတွက် အကျိုးအမြတ်များအား တိုးပွားစေနိုင်ပါသည်။ ပြည်သူ့ သက်သာချောင်ချိရေးအစီအစဉ်များအား ဆောင်ရွက်နိုင်ရန် စီမံကိန်းအဆိုပြုသူက ဘတ်ဂျက်ငွေပမာဏ တစ်ခုကို လျာထားမည်ဖြစ်သည်။ ပြည်သူ့သက်သာ ချောင်ချိရေးအစီအစဉ်များတွင် အသက်မွေးဝမ်းကျောင်း ဆိုင်ရာ လေ့ကျင့်သင်တန်းများဖွင့်လှစ်ခြင်း၊ ရပ်ရွာဖွံ့ဖြိုးမှု ဆောင်ရွက်ခြင်း၊ သဘာဝဘေးဒဏ်မှကာကွယ်ခြင်း နှင့် အရေးပေါ်ကယ်ဆယ်ရေးလုပ်ငန်းများအား ပြင်ဆင်ထားရှိခြင်း၊ ကျန်းမာရေးစောင့်ရှောက်မှုနှင့် ပညာရေး စသည်တို့ပါဝင်ပါမည်။

ယေဘုယျအားဖြင့် အောက်ဖော်ပြပါကဏ္ဍများသည် ဒေသခံပြည်သူများအတွက် စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာ မည့် အကျိုးကျေးဇူးများအဖြစ် မှတ်ယူနိုင်ပါသည်။

- ၁။ ဒေသခံပြည်သူများ၏ အလုပ်အကိုင်၊ ဝင်ငွေနှင့်အသက်မွေးဝမ်းကျောင်းလုပ်ငန်းများ တိုးတက်လာ ပြီး ကျန်းမာရေးတိုးတက်ကောင်းမွန်ခြင်းနှင့်သက်သာချောင်ချိခြင်း။
- ၂။ စီမံကိန်းဧရိယာအတွင်း အလုပ်အကိုင်နှင့် ဝင်ငွေအခွင့်အလမ်းများ တိုးပွားစေခြင်း။
- ၃။ ဒေသတွင်းပညာရေးဆိုင်ရာအဆောက်အအုံများနှင့် ဆေးဘက်ဆိုင်ရာအထောက်အကူပြုပစ္စည်းများ ပံ့ပိုးပေးခြင်းဖြင့် ဒေသခံလူထု၏ ပညာရေးနှင့် ကျန်းမာရေးစောင့်ရှောက်မှုကို မြှင့်တင်ပေးခြင်း။
- ၄။ စီမံကိန်းဝန်ထမ်းများအတွက် လူနေမှုဘဝနှင့် လုပ်ငန်းခွင်အခြေအနေများ ပိုမိုကောင်းမွန်လာခြင်း။
- ၅။ အခြေခံအဆောက်အအုံများ တိုးတက်ကောင်းမွန်လာခြင်းနှင့် ဝင်ငွေတိုးလာခြင်းကြောင့် လူနေမှု အဆင့် အတန်းမြင့်မားလာခြင်း (သက်ဆိုင်ရာကျန်းမာရေးနှင့်ပညာရေးရလဒ်များနှင့်အတူ)။
- ၆။ စီမံကိန်းအလှူငွေများနှင့် အခြားထည့်ဝင်မှုများကြောင့် ဒေသတွင်းအခြေခံအဆောက်အအုံနှင့် ဝန်ဆောင်မှုများ ပိုမိုကောင်းမွန်လာခြင်း။
- ၇။ ပြည်နယ်အစိုးရနှင့် ပြည်ထောင်စုအစိုးရတို့သည် စီမံကိန်းလည်ပတ်ခြင်းမှ အခွန်ငွေရရှိသော ကြောင့် ဒေသဖွံ့ဖြိုးရေးလုပ်ငန်းများကို ပိုမိုလုပ်ဆောင်လာနိုင်ပြီး ဒေသတွင်း အခြေခံအဆောက် အအုံနှင့် ဝန်ဆောင်မှုများ ပိုမိုကောင်းမွန်လာခြင်း။
- ၈။ စီမံကိန်း၏ထောက်ပံ့မှုကြောင့် ဒေသခံပြည်သူများအနေဖြင့် အရေးပေါ်တုံ့ပြန်မှုအစီအစဉ်များကို နားလည် သဘောပေါက်ကာ လက်တွေ့လုပ်ဆောင်လာနိုင်ခြင်း။
- ၉။ ဒေသအဆင့်နှင့်နိုင်ငံတော်အဆင့်စီးပွားရေးဖွံ့ဖြိုးတိုးတက်လာခြင်း။

လျော့ပါးရေးနည်းလမ်းများနှင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်

ရေနက်ဆိပ်ကမ်းစီမံကိန်း၏ ကောင်းကျိုးသက်ရောက်မှုများကို ပိုမိုကောင်းမွန်အောင်ဆောင်ရွက်နိုင်သကဲ့သို့ ဆိုးကျိုး သက်ရောက်မှုများကိုလည်း လျော့ပါးစေသောနည်းလမ်းများဖြင့် ရှောင်ရှားလျော့ချနိုင်ပါသည်။ စီမံကိန်း လုပ်ဆောင်ချက် များကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ဆိုးကျိုးသက်ရောက်မှုများကို စီမံကိန်းအဆင့်ဆင့်တွင် လက်တွေ့ကျသော လျော့ပါးရေးနည်းလမ်းများဖြင့် စီမံခန့်ခွဲနိုင်ရန် ထောက်ခံအကြံပြုမည်ဖြစ်ပါသည်။ EIA ၏ နောက်ဆုံးအဆင့်တွင် နိုင်ငံတကာအလေ့အကျင့်များနှင့် စံလမ်းညွှန်ချက်များကို လိုက်နာဆောင်ရွက်နိုင် ရန်ထုတ်ဖော်တင်ပြပြီး၊ ပတ်ဝန်းကျင်ဆိုင်ရာ၊ လူမှုစီးပွားဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ် (EMP) နှင့် စောင့်ကြပ် ကြည့်ရှုခြင်းအစီအစဉ် (Monitoring) ကိုလည်း ရေးဆွဲတင်ပြအဆိုပြုပါမည်။

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

၆။ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းနှင့် အများပြည်သူတို့ ထုတ်ဖော်တင်ပြခြင်း

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းအတွက် နယ်ပယ်အတိုင်းအတာ သတ်မှတ်ခြင်းလုပ်ငန်းအဆင့်တွင် စီမံကိန်းနှင့်သက်ဆိုင်သူများကို တိုင်ပင်ဆွေးနွေးခဲ့ပါသည်။ ဤလုပ်ငန်းစဉ်တွင် အဓိကသတင်းအချက်အလက်ပေးနိုင်သူ ၁၂၇ ဦးနှင့် လူတွေ့မေးမြန်းခြင်း၊ အုပ်စုဖွဲ့ဆွေးနွေးခြင်း ၉ ခု၊ အလုပ်ရုံ ဆွေးနွေးပွဲ ၂ ခုနှင့် အများပြည်သူ နှင့်တွေ့ဆုံဆွေးနွေးခြင်း ၂ ခုတို့ ပါဝင်ပါသည်။ စီမံကိန်းနှင့် အကျိုးသက်ဆိုင် သူအစုအဖွဲ့များကို အောက်ပါအတိုင်း ခွဲခြားသတ်မှတ်ခဲ့သည်။

စဉ်	အကျိုးသက်ဆိုင်သူအုပ်စုများ	တည်ရှိမှု		မှတ်ချက်
		ကျေးရွာ	မြို့	
၁။	ငါးဖမ်းလုပ်ငန်းရှင်များ/ရေလုပ်သားများ	■		ဒေသခံများ (တိုက်ရိုက်ထိခိုက်ခံရသူများ)
၂။	စက်လှေပိုင်ရှင်များ	■		
၃။	လယ်သမား/ စိုက်ပျိုးရေးလုပ်ငန်းလုပ်ကိုင်သူများ	■		
၄။	မွေးမြူရေးလုပ်ငန်းလုပ်ကိုင်သူများ	■		
၅။	အခြားအသက်မွေးဝမ်းကျောင်းလုပ်ငန်းလုပ်ကိုင်သူများ	■		
၆။	ကျေးရွာအုပ်ချုပ်ရေးမှူးများ၊ ကျေးရွာရပ်မိရပ်ဖများ	■		
၇။	ထိခိုက်နစ်နာလွယ်သောအုပ်စုများ	■		
၈။	လူနည်းစုတိုင်းရင်းသားများ	■		
၉။	ဘာသာရေးခေါင်းဆောင်များ	■	■	
၁၀။	အသက် ၃၀ အောက်လူငယ်များ	■		
၁၁။	အမျိုးသမီးများ	■		
၁၂။	နိုင်ငံရေးပါတီများ		■	မြို့နေပြည်သူများ (တစ်ဆင့်ခံထိခိုက်ခံရသူများ)
၁၃။	မြို့မိမြို့ဖများ		■	
၁၄။	လူမှုရေးအဖွဲ့အစည်းများ (CSOs)		■	
၁၅။	အစိုးရမဟုတ်သောအဖွဲ့အစည်းများ (NGOs)		■	
၁၆။	နိုင်ငံတကာအစိုးရမဟုတ်သောအဖွဲ့အစည်းများ (INGOs)		■	
၁၇။	ရပ်ကွက်အုပ်ချုပ်ရေးမှူးများ		■	
၁၈။	အစိုးရဌာနဆိုင်ရာများ		■	

အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးပွဲ၊ ပထမနေ့ဆွေးနွေးပွဲမှအဓိကတွေ့ရှိချက်များ (ကျောက်ဖြူ)

အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်းပထမနေ့အစည်းအဝေး ဆွေးနွေးမှုများအနက်မှ အဓိကတွေ့ရှိချက်များကို အောက်ပါဇယားတွင်ဖော်ပြထားပါသည်။

ဇယား ၆။ သက်ဆိုင်သူများ၏ ဆွေးနွေးမှုများမှ အဓိကတွေ့ရှိချက်များ

စဉ်	အဓိကဆွေးနွေးသည့်အချက်	အကြံပြုချက်များ၊ မေးမြန်းမှုများ
အလုပ်အကိုင်အခွင့်အလမ်းဆိုင်ရာ		
၁။	အလုပ်အကိုင်များ ခန့်ထားခြင်း	အလုပ်အကိုင်များခန့်ထားရာတွင် ဒေသခံများကိုဦးစားပေးသင့်ပါသည်။ ပြီးခဲ့သောစီမံကိန်းတွင် အလုပ်အကိုင်များရရှိရန်အတွက် စီမံကိန်းရုံးသို့ တိုက်ရိုက်လျှောက်ထားခွင့်မရဘဲ ပွဲစားများမှတစ်ဆင့် လျှောက်လွှာတင်ကြရပါသည်။

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အဓိကဆွေးနွေးသည့် အချက်	အကြံပြုချက်များ၊ မေးမြန်းမှုများ
		အလုပ်အကိုင်များခန့်အပ်ခြင်းကို မည်သူကတာဝန်ယူမည်ကို သိလိုပါသည်။
၂။	လုပ်ခ၊ လစာ	လုပ်အားခများ၊ လစာများပေးရာတွင် နိုင်ငံတကာစံနှုန်းများဖြင့်ပေးမည်လား၊ သို့မဟုတ် မြန်မာစံနှုန်းများဖြင့်ပေးမည်လား ဆိုသည့်အချက်ကို သိရှိလိုပါသည်။ အစိုးရက သတ်မှတ်ထားသည့်နေ့စဉ်လုပ်အားခမှာ အလွန်နည်းပါးသဖြင့် မြန်မာစံနှုန်းဖြင့်ပေးပါက မြန်မာအလုပ်သမားများ အဆင်မပြေပါ။
၃။	အလုပ်နှင့်ပတ်သက်သော လေ့ကျင့်	လူငယ်များ ဤစီမံကိန်းတွင် ပါဝင်လုပ်ကိုင်နိုင်ရန်အတွက် ကျွမ်းကျင်မှုသင်တန်းများကို စီမံကိန်းအဆိုပြုသူက စီစဉ်ပေးသင့်ပါသည်။
၄။	သင်တန်း	ဒေသခံများအနေဖြင့် အလုပ်အကိုင်နေရာများအတွက် အရည်အချင်းပြည့်မီရန် ခက်ခဲပါမည်။ လေ့ကျင့်သင်တန်းပေးရန်လိုအပ်ပါသည်။ လိုအပ်သည့်သင်တန်းများပေးရန်အတွက် စီမံကိန်းအဆိုပြုသူ သို့မဟုတ် အစိုးရ၊ မည်သူကတာဝန်ယူမည်ကို သိရှိလိုပါသည်။
၅။	အလုပ်သမားပြဿနာ	အလုပ်သမားများနှင့်ပတ်သက်သော ပြဿနာများရှိလာပါက အလုပ်ရှင်များက တာဝန်ယူလေ့မရှိကြပါ။ အလုပ်ခွင်/အလုပ်သမားပြဿနာများ ဖြေရှင်းရန်အတွက် စီမံကိန်း အဆိုပြုသူက ရုံးခန်းဖွင့်ရန် အစီအစဉ် ရှိ မရှိ သိလိုပါသည်။
၆။	အလုပ်အကိုင်များ ဖန်တီးခြင်း	အအေးခန်းအလုပ်ရုံများ၊ အထည်ချုပ်စက်ရုံများကဲ့သို့သော စက်ရုံအလုပ်ရုံများ ထူထောင်ခြင်းဖြင့် အလုပ်အကိုင်များ ဖန်တီးပေးသင့်ပါသည်။
အသက်မွေးဝမ်းကျောင်း		
၇။	လျော်ကြေးငွေများ ပေးခြင်း	စီမံကိန်းကြောင့် အသက်မွေးဝမ်းကျောင်းလုပ်ငန်းဆုံးရှုံးခြင်းအတွက် လျော်ကြေးငွေများကို သင့်လျော်သောနည်းလမ်းများဖြင့် ပေးသင့်ပါသည်။ ထိခိုက်နစ်နာသူများကို အောက်ပါနည်းလမ်းများအတိုင်း လျော်ကြေးပေးသင့်ပါသည်။ ၁။ ဘဏ်စာရင်းများဖွင့်ပေးခြင်း။ ၂။ စီးပွားရေးလုပ်ငန်းများထူထောင်ပေးခြင်း။
လမ်းပန်းဆက်သွယ်ရေး		
၈။	လမ်းများပျက်စီးမှု	ဆောက်လုပ်ရေးအဆင့်တွင် စက်ယန္တရားကြီးများကြောင့် လမ်းများပျက်စီးမှု ဖြစ်လာနိုင်ပါသည်။ ထိုပျက်စီးသွားမည့်လမ်းများပြန်လည်ပြုပြင်ရန်အတွက် အစိုးရကတာဝန်ယူမည်လား၊ သို့မဟုတ် စီမံကိန်းကုမ္ပဏီကတာဝန်ယူမည်လား၊ မည်သူက တာဝန်ယူမည်ကို သိရှိလိုပါသည်။
၉။	အဆိုပြုလမ်းကို အသုံးပြုပိုင်ခွင့်	တည်ဆောက်ရန်အဆိုပြုထားသည့် ချဉ်းကပ်လမ်းသစ်ကို ဒေသခံများ အသုံးပြုနိုင်ခွင့် ရှိ မရှိ သိရှိလိုပါသည်။
၁၀။	လမ်းများ အဆင့်မြှင့်တင်ခြင်း	မဒေးကျွန်းပေါ်ရှိ လမ်းများအားလုံးသည် မြေသားလမ်းများဖြစ်ကြပါသည်။ ထိုလမ်းများကို ကွန်ကရစ် သို့မဟုတ် ကျောက်ခင်းလမ်းများအဖြစ် အဆင့်မြှင့်တင်ရန် လိုအပ်ပါသည်။
မြေယာပြဿနာများ		
၁၁။	မြေယာပိုင်ဆိုင်မှု	ရွာသူရွာသားများသည် မြေယာများကို ဘိုးစဉ်ဘောင်ဆက်လုပ်ကိုင်လာခဲ့ကြသော်လည်း ၎င်းတို့တွင် မြေယာအများအပြားအတွက် ပိုင်ဆိုင်မှုအထောက်အထား

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အဓိကဆွေးနွေးသည့် အချက်	အကြံပြုချက်များ၊ မေးမြန်းမှုများ
		စာရွက်စာတမ်းများမရှိကြပါ။
၁၂။		မြေယာပိုင်ဆိုင်မှုဥပဒေကို လက်ရှိဖြစ်ပေါ်နေသော အခြေအနေများနှင့်ကိုက်ညီမှု ရှိစေရန် ပြန်လည်သုံးသပ်သင့်ပါသည်။
၁၃။	ပြည့်စုံလုံလောက်သော ဥပဒေများမရှိခြင်း	လယ်သမားများ၏ပြဿနာများကိုဖြေရှင်းရန် သင့်လျော်၊ ကိုက်ညီသည့် ဥပဒေ နှင့် မူဝါဒများကင်းမဲ့နေပါသည်။ သင့်လျော်သောဥပဒေများ ပြဋ္ဌာန်းသင့်ပါသည်။
၁၄။	တိုက်ရိုက်ထိတွေ့ ဆွေးနွေးမှု	လျော်ကြေးမြေကိစ္စများနှင့်ပတ်သက်၍ စီမံကိန်းအဆိုပြုသူသည် လယ်ယာစိုက်ပျိုးသူများနှင့် တိုက်ရိုက်ထိတွေ့ဆက်ဆံဆွေးနွေးသင့်ပါသည်။
၁၅။	အဖြေရှာခြင်း (မြေဈေး/လျော်ကြေး)	မြေယာဈေးနှုန်းများ၊ လျော်ကြေးငွေကိစ္စများနှင့်ပတ်သက်၍ ဒေသခံများနှင့် ညှိနှိုင်းအဖြေရှာသင့်ပါသည်။ မြေယာလျော်ကြေးပြဿနာကို အစိုးရမဟုတ်သော ဒေသခံအဖွဲ့အစည်းများနှင့် စီမံကိန်းအဆိုပြုသူများအကြား ညှိနှိုင်းဆွေးနွေးမှုများ ဖြင့် ဖြေရှင်းသင့်ပါသည်။
ငါးဖမ်းလုပ်ငန်း		
၁၆။	ငါးဖမ်းသူများအတွက် လျော်ကြေးငွေ	ထိခိုက်မှုခံရသော ငါးဖမ်းသမားများကို လျော်ကြေးပေးရန်အတွက် မည်သည့် အစီအစဉ်များရေးဆွဲထားရှိသည်ကို သိရှိလိုပါသည်။
၁၇။	ငါးဖမ်းကွက်များ ဆုံးရှုံးခြင်း	ငါးဖမ်းကွက်များဆုံးရှုံးသွားပြီး အလုပ်လက်မဲ့ဖြစ်ကြရမည့် ငါးဖမ်းလုပ်ငန်းရှင် နှင့် ရေလုပ်သားများအတွက် မည်သည့်ပြန်လည်ပျိုးထောင်ရေးနည်းလမ်းများရှိသည်ကို သိရှိလိုပါသည်။
ကုမ္ပဏီများ၏ လူမှုရေးဆိုင်ရာတာဝန်ယူမှု (Corporate Social Responsibility - CSR)		
၁၈။	CSR ရန်ပုံငွေများနှင့် CSR လုပ်ငန်းများ	CSR ရန်ပုံငွေနှင့် CSR လုပ်ငန်းများ ခွဲဝေသတ်မှတ်ခြင်းကို အဆင့်အလိုက် (သာဓကအားဖြင့် ပထမငါးနှစ်၊ ဒုတိယငါးနှစ် စသည်ဖြင့်) အစီအစဉ်ရေးဆွဲထားသင့်ပါသည်။
ယခင်စီမံကိန်းများမှ ရရှိသောအတွေ့အကြုံများ		
၁၉။	တောင်ကိုဗြိတိန်ခြင်း	တရုတ်အမျိုးသားရေနံကော်ပိုရေးရှင်း (CNPC) က (ဂုန်းချိန်ရွာတွင်) တောင်တစ်တောင်ကိုဗြိတိန်လိုက်သဖြင့် လယ်သမား ၁၈ ဦး၏ လယ် ၂၁ ဧကခန့်အပေါ် ၄ ပေ ထူသောရွှံ့များဖြင့် ဖုံးလွှမ်းသွားခဲ့သည်။ အစိုးရဌာနများက ညှိနှိုင်းပေးသော် လည်း ပြေလည်မှုမရခဲ့ပါ။ ထို့အတွက် ဒေသခံပြည်သူများက အစိုးရဌာနများနှင့် ပူးပေါင်းကာ ကော်မတီတစ်ရပ်ဖွဲ့ပြီး CNPC သို့ တင်ပြခဲ့ပါသည်။ နောက်ဆုံးတွင် တရုတ်အရာရှိ (တာဝန်ရှိသူ) တစ်ဦးက ၎င်းပြဿနာ သည် ကုမ္ပဏီကြောင့်မဟုတ်ကြောင်း ပြောကြားခဲ့သည်။ ထို့ကြောင့် ထိုပြဿနာသည် ယခုအချိန်အထိ ရှင်းလင်းပြေလည်မှု မရှိသေးပါ။
၂၀။	CNPC လမ်း	CNPC သည် ပိုက်လိုင်းစီမံကိန်းအတွက် လမ်းခင်းထားသော်လည်း ထိုလမ်းမှာ ပျက်စီးနေပြီး ပြန်လည်ပြုပြင်ခြင်းမရှိသဖြင့် ဒေသခံပြည်သူများ အသုံးမပြုနိုင်ကြပါ။
အထွေထွေ		

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အဓိကဆွေးနွေးသည့် အချက်	အကြံပြုချက်များ၊ မေးမြန်းမှုများ
၂၁။	တရားမျှတမှု	ပတ်ဝန်းကျင်ဆိုင်ရာ၊ လူမှုရေးဆိုင်ရာ၊ စီးပွားရေးဆိုင်ရာနှင့် အသက်မွေးဝမ်းကျောင်းဆိုင်ရာကဏ္ဍများတွင် ပြဿနာများဖြစ်လာပါက "တရားမျှတမှု၊ တာဝန်ခံမှုနှင့် ပွင့်လင်းမြင်သာမှု" အတွက် မည်သည့်တာဝန်ယူမည်ကို သိရှိလိုပါသည်။
၂၂။	တစ်ဆင့်ခံစာချုပ်ချုပ်သူများ	စီမံကိန်းအဆိုပြုသူသည် ဆောက်လုပ်ရေးနှင့်လုပ်ငန်းလည်ပတ်မှု အဆင့်ဆင့်ကို တစ်ဆင့်ခံတာဝန်ယူမည့် (sub-contractors) များသို့ချပေးလျှင် ထိုသူများနှင့် ပတ်သက်၍ ပြဿနာများရှိလာပါက စီမံကိန်းအဆိုပြုသူက တာဝန်ယူရန်လိုအပ်သည်။
၂၃။	တည်ဆဲဥပဒေ	၂၀၁၂-ခုနှစ်၊ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများစီမံခန့်ခွဲရေးဥပဒေသည် လယ်သမားများကို အကာအကွယ်ပေးရမည့်အစား ပိုမိုဒုက္ခရောက်စေပါသည်။

အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးပွဲ၊ ဒုတိယနေ့ဆွေးနွေးပွဲမှအဓိကတွေ့ရှိချက်များ (မဒေးကျွန်း)

အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်း ဒုတိယနေ့အစည်းအဝေး ဆွေးနွေးမှုများအနက်မှ အဓိကတွေ့ရှိချက်များကို အောက်ပါဇယားတွင်ဖော်ပြထားပါသည်။

ဇယား ၇။ သက်ဆိုင်သူများ၏ ဆွေးနွေးမှုများမှ အဓိကတွေ့ရှိချက်များ

စဉ်	အဓိကဆွေးနွေးသည့် အချက်	အကြံပြုချက်များ၊ မေးမြန်းမှုများ
အလုပ်အကိုင်အခွင့်အလမ်းဆိုင်ရာ		
၁။	အလုပ်အကိုင်များ ခန့်ထားခြင်း	ရေနက်ဆိပ်ကမ်းစီမံကိန်းသည် မဒေးကျွန်းပေါ်တွင် တည်ရှိသဖြင့် မဒေးကျွန်းပေါ်တွင် နေထိုင်သူများအား အလုပ်အကိုင်များကို ဦးစားပေးခန့်ထားသင့်ပါသည်။
၂။		မဒေးကျွန်းပေါ်တွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ရှိ မရှိ သိရှိလိုပါသည်။
၃။	အလုပ်အကိုင် အမျိုးအစားများ	ပြီးခဲ့သည့်စီမံကိန်းအတွေ့အကြုံအရ ဒေသခံပြည်သူများသည် သဲနှင့်ကျောက်စရစ်များ သယ်ယူခြင်းကဲ့သို့သော အလုပ်ကြမ်းများကိုသာ ရရှိမည်ဖြစ်ပါသည်။ မဒေးကျွန်းဒေသခံများအတွက် မည်ကဲ့သို့သော အလုပ်အကိုင်အမျိုးအစားများ ရနိုင်ပါသနည်း။ ကျွမ်းကျင်မှုမရှိသောအလုပ်သမားများကို ဦးစားပေးအဖြစ် မည်သို့စဉ်းစားမည်နည်း။
အသက်မွေးဝမ်းကျောင်း		
၄။	ငါးဖမ်းလုပ်ငန်း	မဒေးကျွန်းတွင်နေထိုင်သူ ၈၀% ခန့်သည် ငါးဖမ်းလုပ်ငန်းကို လုပ်ကိုင်ကြသည်။ သစ်ပုတ်တောင်၊ စစ်တော၊ စေမော်၊ ကုလားဘာတောင်ကျေးရွာများနှင့် အခြားကျေးရွာများမှ ဒေသခံများသည် ငါးဖမ်းလုပ်ငန်းကို မှီခိုအားထားကြသည်။ ၎င်းတို့အနေဖြင့် ငါးဖမ်းကွက်များဆုံးရှုံးပါက ၎င်းတို့၏လိုအပ်ချက်များကို မည်ကဲ့သို့ ဖြည့်ဆည်းပေးမည်နည်း။
လမ်းပန်းဆက်သွယ်ရေး		
၅။	လမ်းများ	မဒေးကျွန်းပေါ်တွင်ရှိသော လမ်းများအားလုံးသည် ရွှံ့လမ်းများဖြစ်ကြပါသည်။ ထိုလမ်းများကို အဆင့်မြှင့်တင်ရန် မည်သည့်တာဝန်ယူမည်နည်း။ ကျွန်းပေါ်ရှိ ကျေးရွာအချင်းချင်းဆက်သွယ်သောလမ်းများအား အဆင့်မြှင့်တင်ရန် အစီအစဉ်

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အဓိကဆွေးနွေးသည့် အချက်	အကြံပြုချက်များ၊ မေးမြန်းမှုများ
		ရှိ၊ မရှိ သိရှိလိုပါသည်။
မြေယာပြဿနာများ		
၆။	တစ်ဧကလျော်ကြေး	လျော်ကြေးငွေများပေးမည်ဆိုပါက တစ်ဧကလျှင်ငွေကြေးမည်မျှပေးမည်ကို သိရှိလိုပါသည်။
၇။	လယ်ယာမြေများ ဆုံးရှုံးခြင်း	လမ်းနှင့်တံတားများဖောက်လုပ်သောကြောင့် မြေယာများဆုံးရှုံးခြင်းအတွက် မည်သည့် တာဝန်ယူမည်ကိုသိရှိလိုပါသည်။
၈။	လယ်ယာမြေဈေးများကို ချယ်လှယ်ခြင်း	အခွင့်အရေးသမားများက အနာဂတ်တွင် မြေဈေးများကောင်းလာမည်ဟုမျှော်လင့်လျက် လယ်မြေများကိုဝယ်ယူခဲ့ကြသည်။ ဒေသခံပြည်သူများအနေဖြင့် နစ်နာကြေးများရရှိရန် အခွင့်အရေးဆုံးရှုံးကြမည်ဖြစ်ပါသည်။
ကုမ္ပဏီများ၏ လူမှုရေးဆိုင်ရာတာဝန်ယူမှု (Corporate Social Responsibility - CSR)		
၉။	CSR ရန်ပုံငွေ	စီမံကိန်းအဆိုပြုသူသည် CSR ရန်ပုံငွေမှ ပထမဦးဆုံးအတွက် တစ်နှစ်လျှင် အမေရိကန်ဒေါ်လာတစ်သန်းလျာထားကြောင်း သိရှိရပါသည်။ ထိုရန်ပုံငွေအား ဖွံ့ဖြိုးရေးလုပ်ငန်းများအတွက် ပြည်သူလူထုလက်ထဲသို့ တိုက်ရိုက်လွှဲပြောင်းပေးမည့်အစီအစဉ် ရှိ၊ မရှိ သိလိုပါသည်။
၁၀။		မဒေးကျွန်းဖွံ့ဖြိုးတိုးတက်ရေးအတွက် CSR ရန်ပုံငွေကို ပွင့်လင်းမြင်သာစွာ ချပြရန်လိုအပ်ပါသည်။ CSR ရန်ပုံငွေကို ဒေသခံများလက်သို့ တိုက်ရိုက်လွှဲပြောင်းပေးသင့်ပါသည်။
၁၁။	လျှပ်စစ်မီးရရှိရေး	မဒေးကျွန်းပေါ်ရှိ ကျောက်မော်ကြီးနှင့်ပန်းထိမ်ဆည်ကျေးရွာများတွင် လျှပ်စစ်မီး မရရှိကြသေးပါ။ ထိုရွာနှစ်ရွာအား လျှပ်စစ်ဓာတ်အားဖြန့်ဝေပေးရန် အစီအစဉ် ရှိပါသလား။
ယခင်စီမံကိန်းများမှ ရရှိသောအတွေ့အကြုံများ		
၁၂။	ငါးဖမ်းလုပ်ငန်း	CNPC စီမံကိန်းကြောင့် ရေလုပ်သားများသည် ၎င်းတို့၏ ငါးဖမ်းကွက် တစ်ဝက်ခန့် ဆုံးရှုံးခဲ့ကြရသည်။ အဆိုပြုထားသော ရေနက်ဆိပ်ကမ်းစီမံကိန်းကို စတင်လိုက်လျှင် ရေလုပ်သားများသည် ၎င်းတို့၏ငါးဖမ်းကွက်များအားလုံး ဆုံးရှုံးသွားမည်ဖြစ်ပါသည်။
၁၃။	အလုပ်အကိုင်ရရှိမှု	CNPC စီမံကိန်းတွင် လူတစ်ဦးအလုပ်ရရန်အတွက် ကြားပွဲစားကို အလုပ်တစ်ခုလျှင် ငွေကျပ်သိန်း ၃၀ ပေးရသည်။
၁၄။	CNPC ၏ ကတိကဝတ်များမတည်ခြင်း	CNPC သည် အလုပ်အကိုင်များပံ့ပိုးပေးမည်ဟု ကတိပြုခဲ့သော်လည်း လက်တွေ့တွင်မူ ဖြစ်မလာခဲ့ပါ။
၁၅။	မကျေနပ်ချက်များ	ရေနံပိုက်လိုင်းတည်ဆောက်ရာတွင် လယ်ယာမြေများ သိမ်းဆည်းခံရခြင်း၊ ရေလုပ်ငန်းလုပ်သူများ ငါးဖမ်းကွက်များဆုံးရှုံးခြင်း စသည့် မကျေနပ်ချက်များ ယနေ့ အထိရှိနေပါသေးသည်။
အတွေ့တွေ		
၁၆။	ကူးတို့ဆိပ်ပျောက်ကွယ်မှု	ရေနက်ဆိပ်ကမ်းတည်ဆောက်သည့်အခါ မဒေးကျွန်းရှိ လက်ရှိကူးတို့ဆိပ်သည် ပျောက်ကွယ်သွားမည်ဖြစ်ပါသည်။ လက်ရှိကူးတို့ဆိပ် ပျောက်ဆုံးသွားပါက မဒေးကျွန်းတွင် စက်လှေနှင့်သင်္ဘောငယ်များဆိုက်ကပ်နိုင်ရန်အတွက် ဆိပ်ခံတံတား အသစ်တစ်ခု ဆောက်လုပ်ပေးရန်လိုအပ်မည်ဖြစ်ပါသည်။

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အဓိကဆွေးနွေးသည့် အချက်	အကြံပြုချက်များ၊ မေးမြန်းမှုများ
၁၇။	ကျန်းမာရေး စောင့်ရှောက်မှု	မဒေးကျွန်းပေါ်တွင် အစိုးရဆေးခန်းတစ်ခု တည်ရှိနေသော်လည်း ကျန်းမာရေး စောင့်ရှောက်မှုအတွက် ဝန်ထမ်းများမရှိပါ။
၁၈။	ကျောင်းအဆောက်အဦ များ ဆောက်လုပ်ခြင်း	မိုးသည်းထန်စွာရွာသွန်းပါက ကျွန်းပေါ်တွင်ရေကြီးရေလျှံမှုများ ဖြစ်ပွားတတ်ပြီး ကျောင်းများသို့ ရေများဝင်တတ်ပါသည်။ ကလေးများအတွက်ကျောင်းဆောင် အသစ်များဆောက်လုပ်ရန် အစီအစဉ် ရှိ မရှိ သိရှိလိုပါသည်။
၁၉။	ကိုယ်စားပြုမှု	ဆုံးရှုံးနစ်နာမှုများကို ဆွေးနွေးတင်ပြနိုင်ရန်အတွက် ကျွန်းပေါ်တွင်နေထိုင်သူများ အထဲမှ ကိုယ်စားလှယ်တစ်ဦးကို ရွေးချယ်သင့်ပါသည်။

အစိုးရဌာနများနှင့် ထိတွေ့ဆက်ဆံခြင်း

အစိုးရဌာနများသည်လည်း အဓိကပါဝင်ပတ်သက်သူများဖြစ်ကြပါသည်။ MSR Consortium သည် အစိုးရ အဖွဲ့အစည်း ၃၁ ခုမှ ဌာနဆိုင်ရာများ၊ လုပ်ငန်းရှင်များနှင့် အဖွဲ့အစည်းများမှ တာဝန်ရှိသူ ၉၅ ဦးနှင့် တွေ့ဆုံ ဆွေးနွေးခဲ့ပါသည်။ ဤရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်ရာ တွင် လိုအပ်သည့်အချက်အလက်များကိုတောင်းခံခြင်းများနှင့် လူတွေ့မေးမြန်းခြင်းများကိုလည်း ပြုလုပ်ခဲ့ပါ သည်။ အစိုးရဌာနများမှ ကိုယ်စားလှယ်များသည် အလုပ်ရုံဆွေးနွေးပွဲများနှင့် အများပြည်သူနှင့်တွေ့ဆုံ ဆွေးနွေးပွဲများတွင် တက်ရောက်ခဲ့ကြပြီး၊ ၎င်းအစိုးရအရာရှိများ၏ ဆွေးနွေးမှုများမှ အဓိကတွေ့ရှိချက်များကို အောက်ပါဇယားတွင် ဖော်ပြထားပါသည်။

ဇယား ၈။ အစိုးရဌာနဆိုင်ရာအရာရှိများနှင့်ဆွေးနွေးမှုများမှ အဓိကတွေ့ရှိချက်များ

စဉ်	အကြောင်းအရာ/ ပြဿနာများ	ဆွေးနွေးခြင်း / အကြံပြုခြင်း
၁။	ဝန်ဆောင်မှု လုပ်ငန်းများအတွက် အစိုးရဌာနများ ဘတ်ဂျက်လိုအပ်မှု	ရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် မြေယာစစ်တမ်းကို လယ်ယာမြေစီမံခန့်ခွဲမှုနှင့် စာရင်းအင်းဦးစီးဌာနက ၂၀၁၄ ခုနှစ်မှ ၂၀၁၆ ခုနှစ်အထိ ဆောင်ရွက်ခဲ့ပါသည်။ သမ္မတဦးသိန်းစိန်အစိုးရလက်ထက် (၂၀၁၁-၂၀၁၅) အတွင်း ပြုလုပ်ခဲ့ပါသည်။ လယ်ယာမြေစစ်တမ်းအတွက် ဌာနက ငွေကျပ်သိန်း ၄၀ သုံးစွဲခဲ့ရပါသည်။ အစိုးရ နှင့်စီမံကိန်းအဆိုပြုသူ နှစ်ဘက်စလုံးမှ ထိုဝန်ဆောင်မှုအတွက် ဘတ်ဂျက်ငွေ ထုတ်ပေးပါ။ ထိုအချိန်မှစ၍ လုပ်ငန်းရပ်ဆိုင်းခဲ့ပြီး လွန်ခဲ့သည့် နှစ်နှစ်ခန့်က ပြန်လည်စတင်ခဲ့သည်။ အဓိကအချက်။ ရေနက်ဆိပ်ကမ်းလုပ်ငန်းစီမံကိန်းအတွက် ဝန်ဆောင်မှုပေးနေ သည့် အစိုးရဌာနများအတွက် သီးသန့်ရန်ပုံငွေမရှိပါ။
၂။	လက်ရှိအခြေအနေ များ	မြေယာဈေးကစားခြင်း။ ၂၀၁၆ ခုနှစ်တွင် လယ်မြေဈေးမှာ တစ်ဧကလျှင် ငွေကျပ် ၂၅ သိန်းဖြစ်သည်။ ကျောက်ဖြူအထူးစီးပွားရေးဇုန် ဖွံ့ဖြိုးတိုးတက်ရေး စီမံချက်အတွက် လယ်မြေကွက်များ ဝယ်ယူကြောင်း ကြားသိရသောအခါတွင် အချို့သော စီးပွားရေး လုပ်ငန်းရှင်များသည် ဤဒေသသို့ရောက်လာကြပြီး မြေယာများ ဝယ်ယူခဲ့ကြသည်။ မြေအသုံးချမှု။ လက်ရှိတွင် တောင်သူများသည် မြေလွတ်နှင့်ပလပ်မြေများတွင် လုပ်ကိုင်ခွင့်ရရှိရန် တရားဝင်လျှောက်ထားခြင်းမရှိဘဲ လုပ်ကိုင်လျက်ရှိကြပါ သည်။ လျှောက်လွှာတင်မထားပါက ပုံစံ-၇ ထုတ်ပေးမည်မဟုတ်ပါ။ သက်ဆိုင်ရာ မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာနက လယ်ယာမြေ သိမ်းဆည်းမှုအား

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အကြောင်းအရာ/ ပြဿနာများ	ဆွေးနွေးခြင်း / အကြံပြုခြင်း
		<p>ဆောင်ရွက်မည်ဖြစ်ပါသည်။</p> <p>သီးနှံစိုက်ပျိုးစရိတ်။ တောင်သူများသည် စိုက်ပျိုးရေးလုပ်ငန်းလုပ်ကိုင်ရာတွင် လက်ရှိအခက်အခဲများကြုံတွေ့နေကြရပါသည်။ ၎င်းတို့တွင် အရင်းအနှီး၊ စက်ယန္တရား၊ အလုပ်သမားများ မရှိကြပါ။ ၎င်းတို့၏ထွက်ကုန်များကို ရောင်းချသောအခါ သွင်းအားစုစရိတ်များကြီးမြင့်မှုကြောင့် အမြတ်နည်းနည်းပဲ ရကြပါသည်။</p> <p>ယခင်စီမံကိန်းမှ ကောင်းကျိုးသက်ရောက်မှု။ ယခင်စီမံကိန်း (CNPC) ကြောင့် မဒေးကျွန်းရှိကျေးရွာအချို့တွင် လျှပ်စစ်မီးနှင့်ရေရရှိပြီး အချို့လမ်းပိုင်းကို ကွန်ကရစ်ဖြင့် ခင်းထားသည်။</p> <p>ရေနက်ဆိပ်ကမ်းအတွက် လျှပ်စစ်ချိတ်ဆက်မှု။ မြို့နယ်လျှပ်စစ်ဓာတ်အားပေးရေးလုပ်ငန်း (ESE) သည် 150-MW ဓာတ်အားပေးစက်ရုံခွဲတစ်ခု တည်ဆောက် ခဲ့ပြီး သဘာဝဓာတ်ငွေ့သုံး 135-MW ဓာတ်အားပေးစက်ရုံခွဲတစ်ခုကို ၂၀၂၃ ခုနှစ် ဩဂုတ်လတွင် ပြီးစီးရန်လျာထားသည်။ မဒေးကျွန်းတွင် 40-MP 66/11 လိုင်းခွဲပါရှိပါသည်။ ပန်းထိမ်ဆည်နှင့် ကျောက်မော်ကြီးရွာများမှလွဲ၍ ရွာအားလုံး မီးရရှိကြသည်။ 11 KV ထုတ်ယူရန် လိုအပ်နေပါသေးသည်။</p> <p>ပတ်ဝန်းကျင်ဆိုင်ရာ သုတေသန။ သံဇစ်မြစ်ရေနှင့်ပတ်သက်၍ မြို့နယ် ECD မှ နမူနာရေများကို စစ်ဆေးသုံးသပ်ပြီး ရလဒ်များကို ၂၀၁၈ ခုနှစ်တွင် အထက်အဆင့်သို့ တင်ပြခဲ့ပါသည်။ ရေနှင့်ပတ်သက်၍ စဉ်ဆက်မပြတ်စောင့်ကြည့်မှု အစီအစဉ်လည်းရှိနေပါသေးသည်။</p> <p>ဤဌာနသည် ဒေသခံပြည်သူများ၊ လူသားချင်းစာနာထောက်ထားမှုဆိုင်ရာအဖွဲ့အစည်းများနှင့်အတူ ကျောက်ဖြူမြို့သို့သော်လည်းကောင်း စနေနေ့တိုင်း သန့်ရှင်းရေးလှုပ်ရှားမှုကို လုပ်ဆောင်နေပါသည်။</p> <p>မြို့နယ် ECD သည် ကျောက်ဖြူမြို့ရှိ လေထုအရည်အသွေးဆိုင်ရာ အချက်အလက်များကို ၂၀၂၀ ခုနှစ်မှစတင်၍ လစဉ်တိုင်းတာမှတ်တမ်းတင်ထားပါသည်။</p> <p>ပတ်ဝန်းကျင်ဆိုင်ရာ ဆက်စပ်ဘာသာရပ်များအတွက် အခြေခံအချက်အလက် စုဆောင်းခြင်းကို ကနဦးလုပ်ဆောင်နေပြီး အဆိုပါ အချက်အလက်နှင့် တွေ့ရှိချက်များသည် ထိခိုက်ဆန်းစစ်မှု နှင့် အကျိုးသက်ရောက်မှု အကဲဖြတ်ချက် အထောက်အကူပြုရန် ရည်ရွယ်ပါသည်။ ဤသို့ဆောင်ရွက်ရာတွင် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ သဘောထားမှတ်ချက်နှင့် လမ်းညွှန်ချက်များကိုပါ ရယူပြီးနောက် အခြေခံအချက်အလက် စုဆောင်းခြင်းလုပ်ငန်းစဉ်ကို ပြည့်ပြည့်စုံစုံ ကောက်ယူသွားရန် စီစဉ်ထားပါသည်။</p>
၃။	အသက်မွေးဝမ်းကျောင်းဆုံးရှုံးမှုများအတွက် လျော်ကြေးငွေ	<p>အကြံပြုချက်။ အသက်မွေးဝမ်းကျောင်းဆုံးရှုံးမှုများအတွက် လျော်ကြေးပေးရန် အကောင်းဆုံးနည်းလမ်းမှာ အလုပ်အကိုင်များဖန်တီးပေးခြင်းဖြစ်သည်။ သို့သော် ရေနက်ဆိပ်ကမ်းလုပ်ငန်းများသည် အလုပ်အကိုင်များစွာကို ပေးစွမ်းနိုင်မည် မဟုတ်ပါ။ စက်ရုံအလုပ်ရုံများကသာ အလုပ်အကိုင်အများအပြားကို ပေးစွမ်းနိုင်လိမ့်မည်ဟု မျှော်လင့်ပါသည်။</p> <p>မြေလွတ်မြေရိုင်းနှင့်ပလပ်မြေများတွင် လုပ်ကိုင်နေသူများ၊ မှတ်ပုံတင်ထားသူများ၊ ဘိုးဘွားပိုင်မြေများတွင်လုပ်ကိုင်နေသူများ၊ ပုစွန်မွေးမြူရေးကန်များ လုပ်ကိုင်နေသူများ စသည်တို့ရှိကြပါသည်။</p> <p>လယ်ယာအချက်အလက်များကို စုဆောင်းပြီးနောက် ဈေးကွက်ပေါက်ဈေးနှုန်းများ</p>

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အကြောင်းအရာ/ ပြဿနာများ	ဆွေးနွေးခြင်း / အကြံပြုခြင်း
		ဖြင့် လျော်ကြေးပေးသင့်သည်။ အမှန်တကယ်ထိခိုက်ခံစားရသူများနှင့် ထိခိုက်လွယ်သူများကို ဦးစားပေးဆောင်ရွက်ရမည်။
၄။	ကောင်းကျိုးသက်ရောက်မှုများ	မဒေးကျွန်းတံတားကို တည်ဆောက်ပေးခြင်းဖြင့် ကျွန်းတွင်နေထိုင်သူများသည် အထူးသဖြင့် ကျန်းမာရေးကိစ္စများရှိပါက မြို့တွင်းသို့ လွယ်ကူစွာသွားလာနိုင်မည် ဖြစ်ပါသည်။ ရွာများတွင်လည်း ၂၄ နာရီ မီးရရှိပါမည်။ တံတားတည်ဆောက်မည်ဆိုပါက မွေးမြူရေးနှင့်ကုသရေးဦးစီးဌာနအတွက် သွားလာရေးအဆင်ပြေနိုင်မည်။
၅။	မကျေနပ်ချက်များ	<p>အကြံပြုစာထည့်ပုံကို အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာနတွင် ထားရှိသင့်ပါသည်။ ကျန်းမာရေး၊ စိုက်ပျိုးရေး၊ သစ်တော၊ သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေး၊ တိရစ္ဆာန်မွေးမြူရေးနှင့်ကုသရေး စသည်တို့နှင့်သက်ဆိုင်သည့် ဌာနဆိုင်ရာဝန်ထမ်းများ ပါဝင်သော ကော်မတီတစ်ရပ်ကိုဖွဲ့စည်း၍ မကျေနပ်ချက်များကို ဖြေရှင်းသင့်ပါသည်။ ဆင်းရဲနွမ်းပါးသောမိသားစုများနှင့် မသန်စွမ်းသူများသည် ၎င်းတို့၏တိုင်ကြားချက်များကို မည်ကဲ့သို့တိုင်ကြားရမည်ကို မသိကြပါ။ မကျေနပ်ချက်တိုင်ကြားမှုနှင့်ပတ်သက်၍ ထိုသူများအား ကျေးရွာအုပ်စု/ရပ်ကွက်အုပ်ချုပ်ရေးမှူးရုံးများက ကူညီသင့်သည်။</p> <p>အကြံပြုစာထည့်ပုံစနစ်သည် ယုံကြည်ရမည်မဟုတ်ပေ။ ကုမ္ပဏီသို့ တိုင်ကြားစာပေးပို့ရန် လိုအပ်ပါသည်။ တိုင်ကြားသူက အမည်မဖော်ပြဘဲ တိုင်ကြားရပါ။ တိုင်ကြားသူအား တာဝန်ခံအရာရှိမှ ဆက်သွယ်နိုင်စေရန် အချက်အလက်များကိုလည်း ဖော်ပြရန်လိုအပ်သည်။</p> <p>ပြည်သူများက ၎င်းတို့၏မကျေနပ်ချက်စာများကိုတင်ပြနိုင်ရန် စီမံကိန်း အဆိုပြုသူသည် ကျောက်ဖြူတွင်ရုံးခန်းဖွင့်လှစ်ရမည်ဖြစ်သည်။ တိုင်ကြားသူသည် စီမံကိန်းကုမ္ပဏီတာဝန်ခံအရာရှိမှ ပြန်လည်ဆက်သွယ်နိုင်စေရန် အချက်အလက်များအပြည့်အစုံ ပေးရပါမည်။</p> <p>ရုံးတွင် CCTV တပ်ဆင်ရပါမည်။ ကုမ္ပဏီနှင့်ပြည်သူများအကြားတွင် မရိုးသားသည့် ကြားခံလူများမရှိသင့်ပါ။</p> <p>အကြံပြုစာထည့်ပုံအား မည်သည့်နေရာတွင်မဆို ထားရှိနိုင်ပါသည်။ အရေးကြီးဆုံးမှာ ကုမ္ပဏီကအရေးယူရန်သာလိုအပ်ပါသည်။ စီမံကိန်းကုမ္ပဏီကို ဆက်သွယ်ပေးမည့် လူအများကိုကိုယ်စားပြုသောကော်မတီတစ်ရပ်ရှိသင့်ပါသည်။</p> <p>ထိခိုက်နစ်နာသူများနှင့် စီမံကိန်းကုမ္ပဏီကြားတွင် တရားရေးဆိုင်ရာဝန်ဆောင်မှုကော်မတီတစ်ရပ် ရှိသင့်သည်။</p> <p>အကြံပြုစာထည့်ပုံများ ထားရှိမည့်အစား ရုံးခန်းဖွင့်လှက် တာဝန်ခံတစ်ဦး ထားရှိပါက ပိုမိုအဆင်ပြေပါသည်။ အကယ်၍ ဤပုဂ္ဂိုလ်သည် စီမံကိန်းရုံးမှ ဖြစ်ပါက ဘက်လိုက်မှု ရှိနိုင်သည်။ လူထုကိုယ်စားလှယ်နှင့် အစိုးရဌာနများ၊ CSO များ စသည်တို့ဖြင့် ဖွဲ့စည်းထားသည့် ကော်မတီလည်း ရှိသင့်သည်။</p>

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

ဒေသဆိုင်ရာပညာရှင်များအဖွဲ့အလုပ်ရုံဆွေးနွေးပွဲ

MSR Consortium အဖွဲ့က နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအစီရင်ခံစာ (Scoping Report) အတွက် ဆောင်ရွက်ခဲ့ သည့်လုပ်ငန်းစဉ်များနှင့်ပတ်သက်၍ရှင်းလင်းတင်ပြသည့် အလုပ်ရုံဆွေးနွေးပွဲတစ်ခုကို ရန်ကုန် မြို့ MSR ရုံးချုပ်တွင် ၂၀၂၂ ခုနှစ်၊ နိုဝင်ဘာလ ၂၂ ရက်နေ့မှ ၂၅ ရက်နေ့ထိ ကျင်းပပြုလုပ်ခဲ့ပါသည်။ ယင်းအလုပ်ရုံ ဆွေးနွေးပွဲတွင် ကျောက်ဖြူမြို့နယ်မှ ဒေသဆိုင်ရာပညာရှင်အဖွဲ့ဝင်များက အကြံပြုချက်များနှင့် သဘောထားအမြင်များကို ဆွေးနွေးခဲ့ကြပါ သည်။ ၄-ရက်ကြာပြုလုပ်ခဲ့သည့် ထိုအလုပ်ရုံဆွေးနွေးပွဲ၏ အဓိကရည်ရွယ်ချက်မှာ အောက်ပါအတိုင်း ဖြစ်ပါသည်။

- (က) မဒေးကျွန်းရေနက်ဆိပ်ကမ်းဆောက်လုပ်ခြင်း၊ ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းဆောက်လုပ် ခြင်းနှင့် ၁၅-ကီလိုမီတာအရှည်လမ်းနှင့်တံတားဆောက်လုပ်ခြင်းဟူသော ရေနက်ဆိပ်ကမ်း စီမံကိန်း၏ အစိတ်အပိုင်းသုံးခုအတွက် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအစီရင်ခံစာ (မူကြမ်း) ကို ရှင်းလင်းတင်ပြခြင်း
- (ခ) ကျောက်ဖြူဒေသခံပညာရှင်များက စီမံကိန်းအစိတ်အပိုင်းသုံးခုအတွက် ရေးသားထားသော အစီရင်ခံစာပါအကြောင်းအရာများကို အခန်းကဏ္ဍအလိုက် အကြံပြုဆွေးနွေးခြင်း

အလုပ်ရုံဆွေးနွေးပွဲတွင် ဒေသခံပညာရှင်များကတင်ပြသော အကြံပြုချက်များ

ကျောက်ဖြူမြို့နယ်မှ အဖွဲ့အစည်းအသီးသီး၏ ဒေသခံပညာရှင်များက ကျောက်ဖြူအထူးစီးပွားရေးဇုန် ရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် လူမှုစီးပွားရေးကဏ္ဍနှင့်ပတ်သက်သည့် စိုးရိမ်ပူပန်မှုများနှင့် အကြံပြု ဖြေရှင်းချက်များကို အောက်ပါအတိုင်း အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

ဇယား ၉ - ဒေသခံပညာရှင်များအလုပ်ရုံဆွေးနွေးပွဲမှ အကြံပြုချက်များ

စဉ်	အုပ်စု	အကြံပြုကောက်နုတ်ချက်
၁။	နိုင်ငံရေးပါတီများ	<ul style="list-style-type: none"> ◆ ကျောက်ဖြူရေနက်ဆိပ်ကမ်းစီမံကိန်းမှ ရရှိလာမည့်ဝင်ငွေ၏အစိတ်အပိုင်းတစ်ခု ကို ကျောက်ဖြူဒေသဖွံ့ဖြိုးရေးလုပ်ငန်းများအတွက် သီးသန့်လျာထားအသုံးပြု သင့်ပါသည်။ ထိုသို့ဆောင်ရွက်ပေးခြင်းအားဖြင့် ဒေသခံပြည်သူလူထု၏ ထောက်ခံ အားပေးမှုကိုလည်း ပိုမိုရရှိမည်ဖြစ်ပါသည်။
၂။	နိုင်ငံတကာအစိုးရ မဟုတ်သောအဖွဲ့ အစည်းများနှင့် လူမှုရေးအဖွဲ့အစည်း များ	<ul style="list-style-type: none"> ◆ မြေယာလျော်ကြေးငွေကိစ္စအား ဒေသခံပြည်သူများနှင့် သက်ဆိုင်ရာအဖွဲ့အစည်း များအား ပါဝင်စေလျက် ပွင့်လင်းမြင်သာစွာ ဆောင်ရွက်ဖြေရှင်းသင့်ပါသည်။ ◆ အလုပ်အကိုင်များခန့်ထားရာတွင် နိုင်ငံခြားသားများနှင့်ဒေသခံများအကြား ခွဲခြား မှုမရှိဘဲ တရားမျှတမှုဖြင့် အခွင့်အရေးများတန်းတူပေးသင့်ပါသည်။ ◆ မကျေနပ်ချက်များနှင့်ပတ်သက်သည့် တိုင်ကြားချက်များအား ဒေသခံဦးဆောင်သူ များနှင့်သက်ဆိုင်ရာသက်ဆိုင်ရာအဖွဲ့အစည်းများအား ပါဝင်စေလျက် ဖြေရှင်းသင့် ပါသည်။ ◆ စီမံကိန်းအဆိုပြုသူက ၎င်း၏တာဝန်ယူမှု၊ တာဝန်ခံမှုကို ပြည်သူများသိအောင် စနစ်တကျချပြရမည်။
၃။	မြို့နယ်နှင့် ကျေးရွာ	<ul style="list-style-type: none"> ◆ ရေနက်ဆိပ်ကမ်းစီမံကိန်းကြီးကို အများပြည်သူက ကြိုဆိုထောက်ခံကြသော်လည်း ယခင်စီမံကိန်း (CNPC) ကဲ့သို့ ပွင့်လင်းမြင်သာမှုမရှိ၊ တာဝန်ယူမှုမရှိဘဲ အကောင်

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

စဉ်	အုပ်စု	အကြံပြုကောက်နုတ်ချက်
	ရပ်မိရပ်ဖများ	အထည်ဖော်သွားမည်ကို စိုးရိမ်နေကြသည်။
၄။	မဒေးကျွန်းဒေသခံများ	<ul style="list-style-type: none"> စီမံကိန်းအကောင်အထည်ဖော်သည့်ကာလတစ်လျှောက်လုံးတွင် ဒေသခံဦးဆောင်သူများနှင့် ပူးပေါင်းဆောင်ရွက်မှုများ ရှိနေရမည်။ CSR လုပ်ငန်းများအား အစီအစဉ်များရေးဆွဲ၍ အကောင်အထည်ဖော်ရာတွင် ပွင့်လင်းမြင်သာမှုရှိစွာဖြင့် ဒေသခံအဖွဲ့နှင့် ပူးပေါင်းဆောင်ရွက်စေလိုပါသည်။
၅။	အစိုးရ	<ul style="list-style-type: none"> ကျောက်ဖြူမြို့နယ်တွင် စီမံကိန်းများနှင့်ပတ်သက်၍ မကျေနပ်ချက်များကို ဒေသခံများက လာရောက်အသိပေးတိုင်ကြားခြင်းကိုလက်ခံရယူပြီး အခြားသောအကျိုးသက်ဆိုင်သူများနှင့်ညှိနှိုင်းကာ ကူညီဖြေရှင်းပေးပါမည်။

၇။ နိဂုံးချုပ်နှင့် အကြံပြုချက်များ

ကျောက်ဖြူအထူးစီးပွားရေးဇုန် ရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ဆိုင်ရာ၊ လူမှုစီးပွားဆိုင်ရာ ထိခိုက်မှုများ အား ဆန်းစစ်သုံးသပ်ရာတွင် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ရန်အတွက် ဤအစီရင်ခံစာကို ရေးသားပြုစုပါသည်။ မဒေးကျွန်းရေနက်ဆိပ်ကမ်းဆောက်လုပ်ရေး၊ ရမ်းဗြဲကျွန်းရေနက်ဆိပ်ကမ်းဆောက်လုပ်ရေးနှင့် ၁၅-ကီလိုမီတာလမ်းနှင့် တံတားဆောက်လုပ်ခြင်းတို့သည် စီမံကိန်း၏ အစိတ်အပိုင်းများ ဖြစ်ကြသည့်အလျောက် ၎င်းတို့နှင့်ပတ်သက်သည့် လေ့လာမှုများမှ တွေ့ရှိချက်များ၊ ကောက်ချက်ချမှုများနှင့် အကြံပြုချက်အများစုသည် သဘောတရားအားဖြင့် ဆင်တူကြပါသည်။ ထိုတွေ့ရှိချက်များ၊ ကောက်ချက်ချမှုများနှင့် အကြံပြုတင်ပြချက်များအား အောက်ပါအတိုင်း အကျဉ်းချုပ် ဖော်ပြအပ်ပါသည်။

- ၁။ အသေးစိတ်လေ့လာဆန်းစစ်ရမည့် အဓိကစိန်ခေါ်မှုများနှင့် ကိစ္စရပ်များ
- ၂။ ပတ်ဝန်းကျင်ထိခိုက်မှုများအား လေ့လာရာတွင် ထည့်သွင်းစဉ်းစားရမည့် အဓိကအစားထိုးနိုင်မည့် နည်းလမ်း များ
- ၃။ သက်ရောက်မှုများအားလေ့လာရမည့်ပမာဏနှင့်အတိုင်းအတာ
- ၄။ ဆွေးနွေးတိုင်ပင်ရမည့်အကျိုးသက်ဆိုင်သူအုပ်စုများ
- ၅။ အရေးကြီးသည့်အချက်အလက်လိုအပ်ချက်များနှင့် အတားအဆီးအခက်အခဲများ

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းကို ရပ်ရွာကောင်းကျိုးများနှင့် စီမံကိန်းရေရှည်တည်တံ့မှုအတွက် ထောက်ခံ အကြံပြုချက်များဖြင့် လေ့လာတင်ပြထားပါသည်။ ထိုအကြံပြုတင်ပြချက်ကို (က) ရပ်ရွာအတွက် ကောင်းကျိုးများ၊ (ခ) စီမံကိန်းရပ်ဆိုင်းခြင်းနည်းလမ်းရွေးချယ်မှု၊ (ဂ) သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာ စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်များ ဟူ၍ အောက်ပါအတိုင်း အုပ်စုသုံးစုခွဲ၍ တင်ပြထားပါသည်။

၇.၁ ရပ်ရွာအတွက်ကောင်းကျိုးများ

ဤစီမံကိန်းသည် ဇီဝပိုင်းဆိုင်ရာ၊ ရုပ်ပိုင်းဆိုင်ရာနှင့်လူမှုရေးဆိုင်ရာပတ်ဝန်းကျင်များအပေါ် ဆိုးကျိုးသက်ရောက်နိုင်သည့် အလားအလာများရှိနေသော်လည်း စီမံကိန်းဒေသရှိရပ်ရွာများအား နည်းလမ်းမျိုးစုံဖြင့် ကောင်းကျိုးပြုနိုင်သည့် အလားအလာများလည်း ရှိနေပါသေးသည်။ အောက်ဖော်ပြပါ ထောက်ခံအကြံပြုချက်များကို လက်တွေ့အကောင်အထည်ဖော်ခြင်းဖြင့် ရပ်ရွာအတွက်ကောင်းကျိုးများဖြစ်စေနိုင်သည့်အပြင်

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ရေရှည်ဖွံ့ဖြိုးတိုးတက်မှုများလည်း ရရှိနိုင်မည်ဖြစ်သည်။ ထိုထောက်ခံအကြံပြုချက်များကို စီမံကိန်းအဆိုပြုသူကလည်း ပါဝင်အကောင်အထည်ဖော်ဆောင်ရွက်မည် ဖြစ်ပါသည်။

၇.၁.၁ ဒေသတွင်း ယခင်စီမံကိန်းများမှရရှိသော ဒေသခံများ၏အတွေ့အကြုံများ

ယခုရေနက်ဆိပ်ကမ်းစီမံကိန်းနှင့်ပတ်သက်၍ စိန်ခေါ်မှုများထဲမှတစ်ခုမှာ ဒေသတွင်းဆောင်ရွက်ခဲ့သည့် ယခင်စီမံကိန်းများမှ မကောင်းသောအတွေ့အကြုံများကို ဒေသခံများက ကြုံတွေ့ခဲ့ခြင်းဖြစ်သည်။ ယေဘုယျအားဖြင့် ယခုစီမံကိန်းကို ဒေသခံများက ထောက်ခံကြိုဆိုကြသော်လည်း ယခင်စီမံကိန်းများကဲ့သို့ ပွင့်လင်းမြင်သာမှု၊ တာဝန်ခံမှုမရှိ၊ ဒေသအတွက် ကောင်းကျိုးများမပြုဘဲ လုပ်ဆောင်မည်ကို စိုးရိမ်နေကြသည်။ ထိုကဲ့သို့သော အလားတူဆိုးရွားသည့်အတွေ့အကြုံများအား ရှောင်ရှားနိုင်ရန် စီမံကိန်းအဆိုပြုသူက ၎င်း၏ ပွင့်လင်းမြင်သာမှု၊ တာဝန်ခံမှုတို့ကို အများပြည်သူသို့ အသိပေးရမည်။ ဒေသခံများ၏အကျိုးစီးပွားကို ပြည့်ဝစွာ ဖြည့်ဆည်းပေးရန် ထည့်သွင်းစဉ်းစားကြောင်း လက်တွေ့ပြရမည်။ ဤစီမံကိန်း တည်ဆောက်သူများအနေဖြင့် ဒေသခံများနှင့်ယုံကြည်မှုတည်ဆောက်ပြီး ကောင်းသောစိတ်ခံစားချက်များရရှိရန် အထူးအရေးကြီးပါသည်။

၇.၁.၂ မြေယာပြဿနာများ

ဒေသခံများက မြေအရင်းအမြစ်များကို ဓလေ့ထုံးတမ်းပိုင်ဆိုင်မှုဖြင့် ၎င်းတို့၏အသက်မွေးဝမ်းကျောင်းအတွက် လယ်ယာစိုက်ပျိုးခြင်း၊ စားကျက်မြေအဖြစ်အသုံးပြုခြင်း စသည့်ရည်ရွယ်ချက်အမျိုးမျိုးဖြင့် အသုံးပြုလျက် ရှိကြပါသည်။ လယ်ယာမြေများအား ဓလေ့ထုံးတမ်းအရ ပိုင်ဆိုင်၊ လုပ်ကိုင်လာခဲ့သည်မှာ ယနေ့ခေတ် ဥပဒေ၊ စည်းမျဉ်းများ မပေါ်ပေါက်မီအချိန်ကတည်းက ဖြစ်ပါသည်။ ဓလေ့ထုံးတမ်းအရ သို့မဟုတ် မိရိုးဖလာအရ ပိုင်ဆိုင်သောမြေများကို လက်ရှိဥပဒေများက တရားဝင်အသိအမှတ်မပြုပေးသေးပါ။ ထို့အတွက် ထိခိုက်နစ်နာလွယ်သည့် ဒေသခံများအနေဖြင့် လျော်ကြေးငွေများရရှိမည့်အခွင့်အရေး ဆုံးရှုံးခံရမည်ကို ပူပန်ကြပါသည်။ မြေယာပြဿနာများနှင့်ပတ်သက်၍ ဒေသခံများ၏ စိုးရိမ်ပူပန်စိတ်ကို လျော့ပါးသက်သာစေရန် သက်ဆိုင်ရာအာဏာပိုင်များက ဓလေ့ထုံးတမ်းအရပိုင်ဆိုင်မှုကို အသိအမှတ်ပြု၍ ကာကွယ်ပေးရန် လိုအပ်ပါသည်။

စီမံကိန်းအကောင်အထည်ဖော်ရန်အတွက် မြေယာများသိမ်းဆည်းခြင်းမှာ မလွဲမသွေဆောင်ရွက်ရမည့် အကြောင်းအရာ တစ်ခုပင်ဖြစ်သည်။ ထို့အတွက် မြေယာဆုံးရှုံးသူများ၏ အသက်မွေးဝမ်းကျောင်းများ၊ လူနေမှုအဆင့်အတန်းများကို ထိခိုက်စေခြင်းမရှိဘဲ ပြန်လည်နေရာချထားခြင်း၊ ပြန်လည်ပြုစုပျိုးထောင်ခြင်း အစီအစဉ်များအပါအဝင် မြေယာလျော်ကြေးကိစ္စအား ပွင့်လင်းမြင်သာမှု၊ စနစ်တကျရှိမှုဖြင့် ဆောင်ရွက်ရန် လိုအပ်ပါသည်။ လိုအပ်ပါသည်။ မြေယာများသိမ်းဆည်းခြင်းနှင့် မြေယာများအတွက်လျော်ကြေးပေးခြင်း တို့သည် ကျောက်ဖြူ အထူးစီးပွားရေးဇုန်စီမံ ခန့်ခွဲမှုကော်မတီ၏ တာဝန်ဖြစ်ပါသည်။ ထို့အပြင် မြေယာ သိမ်းဆည်းခြင်း၊ ပြန်လည်နေရာချထားခြင်း၊ ပြန်လည် ပြုစုပျိုးထောင်ခြင်း ဖြစ်စဉ်များ၏ အစိတ်အပိုင်းတစ်ခုအနေဖြင့် တာဝန်ရှိသူများက လိုအပ်သောလေ့လာမှုများ၊ နစ်နာသူ ဒေသခံများနှင့်တွေ့ဆုံဆွေးနွေးခြင်းများကို ဆောင်ရွက်ရန် ထောက်ခံအကြံပြုပါသည်။

နိုင်ငံ၏ဒေသအသီးသီးမှ မြေဈေးကစားလိုသူများက အဆိုပြုစီမံကိန်းများအနီးရှိမြေများကို ဝယ်ယူနေကြခြင်း သည်လည်း စီမံကိန်းအတွက်မြေယာသိမ်းဆည်းခြင်းလုပ်ငန်းတွင် အဓိကပြဿနာတစ်ခုအဖြစ်ရှိနေပါသည်။ နောက်ကွယ်ရှိ ငွေရှင်များက ကိုယ်စားပြုအဝယ်တော်များစေလွှတ်လျက် မြေယာများကို ဝယ်ယူဈေးကစားနေကြောင်းတွေ့ရှိရပါသည်။ ဤပြဿနာသည် ဓလေ့ထုံးတမ်းပိုင်ဆိုင်မှုဖြစ်ရပ်နှင့် မတူသည့်အတွက် သက်ဆိုင်ရာအာဏာပိုင်များက သီးခြားကိစ္စ တစ်ရပ်အဖြစ် ကိုင်တွယ်ဖြေရှင်းရန်လိုအပ်ပါသည်။

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

၇.၁.၃ အသက်မွေးဝမ်းကျောင်း (ရေလုပ်ငန်း) အပေါ်ထိခိုက်မှု

အဆိုပြုစီမံကိန်းနေရာများအနီးနှင့်ပတ်ဝန်းကျင်ရှိကျေးရွာများမှ အိမ်ထောင်စု ၇၅% သည် ရေလုပ်ငန်း သို့မဟုတ် ငါးဖမ်းခြင်းဖြင့် အသက်မွေးဝမ်းကျောင်းလုပ်ငန်း လုပ်ကိုင်ကြပါသည်။ မြေယာဆုံးရှုံးခြင်းအတွက် အစားထိုးမြေယာများပေးခြင်း သို့မဟုတ် လျော်ကြေးငွေများပေးခြင်းတို့ဖြင့် ဖြေရှင်းနိုင်သော်လည်း ဆိပ်ကမ်း များတည်ဆောက်ခြင်းနှင့် ရေလမ်းကြောင်း ဧရိယာများပြင်ဆင်သတ်မှတ်ခြင်းတို့ကြောင့် ငါးဖမ်းသူများ၏ ငါးဖမ်းကွက်များဆုံးရှုံးခြင်းသည် ပူပန်စရာကိစ္စတစ်ခုအဖြစ်ရှိနေပြီး ကျိုးကြောင်းဆီလျော်၍ ထိရောက်သော ဖြေရှင်းချက်များပေးရန် လိုအပ်ပါသည်။ ထိုငါးဖမ်းလုပ်ငန်းရှင်များ၏ နစ်နာမှုများကို လျော့ပါးစေရန်နှင့် အစားထိုးနည်းလမ်းများကို ရေးဆွဲအကောင်အထည်ဖော်ပေးရန်တာဝန်ရှိပါသည်။ အသက်မွေးဝမ်းကျောင်း (ရေလုပ်ငန်း) အပေါ်ထိခိုက်မှုဆန်းစစ်ခြင်းကို EIA အဆင့်တွင် အထူးအကြောင်းအရာတစ်ခုအနေဖြင့် ထည့်သွင်းထားခြင်းသည် ငါးဖမ်းခြင်းဖြင့်အသက်မွေးဝမ်းကျောင်း လုပ်ငန်းလုပ်ကိုင်သူများအပေါ် တိုက်ရိုက် သက်ရောက်ခံစားရမည့် အလားအလာရှိသော ထိခိုက်ဆုံးရှုံးမှုများကို ဖော်ထုတ်နိုင်မည်ဖြစ်ပြီး လျော့ပါး သက်သာမည့် နည်းလမ်းများကိုလည်း ရေးဆွဲနိုင်မည်ဖြစ်ပါသည်။

ဒေသခံကျေးရွာများသည် မြေယာများ၊ ငါးဖမ်းကွက်များဆုံးရှုံးကြမည်ဖြစ်သည့်အလျောက် စီမံကိန်းအဆိုပြုသူ က ဒေသခံများ၏ဘဝအတွက် အစားထိုးဝင်ငွေရနိုင်မည့်နည်းလမ်းများ၊ ပြန်လည်ပျိုးထောင်ရေးအစီအစဉ်များ ကို ဖြည့်ဆည်း ဆောင်ရွက်ပေးရမည်ဖြစ်ပါသည်။

၇.၁.၄ ဒေသခံများအတွက်အကျိုးအမြတ်များ

အဆိုပြုစီမံကိန်းကို ၎င်းတို့၏ဒေသတွင် အကောင်အထည်ဖော်မည်ဖြစ်သည့်အလျောက် ဤစီမံကိန်းမှ ရရှိမည့် အကျိုးအမြတ်များကို ဒေသခံများအနေဖြင့် မျှဝေခံစားခွင့်ရသင့်သည်ဟု နိုင်ငံရေးပါတီများ၊ လူမှုကူညီရေးအဖွဲ့ အစည်းများနှင့် မြို့မိမြို့ဖများက ထုတ်ဖော်ပြောဆိုကြသည်။ ကျောက်ဖြူရေနက်ဆိပ်ကမ်း စီမံကိန်းမှ ရရှိလာမည့် ဝင်ငွေ၏အစိတ်အပိုင်းတစ်ခုကို ကျောက်ဖြူဒေသဖွံ့ဖြိုးရေးလုပ်ငန်းများအတွက် သီးသန့်လျာထား အသုံးပြုသင့်ပါသည်။ ထိုသို့ဆောင်ရွက်ပေးခြင်းအားဖြင့် ဒေသခံပြည်သူလူထု၏ စီမံကိန်းအပေါ် ထောက်ခံ အားပေးမှုကိုလည်း ပိုမိုရရှိမည် ဖြစ်ပါသည်။

၇.၁.၅ ရမ်းဗြဲကျွန်းဒေသခံများအားအကျိုးပြုမည့်တံတားတည်ဆောက်မှု

မဒေးကျွန်းနှင့် ရမ်းဗြဲကျွန်းတို့ကို ဆက်သွယ်မည့်တံတားတည်ဆောက်ခြင်းသည် လှေ၊ မော်တော်ဘုတ်များ အား နေ့စဉ်ခိုခိုနေရသည့် ဒေသခံပြည်သူများ၏ဘဝကို တိုးတက်ပြောင်းလဲစေခြင်းဖြင့် ကြီးမားသော အကျိုးကျေးဇူးများရရှိမည်ဟု မျှော်လင့်ပါသည်။ ဒေသခံများသည် ၎င်းတို့၏ရွာအနီးမှ ဖြတ်သန်းတည်ဆောက် မည့် လမ်းနှင့်တံတားတို့ကို မြင်တွေ့ခွင့်ရရန် စိတ်အားထက်သန်နေကြသကဲ့သို့ ထိုလမ်း၊ တံတားများကို အသုံးပြုခွင့်ရနိုင်ပါမည်လားဟူသော စိုးရိမ်မှုကိုလည်းတပြိုင်တည်း ခံစားနေကြရသည်။ ၎င်းတို့၏ နေထိုင် သွားလာမှုပုံစံများကို တိုးတက်ပြောင်းလဲစေမည့် အဆိုပါစီမံကိန်းပါလမ်းနှင့်တံတားကို ဒေသခံများအား အသုံးပြုခွင့်ပေးသင့်ပါသည်။ ဒေသခံများအနေဖြင့် စီမံကိန်းလုပ်ငန်းအား အနှောင့်အယှက်မဖြစ်စေဘဲ ထိုလမ်းနှင့်တံတားကို အသုံးပြုနိုင်ရေးအတွက် ဒီဇိုင်းရေးဆွဲခြင်းအဆင့်ကတည်းက ထည့်သွင်းစဉ်းစားသင့် ပါသည်။

၇.၁.၆ စက်မှုဇုန်တည်ဆောက်ခြင်းဖြင့်အလုပ်အကိုင်များဖန်တီးပေးခြင်း

ဒေသခံများ၊ အကျိုးသက်ဆိုင်သူများနှင့် တွေ့ဆုံမေးမြန်းမှုများပြုလုပ်စဉ်အတွင်း အလုပ်အကိုင်အခွင့်အလမ်း များဟူသော အကြောင်းအရာကို ဖော်ပြကြသည်။ ရေနက်ဆိပ်ကမ်းစီမံကိန်းအနေဖြင့် အလုပ်သဘောသဘာဝ

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

အရ ဒေသခံများအား ပေးနိုင်မည့်အလုပ်အကိုင်အခွင့်အလမ်းများမှာ အကန့်အသတ်ဖြင့်သာရှိလိမ့်မည်ကို စိုးရိမ်နေကြသည်။ အလုပ်အကိုင် အခွင့်အလမ်းများဖန်တီးနိုင်ရန်အတွက် ရေနက်ဆိပ်ကမ်းစီမံကိန်းနှင့်အတူ စက်မှုဇုန်ကိုပါ အကောင်အထည်ဖော်ရန် အကြံပြုပါသည်။ ကျောက်ဖြူအထူးစီးပွားရေးဇုန်၏ စက်မှုဇုန်ကို အကောင်အထည်ဖော်ပါက အလုပ်အကိုင် အခွင့်အလမ်းများစွာ ရရှိလိမ့်မည်ဟုမျှော်လင့်နေကြသည်။ ၎င်းတို့၏ မျှော်လင့်ချက်များ ပြည့်ဝသင့်သည်ဟုလည်း ယုံကြည်နေကြသည်။

၇.၁.၇ ထိခိုက်တုံ့ပြန်မှုလွယ်သည့်ရခိုင်ပြည်နယ်

ရခိုင်ပြည်နယ်သည် နိုင်ငံအတွင်း အဆင်းရဲဆုံးနှင့် ဖွံ့ဖြိုးမှုအနည်းဆုံးဒေသများထဲတွင် တစ်ခုအဖြစ်ပါဝင်သည်။ အတိတ်တွင် မတည်မငြိမ်မှုဖြစ်ရပ်များစွာရှိခဲ့သည်။ ပဋိပက္ခများနှင့် လူမှုစီးပွားဒုက္ခများရှိနေဆဲဖြစ်ပြီး ရခိုင်ပြည်နယ် အတွင်းနေထိုင်သူများ၏ လူမှုဘဝများမှာလည်း ဆိုးရွားနေဆဲဖြစ်သည်။ လက်ရှိကာလတွင် လူပေါင်းမြောက်များစွာ အတွက် လူသားချင်းစာနာသည့်အကူအညီများ လိုအပ်နေကြသည်။ ဤအဆိုပြုစီမံကိန်းသည် အနာဂတ်တွင် ဒေသစီးပွားရေးကို ကြီးမားစွာမြှင့်တင်ပေးနိုင်သော်လည်း စီမံဆောင်ရွက်ချက်များ မှားယွင်းချွတ်ချော်ခြင်း၊ အသိဉာဏ်ပညာနှင့် ဆင်ခြင်တုံတရားကင်းမဲ့သောလုပ်ဆောင်မှုများရှိခဲ့လျှင် ယခင်ဖြစ်ခဲ့ဖူးသော မတည်မငြိမ်မှုများ ပြန်လည်သက်ဝင်လာနိုင်ပါသည်။ ဤအချက်အား လစ်လျူမရှုသင့်ဘဲ အလေးထားဆောင်ရွက်ရန် အရေးကြီးပါသည်။

ဤဒေသသည်ထိခိုက်တုံ့ပြန်မှုလွယ်သောအခြေအနေရှိခြင်းကြောင့် လုပ်ငန်းဆောင်ရွက်ရာတွင် အထက်ဖော်ပြပါ မလိုလားအပ်သည့်အကြောင်းခြင်းရာများ ထပ်မံမပေါ်ပေါက်အောင် အထူးသတိထား ဆင်ခြင်ဆောင်ရွက်ရမည်။

၇.၁.၈ ဆိပ်ကမ်းလုံခြုံမှုနှင့် အမျိုးသားရေးလုံခြုံမှု

ပင်လယ်ရေကြောင်းပို့ဆောင်ရေးစနစ်သည် ဘေးကင်းလုံခြုံမှုအားနည်းပြီး ခြိမ်းခြောက်မှုများနှင့် ရင်ဆိုင်နေရသည်ကို ကမ္ဘာတွင်ဖြစ်ပျက်နေမှုများက ပြသနေပါသည်။ မြန်မာနိုင်ငံ၏စီးပွားရေးဖွံ့ဖြိုးမှုနှင့် ကမ္ဘာ့ကုန်သွယ်ရေးတို့ကို အထောက်အကူပြုမည့် မဟာဗျူဟာအရအချက်အချာကျသည့်နေရာတွင် တည်ရှိနေသော ဤရေနက်ဆိပ်ကမ်း စီမံကိန်းသည်လည်း အလားတူအခြေအနေမျိုးတွင်ရှိနေပါသည်။ အရေးပေါ်အခြေအနေတစ်ခုဖြစ်ပေါ်လာပါက ဒေသတွင်း အကျိုးစီးပွားများနှင့် အမျိုးသားလုံခြုံရေးတို့ကို အန္တရာယ်ပြုနိုင်မည်ဖြစ်ပြီး မြန်မာနိုင်ငံ၏ရပ်ပိုင်းဆိုင်ရာဖွံ့ဖြိုးမှုနှင့် လူမှုစီးပွားဆိုင်ရာအကျိုးစီးပွားများအပေါ်လည်း သက်ရောက်မှုရှိမည် ဖြစ်ပါသည်။

အမျိုးသားလုံခြုံရေး၏ အဓိကရည်ရွယ်ချက်မှာ အမျိုးသားရေးရည်မှန်းချက်ကို ပြည့်ဝစေရန်၊ ပြည်သူများ၏ ဘဝကို အကာအကွယ်ပေးရန်၊ လူနေမှုပုံစံများကိုသက်သာချောင်ချိမှုရှိရန်နှင့် အမျိုးသားအကျိုးစီးပွားကို ကာကွယ်ရန်တို့ ဖြစ်ကြပါသည်။ စီမံကိန်းလုပ်ဆောင်မှုများ၊ စက်ကိရိယာများနှင့် အခြေခံအဆောက်အအုံ တည်ဆောက်ရေး လုပ်ငန်းများက ဒေသခံပြည်သူများ၏ ကျန်းမာရေးနှင့်ဘေးကင်းလုံခြုံရေးကို သက်ရောက်မှုရှိနိုင်ပါသည်။ စီမံကိန်းဝန်ထမ်းများနှင့် ၎င်းတို့၏ပိုင်ဆိုင်မှုများအား လူ့အခွင့်အရေးဆိုင်ရာအခြေခံမှုများနှင့်အညီ ဒေသရပ်ရွာအပေါ် အန္တရာယ်မဖြစ်စေဘဲ သို့မဟုတ် အန္တရာယ်အနည်းဆုံးအခြေအနေဖြင့် အကာအကွယ်ပေးရမည်။ ကျေးရွာများ၏ဘေးကင်းလုံခြုံရေးအတွက် စီမံကိန်းအဆိုပြုသူနှင့် ကျေးရွာ၏ဆက်ဆံရေးတို့ကို မထိခိုက်စေမည့် လုံခြုံမှုအစီအမံများကို ဆောင်ရွက်ပေးရမည်။ စီမံကိန်းအဆိုပြုသူ၏ လုံခြုံရေးအစီအစဉ်များသည် စီမံကိန်းဧရိယာအတွင်းနှင့် ဒေသတွင်းနေထိုင်သူများ၏ လွတ်လပ်မှုအခွင့်အရေးကို ထိခိုက်နစ်နာမှုမရှိစေရန်လိုအပ်သည်။

အရေးပေါ်အခြေအနေများကြောင့် ဖြစ်ပေါ်နိုင်သည့် နောက်ဆက်တွဲဆိုးကျိုးများသည် စီမံကိန်းနယ်မြေအတွင်းမှတစ်ဆင့် ပြင်ပလူနေဒေသများသို့ ကူးစက်ပြန့်ပွားနိုင်သောကြောင့် ဒေသခံပြည်သူများ၏ အန္တရာယ်

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ကို ကာကွယ်နိုင်ရန် အရေးပေါ်တုံ့ပြန်မှုအစီအစဉ်များ (Emergency Response Plans) ကို စီမံကိန်းအဆိုပြုသူက ထည့်သွင်းဆောင်ရွက်ရမည်။

ပင်လယ်ပြင်အသက်အန္တရာယ်လုံခြုံစိတ်ချရမှု နိုင်ငံတကာကုန်ပစ္စည်းရောင်း (SOLAS)¹⁰ သည် နိုင်ငံတကာ ပင်လယ် ရေကြောင်းအဖွဲ့အစည်း (IMO)¹¹ ကိုဖွဲ့စည်း၍ နိုင်ငံတကာရေကြောင်းလုံခြုံစိတ်ချရမှုစာချုပ်ကို ချုပ်ဆိုခဲ့ကြ သည်။ IMO သည်ကမ္ဘာ့ကုလသမဂ္ဂ၏ ပင်လယ်ရေကြောင်းဆိုင်ရာအဖွဲ့အစည်းတစ်ခုဖြစ်သည်။ ISPS¹² Code ကို SOLAS ကုန်ပစ္စည်းရောင်းအရအတည်ပြုကျင့်သုံးလာခဲ့ပြီး ၎င်းတွင် သင်္ဘောများနှင့် ဆိပ်ကမ်းအဆောက်အအုံများ လုံခြုံရေးကို တိုးမြှင့်နိုင်မည့်နည်းလမ်းများ အပြည့်အစုံပါဝင်သည်။ ISPS Code ၏အပိုင်း ၃.၁.၂ တွင် “ဤ Code သည် နိုင်ငံတကာခရီးစဉ်များတွင်ပြေးဆွဲနေသည့် သင်္ဘောများအား ဝန်ဆောင်မှုပေးနေသည့် ဆိပ်ကမ်း များအားလုံးအပေါ် သက်ရောက်မှုရှိသည်။” ဟု ဖော်ပြထားသည်။ တချို့သောဆိပ်ကမ်းများအား အခြေခံအား ဖြင့် နိုင်ငံတကာခရီးစဉ်တွင် ပြေးဆွဲမှုမရှိသည့် သင်္ဘောများကိုသာ ဝန်ဆောင်မှုပေးရန် အသုံးပြုသော်လည်း နိုင်ငံတကာသင်္ဘောများဆိုက်ရောက်မှု ထွက်ခွာမှုတို့အတွက် ရံဖန်ရံခါဝန်ဆောင်မှုပေးရသည်များလည်း ရှိသည်။ ထို့အတွက် အပိုင်း ၃.၁.၂ တွင် “စာချုပ် ချုပ်ဆိုသည့် အစိုးရသည် ၎င်း၏နယ်ပယ်အတွင်း ထိုကဲ့သို့ သောဆိပ်ကမ်းများအပေါ် သက်ရောက်မှုအတိုင်းအတာကို ဆုံးဖြတ်ရမည်ဖြစ်သည်။” ဟု ထပ်မံ ဖော်ပြထား သည်။

ဆိပ်ကမ်းဧရိယာများနှင့် ဆိပ်ကမ်းများရှိ သင်္ဘောများသည် အကြမ်းဖက်တိုက်ခိုက်မှုအန္တရာယ်ကို ရင်ဆိုင်နေ ကြရသည်။ ဆိပ်ကမ်းဧရိယာများသည် များသောအားဖြင့် ကျယ်ဝန်းသဖြင့် အကြမ်းဖက်သူများ ဝင်ရောက်ရန် အဆင်ပြေသည်။ ထိုဧရိယာများသည် လူနေရပ်ကွက်များနှင့် ထိစပ်နေတတ်သဖြင့် အကြမ်းဖက်သူများ ဝင်ရောက်သည့်အခါတွင် လည်းကောင်း၊ ထွက်ပြေးရာတွင်လည်းကောင်း ခိုလှုံရန်လွယ်ကူသည်။ ဆိပ်ကမ်းများ တွင် ကုန်တင်ကားအများအပြား ဝင်ထွက်လျက်ရှိသဖြင့် အကြမ်းဖက်သမားများက လက်နက်များနှင့်အတူ ကုန်တင်ကားများကိုအသုံးပြုလျက် ဆိပ်ကမ်းအတွင်းဝင်ရောက်နိုင်သည်။ အကြမ်းဖက်သမားများသည် ဆိပ်ကမ်းရှိ ငါးဖမ်းလှေများ၊ အပန်းဖြေလှေများကို အသုံးပြုလျက် ၎င်းတို့ ပစ်မှတ်ထားသည့်သင်္ဘောသို့ လျှို့ဝှက်ချဉ်းကပ်နိုင်သည်။ “ဆိပ်ကမ်းတွင် လှုပ်ရှားလုပ်ဆောင်မှုများသည် “တရားရေးအရတာဝန်ယူမှု စည်းမျဉ်းများ” (Rules of liability) နှင့်အကျုံးဝင်သည်။ ဆိပ်ကမ်းများအား ပြည်သူလူထုအတွက် အန္တရာယ်ဇုန်များအဖြစ် မှတ်ယူကြသည်။ ထို့အတွက် ဆိပ်ကမ်းများအတွင်းဝင်ရောက်မှုကို တားမြစ်ထား သည်။” ဟု ကုလသမဂ္ဂကုန်သွယ်ရေးနှင့် ဖွံ့ဖြိုးမှုညီလာခံ (UNCTAD) ၏အတွင်းရေးမှူးများအဖွဲ့က ရေးသား သည့်အစီရင်ခံစာ The Legal Aspects of Port Management တွင် ဖော်ပြထားသည်။ များစွာသော လူပုဂ္ဂိုလ်များက အမျိုးမျိုးသောလှုပ်ရှား ဆောင်ရွက်မှုများကို ဆိပ်ကမ်းတစ်ခုတွင် လုပ်ဆောင်ကြသဖြင့် ဆိပ်ကမ်းအာဏာပိုင်သည် တစ်ခုတည်းသော တာဝန်ရှိသည့် အဖွဲ့အစည်းမဟုတ်ပါ။

ဆိပ်ကမ်းလုပ်ငန်းလည်ပတ်မှုများတွင် အန္တရာယ်ရှိသောကုန်ပစ္စည်းများကို ကိုင်တွယ်ခြင်းလည်းပါဝင်ရာ နိုင်ငံတကာရေကြောင်း အန္တရာယ်ရှိသောကုန်ပစ္စည်းများဆိုင်ရာသတ်မှတ်ချက်စံ (International Maritime Dangerous Goods - IMDG - Code) ကို လေ့လာထားရှိရန်လိုအပ်ပါသည်။ IMDG - Code သည် အန္တရာယ် ရှိသည့် ကုန်ပစ္စည်းများအား သတ်မှတ်ပုံစံဖြင့်ထုပ်ပိုး၍ ပင်လယ်ပြင်ကိုဖြတ်သန်းပို့ဆောင်ရာတွင် အသုံးပြုသည့် သတ်မှတ်ချက်စံ ဖြစ်သည်။ ထိုနိုင်ငံတကာသတ်မှတ်ချက်စံကို လိုက်နာခြင်းဖြင့် အန္တရာယ်ရှိသော ကုန်ပစ္စည်း များအား အန္တရာယ်ကင်း၊ ဘေးရှင်းစွာ သယ်ယူနိုင်မှုကိုဖြစ်စေပြီး ပတ်ဝန်းကျင်ညစ်ညမ်းမှုကိုလည်း တားဆီး ပေးနိုင်မည်ဖြစ်သည်။

10 SOLAS: International Convention for the Safety of Life at Sea
11 IMO: International Maritime Organization
12 ISPS: International Ship and Port Security

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

“အမျိုးသားရေးလုံခြုံမှု” ဟူသောအသုံးအနှုန်းအတွက် လူအများလက်ခံသည့် အဓိပ္ပာယ်သတ်မှတ်ချက်မရှိပါ။ ၎င်းနှင့်ဆက်နွယ်နေသည့် သိမြင်မှုသဘောတရားမှာ အဓိပ္ပာယ်အမျိုးမျိုးထွက်ပြီး စစ်ရေးအန္တရာယ်မှ လွတ်ကင်းမှုကိုသာ အလေးအနက်ထားသည်။¹³ လူအများနားလည်သည့် အဓိပ္ပာယ်သတ်မှတ်ချက်တစ်ခုမှာ “လူ့အသိုင်းအဝန်းနှင့် နိုင်ငံသားများအား အစိုးရနှင့်နိုင်ငံများ၏ ခြိမ်းခြောက်မှုနှင့်အန္တရာယ်မှ ကာကွယ်ခြင်း” ဟူသောအချက်ပင်ဖြစ်သည်။ ပင်လယ်ဆိပ်ကမ်းများသည် သမုဒ္ဒရာနှင့် ကမ္ဘာ့ကုန်သွယ်မှုလမ်းကြောင်းများသို့ ထွက်ပေါက်ဖြစ်သည်။ အကျိုးတရားအားဖြင့် ဆိပ်ကမ်းများသည် ရာဇဝတ်မှု၊ အကြမ်းဖက်မှုများ ကျူးလွန်မည့် သူများအား ဆွဲဆောင်နေသည့် သဘာဝပတ်ဝန်းကျင်များပင်ဖြစ်သည်။ ဆိပ်ကမ်းလုံခြုံရေးအား ပြည့်စုံ၊ တင်းကျပ် စွာထားရှိခြင်းဖြင့် နယ်စပ်လုံခြုံရေးကိုပိုမိုခိုင်မာစေသကဲ့သို့ ဆိပ်ကမ်းများနှင့် ကမ်းရိုးတန်းများသည် နိုင်ငံအား အမြတ်ထုတ်လိုသူများအား ဆွဲဆောင်မှုလျော့ပါးသွားစေသည်။ ဖြတ်ကျော်သွားလာသူများနှင့် အသေးစားခိုးမှု များမှစ၍ အကြမ်းဖက်မှုများ၊ ဆိုက်ဘာတိုက်ခိုက်မှုများ၊ မှောင်ခိုကူးသန်းမှုများ၊ အုပ်စုဖွဲ့ရာဇဝတ်မှု ကျူးလွန် ခြင်းများအထိ များစွာသောခြိမ်းခြောက်မှုများ ရှိနေသည်။

ထို့အတွက် စီမံကိန်းနယ်နိမိတ်အပြင်ဘက်တွင် ဖြစ်ပေါ်လာနိုင်သည့် အဖြစ်အပျက်များနှင့်ပတ်သက်၍ ဆုံးဖြတ်ချက်များချနိုင်ရန် စာချုပ်ချုပ်ဆိုသည့်အာဏာပိုင်၊ ဒေသခံအသိုက်အဝန်းတို့နှင့် နီးနီးကပ်ကပ် ပူးပေါင်းဆောင်ရွက်ရန်လိုအပ်သည်။

၇.၁.၉ မကျေနပ်ချက်များအားဖြေရှင်းခြင်းနည်းလမ်း

တိုက်ရိုက် သို့မဟုတ် တစ်ဆင့်ခံထိခိုက်မှုခံရသည့် ဒေသခံများနှင့် တခြားသောအကျိုးသက်ဆိုင်သူများ၏ မကျေနပ်ချက်များကို ကိုင်တွယ်ဖြေရှင်းနိုင်ရန်အတွက် လက်တွေ့ကျကျ အကောင်အထည်ဖော်နိုင်သည့် ပွင့်လင်းမြင်သာမှုရှိသော “မကျေနပ်ချက်များကိုဖြေရှင်းသည့်ဖြစ်စဉ်” (Grievance Redress Mechanism) တစ်ခုကို ရေးဆွဲသတ်မှတ်ရမည်။ ထိုသို့ရေးဆွဲရာတွင် အောက်ပါအချက်များကို ထည့်သွင်းစဉ်းစားရမည်။

- ၁။ အများပြည်သူ၏ သဘောထားအမြင်များကို နည်းလမ်းမျိုးစုံဖြင့် ကောက်ယူသွားပါမည်။
- ၂။ ပြဿနာအသီးသီးအားဖြေရှင်းမှုဖြစ်စဉ်တွင် တရားမျှတမှုနှင့်ပွင့်လင်းမြင်သာမှုအတွက် အကျိုး သက်ဆိုင်သူ အဖွဲ့အစည်းအသီးသီးမှ ကိုယ်စားလှယ်များကို ပါဝင်စေရမည်။
- ၃။ စုံစမ်းစစ်ဆေးမှုများအပါအဝင် ထိုဖြစ်စဉ်အားဆောင်ရွက်ရာတွင် ကူညီဖြေရှင်းမှုပေးနိုင်သည့် ရှေ့နေများ သို့မဟုတ် ဥပဒေကို တတ်ကျွမ်းနားလည်သူများနှင့် သက်ဆိုင်ရာအစိုးရဌာနများမှ ကိုယ်စားလှယ်များကို လည်း ပါဝင်ခွင့်ပြုရမည်။
- ၄။ ခန့်အပ်ထားသောမန်နေဂျာသည် မကျေနပ်မှုအားကိုင်တွယ်ဖြေရှင်းခြင်း တိုးတက်မှုအခြေအနေကို တိုင်ကြား သူအား ဆက်သွယ်အကြောင်းကြားရမည်။

၇.၂ စီမံကိန်းရပ်ဆိုင်းခြင်းနည်းလမ်းရွေးချယ်မှု

ရေနက်ဆိပ်ကမ်းစီမံကိန်း တည်ဆောက်ရေးပြီးစီးသွားသည့်အခါ အရှေ့တောင်အာရှနိုင်ငံများ၊ တရုတ်နှင့် အိန္ဒိယတို့ရှိ အဓိကကမ္ဘာ့ဈေးကွက်များ ပွင့်လင်းလာပြီး အရှေ့အာရှ၊ အာဖရိက၊ အမေရိက၊ အရှေ့အလယ်ပိုင်း နှင့် ဥရောပနိုင်ငံများသို့ တိုက်ရိုက်ပင်လယ်ကုန်သွယ်မှုလမ်းကြောင်းသစ်များလည်း ပေါ်ထွန်းလာစေမည် ဖြစ်ပါသည်။ သဘာဝပတ်ဝန်းကျင်နှင့် လူထု၏သက်သာချောင်ချိရေးကို အလေးထားလျက် စနစ်ကျကျအဆင့်မီ သောဆိပ်ကမ်းဝန်ဆောင်မှုများကိုပေးခြင်းဖြင့် ကျောက်ဖြူအထူးစီးပွားရေးဇုန်၊ ရခိုင်ပြည်နယ်နှင့် မြန်မာနိုင်ငံ တို့အတွက် ရေရှည်တည်တံ့သည့် စီးပွားရေးဖွံ့ဖြိုးမှုနှင့် ကြွယ်ဝမှုကို ဖြစ်ထွန်းစေမည်ဖြစ်ပါသည်။ ထိုမျှော်မှန်း

¹³ Babak Akhgar, Simeon Yates, 2013, Strategic Intelligence Management, National Security Imperatives and Information and Communications Technologies, Butterworth-Heinemann

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ချက်များအရဆိုလျှင် “စီမံကိန်းရပ်ဆိုင်းခြင်းနည်းလမ်း” အား ထည့်သွင်းစဉ်းစားရန် လိုအပ်မည်မဟုတ်တော့ပါ။

သို့သော်လည်း ထိုစီမံကိန်းကို အကောင်အထည်ဖော်ရာတွင် ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားဆိုင်ရာ ဖြည့်ဆည်းမှုများကို မလွဲမသွေပြည့်မီအောင်ဆောင်ရွက်ရမည့် တာဝန်ဝတ္တရားတစ်ရပ် ရှိနေပါသည်။ စီမံကိန်းကြောင့် ဖြစ်လာမည့် ဆိုးကျိုးသက်ရောက်မှုများအား လျော့ပါးစေခြင်းနှင့် လက်တွေ့ထိခိုက်နစ်နာမှုခံရမည့် အသက်မွေးဝမ်းကျောင်း လုပ်ငန်းဆိုင်ရာအတွက် ပေးလျော်ရမည့်တာဝန်ဝတ္တရားများလည်း ရှိပါသည်။ ပြည့်စုံလုံလောက်သည့် ထိခိုက်နစ်နာမှုလျော့ပါးရေး နည်းလမ်းများနှင့် ကောင်းကျိုးဖြစ်ထွန်းစေမည့် အစီအစဉ်များသည် ပုံမှန်လုပ်ကိုင်စားသောက်နေသော ဒေသခံများ၏ စိုးရိမ်ပူပန်စိတ်များကို လျော့ကျစေမည် ဖြစ်ပါသည်။

ရခိုင်ပြည်နယ်သည် ထိခိုက်တုံ့ပြန်မှုလွယ်ကူသောဒေသတစ်ခုဖြစ်သည့်အလျောက် ဤစီမံကိန်းသည် ဒေသတွင်းရှိ ကျေးရွာများ၊ နိုင်ငံရေးပါတီများ၊ လူမှုရေးအဖွဲ့အစည်းများနှင့် သက်ဆိုင်ရာလက်နက်ကိုင်တိုင်းရင်းသားအုပ်စုတို့၏ ယုံကြည်မှုနှင့်ထောက်ခံသဘောတူညီမှုရှိရန် လိုအပ်ပါသည်။ “စီမံကိန်းရပ်ဆိုင်းခြင်းနည်းလမ်း” ကို ရှောင်ရှားနိုင်ရန်အတွက် ဒေသ၏ပကတိအခြေအနေများကို ထည့်သွင်းစဉ်းစားခြင်း၊ အကျိုးသက်ဆိုင်သူများအား ပါဝင်စေခြင်းတို့ လိုအပ်ပါသည်။ ၎င်းတို့၏သဘောထားအမြင်များ၊ အကြံဉာဏ်များကို လျစ်လျူရှုပါက “စီမံကိန်းရပ်ဆိုင်းခြင်းနည်းလမ်း” သို့ ရောက်ရှိသွားနိုင်ပါသည်။

၇.၃ ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာစီမံခန့်ခွဲမှုနှင့်စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်များ

၇.၃.၁ စီမံကိန်းအဆိုပြုသူ၏ စီမံခန့်ခွဲရေးအဖွဲ့က လိုအပ်သည့်မူဝါဒများဖော်ပြချက်များကို ရေးဆွဲ၊ ဖော်ပြ၊ ကျင့်သုံးရန် လိုအပ်ပါသည်။ ထိုမူဝါဒဖော်ပြချက်များသည် စီမံကိန်းရည်ရွယ်ချက်များနှင့်အတူ မဟာဗျူဟာ လမ်းကြောင်းတို့ ပါဝင်သည့် စီမံကိန်းပါအကြောင်းအချက်များနှင့် ကိုက်ညီမှုရှိရမည်။

- (က) ပတ်ဝန်းကျင်ဆိုင်ရာမူဝါဒ
- (ခ) ကျန်းမာရေးနှင့်အန္တရာယ်ကင်းရှင်းမှုဆိုင်ရာမူဝါဒ
- (ဂ) လူမှုရေးဆိုင်ရာတာဝန်ယူခြင်းမူဝါဒ
- (ဃ) လူ့အခွင့်အရေးအားလေးစားခြင်းဆိုင်ရာမူဝါဒ
- (င) ကောင်းမွန်သော စီမံအုပ်ချုပ်မှုမူဝါဒ တို့အနည်းဆုံးပါဝင်ပါသည်။

၇.၃.၂ စီမံကိန်းအဆိုပြုသူသည် သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၏ ညွှန်ကြားချက်များအတိုင်း ပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာစီမံခန့်ခွဲမှုနှင့်စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်များကို ရေးဆွဲထားရပါမည်။

- (က) လေအရည်အသွေးစီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်
- (ခ) စွန့်ပစ်ရေ (ရေဆိုး) စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်
- (ဂ) ဆူညံသံနှင့်တုန်ခါခြင်းစီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်
- (ဃ) အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ (အန္တရာယ်ရှိသော၊ အန္တရာယ်မရှိသောစွန့်ပစ်ပစ္စည်းများ) စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်
- (င) အန္တရာယ်ရှိသောပစ္စည်းများစီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်
- (စ) လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးကင်းလုံခြုံရေးစီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်
- (ဆ) ရပ်ရွာကျန်းမာရေးနှင့်ဘေးကင်းလုံခြုံရေးစီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်
- (ဇ) ဇီဝမျိုးစုံမျိုးကွဲ စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ် တို့ဖြစ်ကြပါသည်။

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

၇.၃.၃ စီမံကိန်းလွှဲပြောင်းခြင်းအတွက် အကျိုးသက်ဆိုင်သူများကိုလည်းကောင်း (အထူးသဖြင့်၊ စီမံကိန်းတွင်ပါဝင်ကြသည့်အဖွဲ့များ)၊ ဘာသာရပ်ဆိုင်ရာကျွမ်းကျင်သူများကိုလည်းကောင်း၊ တွေ့ဆုံမေးမြန်းဆွေးနွေးခြင်းများ ပြုလုပ်ရန် လိုအပ်ပါသည်။ စီမံကိန်းလွှဲပြောင်းခြင်းဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်တစ်ခုကို ပြင်ဆင်ရမည်။ ပြဿနာများ၊ အဆိုပြုသည့်လုပ်ဆောင်ရမည့်အချက်များကို EIA အစီရင်ခံစာတွင် အသေးစိတ်ကို ထည့်သွင်းရပါမည်။

၈။ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအတွက်ဆောင်ရွက်မည့်လုပ်ငန်းတာဝန်များ

ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားဆိုင်ရာထိခိုက်မှုများအား ဆန်းစစ်မှုပြုလုပ်ရာတွင် ဆောင်ရွက်မည့်လုပ်ငန်းတာဝန်များ (Terms of Reference - ToR) ကို နယ်ပယ်အတိုင်းအတာ သတ်မှတ်ချက်များအပေါ် အခြေခံ၍ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုသိမ်းရေးဝန်ကြီးဌာနက ထုတ်ပြန်ထားသည့်၊ ကျင့်သုံးရမည့် လမ်းညွှန်ချက်များနှင့်အညီ ရေးသားပြုစုပါသည်။ အစီရင်ခံစာ၏အစိတ်အပိုင်းအသီးသီးတွင် လိုအပ်သည့် လေ့လာမှုများကိုဖော်ပြခြင်း၊ လုပ်ဆောင်ရမည့်အချက်များ၊ နည်းလမ်းများ၊ ကျွမ်းကျင်မှုဆိုင်ရာအကြံပြုချက်များအပါအဝင် EIA အစီရင်ခံစာတွင် ပါဝင်ရမည့်အချက်များကို ToR တွင် ဇယားပုံစံဖြင့် ဖော်ပြထားပါသည်။ ToR တွင် ပါဝင်မည့် အကြောင်းအချက်များမှာ--နိဒါန်း၊ စီမံကိန်းနောက်ခံအကြောင်းနှင့် စီမံကိန်းအဆိုပြုသူ၊ မူဝါဒ၊ ဥပဒေဆိုင်ရာနှင့် အဖွဲ့အစည်းဆိုင်ရာ မူဘောင်၊ စီမံကိန်းဆိုင်ရာဖော်ပြချက်များနှင့် အခြားဆောင်ရွက်နိုင်သောနည်းလမ်းများ၊ စီမံကိန်းပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များဖော်ပြချက်၊ အဓိကအလားအလာရှိသော ပတ်ဝန်းကျင်ထိခိုက်မှုများနှင့် လျော့ပါးစေရေးလုပ်ငန်းများ၊ ဆက်စပ်သက်ရောက်မှုများအား ဆန်းစစ်ခြင်း၊ ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်၊ အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်းနှင့် သတင်းအချက်အလက်များ ထုတ်ဖော်တင်ပြခြင်း၊ နိဂုံးနှင့်အကြံပြုချက်များ ပါဝင်ပါသည်။ EIA အစီရင်ခံစာနှင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တို့အတွက်မာတိကာမှာ အောက်ဖော်ပြပါအတိုင်း ဖြစ်ပါသည်။

EIA အစီရင်ခံစာနှင့်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်၏မာတိကာ

အစီရင်ခံစာအကျဉ်းချုပ် (မြန်မာဘာသာနှင့်အင်္ဂလိပ်ဘာသာ)

- အခန်း ၁၊ နိဒါန်း
 - ၁.၁ စီမံကိန်းအကြောင်းအရာ
 - ၁.၂ စီမံကိန်းရည်မှန်းချက်
 - ၁.၃ စီမံကိန်းအကျိုးရလဒ်များ
 - ၁.၄ စီမံကိန်းအဆိုပြုသူ၏အကြောင်းအရာ
 - ၁.၅ သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုရေးဆိုင်ရာကျွမ်းကျင်သူများ၏အကြောင်းအရာ
- အခန်း ၂၊ မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်
 - ၂.၁ ပေါင်းစည်းအကောင်အထည်ဖော်မည့် ကုမ္ပဏီအဖွဲ့အစည်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုသိမ်းရေးနှင့် လူမှုရေးဆိုင်ရာမူဝါဒ
 - ၂.၂ မူဝါဒနှင့် ဥပဒေဆိုင်ရာမူဘောင်
 - ၂.၃ အဖွဲ့အစည်းဆိုင်ရာမူဘောင်
 - ၂.၄ နိုင်ငံတကာကွန်ဗန်းရှင်းများ၊ စာချုပ်များနှင့်သဘောတူညီချက်များ
 - ၂.၅ နိုင်ငံတကာအကောင်းဆုံးအလေ့အထများ
 - ၂.၆ စီမံကိန်း၏ပတ်ဝန်းကျင်ထိခိုက်မှုသိမ်းရေးနှင့်လူမှုရေးဆိုင်ရာစီမံခန့်ခွဲမှုစံနှုန်းများ

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

- ၂.၇ လုပ်ငန်းစာချုပ်ဆိုင်ရာနှင့်အခြားသောကတိကဝတ်များ
- အခန်း ၃၊ စီမံကိန်းဆိုင်ရာဖော်ပြချက်များနှင့် အခြားနည်းရွေးချယ်ခြင်း
 - ၃.၁ စီမံကိန်းဆိုင်ရာဖော်ပြချက်များ
 - ၃.၂ စီမံကိန်းအကျယ်အဝန်းနှင့်အသေးစိတ်အချက်များ
 - ၃.၃ စီမံကိန်းတည်နေရာ
 - ၃.၄ စီမံကိန်းအတွက်လေ့လာမှုနယ်ပယ်နှင့်ထူးခြားသည့်အချက်များ
 - ၃.၅ လုပ်ငန်းခွင်သို့ချဉ်းကပ်မှုနှင့်လုပ်ငန်းခွင်လမ်းများ
 - ၃.၆ ဆိပ်ကမ်းဒီဇိုင်းနှင့်အချက်အလက်များ
 - ၃.၇ ပင်လယ်ရေကြောင်းသွားလာမှုနှင့်သင်္ဘောပို့ဆောင်မှု
 - ၃.၇.၁ သင်္ဘောခတ်မောင်းသည့်လမ်းကြောင်းများ
 - ၃.၇.၂ သတ်မှတ်ဒီဇိုင်းဝင်ရေယာဉ်များ
 - ၃.၈ ဆိပ်ကမ်းအခြေခံအဆောက်အအုံများ
 - ၃.၈.၁ ချဉ်းကပ်လမ်းကြောင်း
 - ၃.၈.၂ ပင်လယ်အောက်နန်းတူးဖော်ခြင်း
 - ၃.၈.၂.၁ ကမ်းထိန်းနံရံများ၊ ကမ်းအကာအကွယ်များ
 - ၃.၈.၂.၂ ဆိုက်ကပ်ဆိပ်ကမ်း
 - ၃.၈.၂.၃ ပင်လယ်ရေကြောင်းအထောက်အကူများ
 - ၃.၈.၂.၄ ကျောက်ဆူးချခြင်း
 - ၃.၈.၂.၅ နန်းတူးဖော်ခြင်းနှင့်မြေဖော်ဆောင်ခြင်း
 - ၃.၈.၂.၆ ရေလှိုင်းအကာအကွယ်၊ ကမ်းထိန်းနံရံများ
 - ၃.၉ ဆိပ်ကမ်းအခြေခံအဆောက်အအုံနှင့်အထောက်အကူပြုလုပ်ငန်းများ
 - ၃.၉.၁ မြေဖော်ဆောင်ခြင်း၊ မြေပြုပြင်ပြောင်းလဲခြင်း
 - ၃.၉.၂ လျှပ်စစ်ဓာတ်အားပေးခြင်း
 - ၃.၉.၃ ဆက်သွယ်ရေး
 - ၃.၉.၄ ရေပေးဝေခြင်း
 - ၃.၉.၅ မိုးရေစီမံခန့်ခွဲမှု
 - ၃.၉.၆ ရေသန့်စင်စက်ရုံ
 - ၃.၉.၇ ရေဆိုးနှင့်မိလ္လာသန့်စင်စက်ရုံ
 - ၃.၉.၈ စွန့်ပစ်ပစ္စည်းယာယီသိုလှောင်ရုံ
 - ၃.၉.၉ ဆီဖြည့်စခန်း
 - ၃.၉.၁၀ မီးသတ်စခန်း
 - ၃.၉.၁၁ ဖို့မြေအရင်းအမြစ်များ
 - ၃.၉.၁၂ အဓိကအထောက်အကူလုပ်ငန်းများ
 - ၃.၉.၁၃ ပင်လယ်ကူးသင်္ဘောများထောက်ပံ့ရေးအခြေစိုက်စခန်း
 - ၃.၉.၁၄ လူသွားလမ်း၊ ဆိုက်ကပ်ရန်အဆောက်အအုံများ၊ လှေဆိပ်
- ၃.၁၀ လုပ်ငန်းလည်ပတ်ရာတွင်လိုအပ်ချက်များ
 - ၃.၁၀.၁ နည်းပညာကိုင်တွယ်မှု
 - ၃.၁၀.၂ ပြန်ကြားရေးနည်းပညာစနစ်

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

- ၃.၁၀.၃ ပြုပြင်ထိန်းသိမ်းမှု
- ၃.၁၀.၄ အခြေခံအဆောက်အအုံများ (စီမံကိန်းခွဲများ) အကျဉ်းချုပ်
- ၃.၁၁ လုပ်သားအင်အားစုနှင့်နေထိုင်စရာများ
- ၃.၁၂ ဆောက်လုပ်ရေးပစ္စည်းများနှင့်အရင်းအမြစ်များ
- ၃.၁၃ စီမံကိန်းအဆင့်များ
 - ၃.၁၃.၁ အကြိုတည်ဆောက်ခြင်းအဆင့်
 - ၃.၁၃.၂ တည်ဆောက်ခြင်းအဆင့်
 - ၃.၁၃.၃ လုပ်ငန်းလည်ပတ်ဆောင်ရွက်ခြင်းအဆင့်
 - ၃.၁၃.၄ လုပ်ငန်းလွှဲပြောင်းမှုအဆင့်
- ၃.၁၄ စီမံကိန်းအကောင်အထည်ဖော်မှုအစီအစဉ်
- ၃.၁၅ စီမံကိန်းကုန်ကျစရိတ်
- အခြားနည်းလမ်းရွေးချယ်မှုများ
 - ၃.၁၆ အခြားနည်းလမ်းများအားနှိုင်းယှဉ်ခြင်းနှင့် ရွေးချယ်ခြင်း
 - ၃.၁၆.၁ နည်းလမ်း
 - ၃.၁၆.၂ အခြားနည်းလမ်းများအားနှိုင်းယှဉ်ခြင်းနှင့် ရွေးချယ်ခြင်း
 - ၃.၁၇ ရွေးချယ်ထားသည့်နည်းလမ်းနှင့်ပတ်သက်သည့်ဖော်ပြမှု
 - ၃.၁၇.၁ ရွေးချယ်ထားသည့်နည်းလမ်းဆိုင်ရာ နည်းပညာဖော်ပြမှု
 - ၃.၁၇.၂ အသေးစိတ်ဒီဇိုင်း
- အခန်း ၄၊ စီမံကိန်းပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များဖော်ပြချက်
 - ၄.၁ နိဒါန်း
 - ၄.၂ လေ့လာမှုဧရိယာနှင့်အကန့်အသတ်များအားသတ်မှတ်ခြင်း
 - ၄.၃ ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင်
 - ၄.၃.၁ ရာသီဥတု
 - ၄.၃.၂ လေအရည်အသွေး
 - ၄.၃.၃ ဆူညံသံနှင့်တုန်ခါမှု
 - ၄.၃.၄ မြေပေါ်ရေ (ရေချို နှင့် ရေငန်)
 - ၄.၃.၅ မြေအောက်ရေ
 - ၄.၃.၆ မြေနှင့် ဘူမိဗေဒ
 - ၄.၃.၇ မြေမျက်နှာအသွင်အပြင်
 - ၄.၃.၈ ဇလဗေဒ
 - ၄.၃.၉ ကမ်းရိုးတန်းဇလဗေဒ
 - ၄.၄ ဇီဝပိုင်းဆိုင်ရာပတ်ဝန်းကျင် (ကုန်းတွင်းပိုင်း)
 - ၄.၄.၁ ကုန်းပိုင်းသစ်ပင်များ
 - ၄.၄.၂ ကုန်းပိုင်းတိရစ္ဆာန်များ
 - ၄.၅ ဇီဝပိုင်းဆိုင်ရာပတ်ဝန်းကျင် (ပင်လယ်)
 - ၄.၅.၁ ပင်လယ်သတ္တဝါများ
 - ၄.၅.၂ ပင်လယ်မြက်နှင့်ပင်လယ်ရေညှိ

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

- ၄.၅.၃ ပင်လယ်ကြမ်းပြင်နေသတ္တဝါများ၊ ကမာမျိုးစိတ်များ၊ ပက်ကျိမျိုးစိတ်များ
 - ၄.၅.၄ သန္တာကျောက်တန်းများ
 - ၄.၅.၅ အလွန်သေးငယ်သည့်အပင်များ
 - ၄.၅.၆ ပင်လယ်ငါးများ
 - ၄.၅.၇ ဒီရေတော
 - ၄.၆ သတ်မှတ်ကာကွယ်ထားသည့်နေရာဒေသများနှင့် သဘာဝထိန်းသိမ်းရေးနယ်မြေများ
 - ၄.၇ လူမှုပတ်ဝန်းကျင်
 - ၄.၇.၁ ရခိုင်ပြည်နယ်အကြောင်းခြုံငုံဖော်ပြမှု
 - ၄.၇.၂ ကျောက်ဖြူမြို့နယ်အကြောင်းခြုံငုံဖော်ပြမှု
 - ၄.၇.၃ မဒေးကျွန်းအကြောင်းခြုံငုံဖော်ပြမှု
 - ၄.၇.၃.၁ လုပ်ငန်းကိုင်ငန်းများနှင့်အလုပ်အကိုင်အခွင့်အလမ်းများ
 - ၄.၇.၃.၂ အခြေခံအဆောက်အအုံနှင့်သယ်ယူပို့ဆောင်ရေး
 - ၄.၇.၃.၃ ပညာရေး၊ ကျန်းမာရေးစောင့်ရှောက်မှုနှင့်လူမှုဘဝ
 - ၄.၇.၃.၄ လုံခြုံရေး
 - ၄.၇.၄ ကျေးရွာများအကြောင်း၊ စီမံကိန်းနေရာအနီးရပ်ရွာများ
 - ၄.၇.၄.၁ စစ်တောရွာ
 - ၄.၇.၄.၂ စေမော်ရွာ
 - ၄.၇.၄.၃ ကြံချိုရွာ
 - ၄.၇.၄.၄ သစ်ပုတ်တောင်ရွာ
 - ၄.၇.၅ လူနည်းစုတိုင်းရင်းသားများနှင့်ဌာနေအုပ်စုများ
 - ၄.၇.၆ မြေပိုင်ဆိုင်မှုနှင့်ခလေးထုံးတမ်းအရမြေပိုင်ဆိုင်ခွင့်များ
 - ၄.၇.၇ ရပ်ရွာကျန်းမာရေး
 - ၄.၇.၈ ယဉ်ကျေးမှုနှင့်အမွေအနှစ်များ
 - ၄.၈ ဒေသတွင်းအခြေခံအဆောက်အအုံနှင့်ဝန်ဆောင်မှုများ
 - ၄.၉ ဆိပ်ကမ်းလုံခြုံရေးနှင့် အမျိုးသားလုံခြုံရေး
 - ၄.၁၀ သဘာဝဘေးပျက်စီးမှုများနှင့်ဘေးအန္တရာယ်များ
 - ၄.၁၀.၁ မြေငလျင်များ
 - ၄.၁၀.၂ ရွံ့မီးတောင်
 - ၄.၁၀.၃ ဆူနာမီနှင့် လှိုင်းလုံးကြီးများတရှိန်ထိုးတက်လာခြင်း
 - ၄.၁၀.၄ ရေကြီးခြင်းနှင့်ရေလွှမ်းမိုးမှု
 - ၄.၁၀.၅ ဆိုင်ကလုန်းများနှင့်မုန်တိုင်းများ
 - ၄.၁၀.၆ မြေပြိုမှုများ
 - ၄.၁၀.၇ တောမီးလောင်ခြင်း
 - ၄.၁၀.၈ မိုးခေါင်ခြင်း
- အခန်း ၅၊ ပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှုနှင့် ဘေးအန္တရာယ်ရှိမှုဆန်းစစ်ခြင်းနှင့် လျော့နည်းစေရေး လုပ်ငန်းများ
- ၅.၁ သက်ရောက်မှုဆန်းစစ်ခြင်းနည်းလမ်း
 - ၅.၁.၁ သက်ရောက်မှုများအားဖော်ထုတ်ခြင်း

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- ၅.၁.၂ သက်ရောက်မှုများ၏ အရေးပါခြင်းကို ဆန်းစစ်ခြင်း
- ၅.၁.၃ ဘေးအန္တရာယ်ရှိမှုအားဆန်းစစ်ခြင်း
- ၅.၁.၄ စီမံကိန်းနှင့်ပတ်ဝန်းကျင်အပြန်အလှန်ဘေးအန္တရာယ်သက်ရောက်မှုပြုဇယား
- ၅.၁.၅ လျော့နည်းစေရေးနည်းလမ်းများဖော်ထုတ်ခြင်း
- ၅.၁.၆ ကြွင်းကျန်သက်ရောက်မှုများနှင့် ၎င်းတို့၏ အရေးပါခြင်းကို ဆန်းစစ်ခြင်း
- ၅.၂ ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင်သက်ရောက်မှုများဆန်းစစ်ခြင်း
 - ၅.၂.၁ ရေအရည်အသွေး (ရေချို၊ မြေအောက်ရေနှင့် ပင်လယ်ရေ)
 - ၅.၂.၂ ပတ်ဝန်းကျင်လေအရည်အသွေး
 - ၅.၂.၃ ပတ်ဝန်းကျင်ဆူညံသံ
 - ၅.၂.၄ မြေနှင့်မြစ်ကြမ်းပြင်အနည်အနှစ်
 - ၅.၂.၅ ရာသီဥတုပြောင်းလဲမှု
 - ၅.၂.၆ ဒေသဆိုင်ရာရာသီဥတု
 - ၅.၂.၇ ကမ်းရိုးတန်းဇလဗေဒ
 - ၅.၂.၈ စွန့်ပစ်ပစ္စည်းများထွက်ရှိခြင်း
- ၅.၃ ဇီဝပိုင်းဆိုင်ရာပတ်ဝန်းကျင်သက်ရောက်မှုများဆန်းစစ်ခြင်း
 - ၅.၃.၁ အဏ္ဏဝါဇီဝပတ်ဝန်းကျင်
 - ၅.၃.၁.၁ သတ္တဝါများ
 - ၅.၃.၁.၂ အပင်များ
 - ၅.၃.၂ ကုန်းတွင်းပိုင်းဇီဝပတ်ဝန်းကျင်
 - ၅.၃.၂.၁ သတ္တဝါများ
 - ၅.၃.၂.၂ အပင်များ
- ၅.၄ လူမှုရေးဆိုင်ရာပတ်ဝန်းကျင်သက်ရောက်မှုဆန်းစစ်ခြင်း
 - ၅.၄.၁ လူမှုစီးပွားထိခိုက်မှုဆန်းစစ်ခြင်း
 - ၅.၄.၂ ရပ်ရွာကျန်းမာရေးထိခိုက်မှုဆန်းစစ်ခြင်း
 - ၅.၄.၁ ယဉ်ကျေးမှုအမွေအနှစ်ထိခိုက်မှုဆန်းစစ်ခြင်း
 - ၅.၄.၁ အသက်မွေးဝမ်းကျောင်းထိခိုက်မှုဆန်းစစ်ခြင်း
 - ၅.၄.၁ လူ့အခွင့်အရေးထိခိုက်မှုဆန်းစစ်ခြင်း
- အခန်း ၆၊ ဆက်စပ်သက်ရောက်မှုဆန်းစစ်ခြင်း
 - ၆.၁ ဆက်စပ်သက်ရောက်မှုဆန်းစစ်ခြင်းနှင့်ပတ်သက်၍ ဖော်ထုတ်ခြင်းနှင့် ဆန်းစစ်ခြင်း နည်းလမ်း
 - ၆.၂ အခြားလက်ရှိနှင့်အနာဂတ် ပုဂ္ဂလိကနှင့်ပြည်သူပိုင်စီမံကိန်းများ၊ တည်ဆောက်မှုများ အား ဖော်ထုတ်ခြင်း
 - ၆.၃ အလားအလာရှိသောဆက်စပ်သက်ရောက်မှုများအားဖော်ထုတ်ခြင်း
 - ၆.၄ ဆက်စပ်သက်ရောက်မှုများအားဆန်းစစ်ခြင်းနှင့် တန်ဖိုးထားရသည့် ပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင်ဆိုင်ရာအကြောင်းအချက်များအပေါ်တွင် ၎င်းတို့၏သက်ရောက်မှုများအား ဖော်ထုတ်ခြင်း
 - ၆.၅ ဆက်စပ်သက်ရောက်မှုများအားစီမံခန့်ခွဲမှု

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- အခန်း ၇၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (မာတိကာ)
 - ၇.၁ ရည်ရွယ်ချက်များ
 - ၇.၂ ဥပဒေဆိုင်ရာလိုအပ်ချက်များ
 - ၇.၃ မြေပုံများနှင့်လုပ်ငန်းခွင်အခင်းအကျင်းပြုမြေပုံများ၊ သရုပ်ပြပုံများ၊ ကောင်းကင်ဓာတ်ပုံများအား ခြုံငုံဖော်ပြမှု
 - ၇.၄ အကောင်အထည်ဖော်ခြင်းအစီအစဉ်
 - ၇.၅ စီမံခန့်ခွဲမှုဆိုင်ရာလုပ်ဆောင်ချက်များ
 - ၇.၆ စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်များ
 - ၇.၇ စီမံကိန်းရန်ပုံငွေလျာထားချက်များနှင့်တာဝန်များ
- အခန်း ၈၊ အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်းနှင့် သတင်းအချက်အလက်များ ထုတ်ဖော်တင်ပြခြင်း
 - ၈.၁ စုံစမ်းစစ်ဆေးသည့်အဆင့်တွင် ဆောင်ရွက်ရမည့်အလုပ်များ
 - ၈.၁.၁ အကျိုးသက်ဆိုင်သူများနှင့်ထိတွေ့မှုနည်းလမ်းများ
 - ၈.၁.၁ အကြောင်းအရာများထုတ်ဖော်ပြောဆိုခြင်း
 - ၈.၁.၁ အများပြည်သူဆွေးနွေးပွဲမတိုင်မီကြိုတင်အကြောင်းကြားမှု
 - ၈.၁.၁ ပြည်သူများပါဝင်ခြင်း (နည်းလမ်းအားလုံး)
 - ၈.၂ အစီရင်ခံခြင်းအဆင့်တွင် ဆောင်ရွက်ရမည့်အလုပ်များ
 - ၈.၂.၁ အစီရင်ခံစာရေးသားပြုစုခြင်း
 - ၈.၂.၂ အများပြည်သူနှင့်ဆွေးနွေးပွဲများ
 - ၈.၃ တာဝန်ယူသည့်အဖွဲ့အစည်းများ
 - ၈.၄ စာရွက်စာတမ်း၊ မှတ်တမ်းများထိန်းသိမ်းခြင်း
 - ၈.၅ အများပြည်သူနှင့်ဆွေးနွေးပွဲများအတွက် အကြံပြုချက်များ
- အခန်း ၉၊ နိဂုံးချုပ်နှင့်အကြံပြုချက်များ
 - ၉.၁ နိဂုံးချုပ်
 - ၉.၂ အကြံပြုချက်များ

ရည်ညွှန်းကိုးကားချက်များ
 နောက်ဆက်တွဲများ
 ဓာတ်ပုံမှတ်တမ်းများ

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Executive Summary

1. CONTEXT OF PROJECT

Project Background and Project Proponent

On behalf of the Government of the Republic of the Union of Myanmar, the Kyaukphyu Special Economic Zone Management Committee (KPSEZ MC) awarded the Kyauk Phyu Special Economic Zone Deep Sea Port Project (Project) for the conceptualization, design, build, finance, operation, maintenance and transfer (DBFOMT) of a deep sea port (DSP) (comprising the Yanbye Island port and the Made Island port, including the connection of a bridge and a road of approximately 15 km in length between DSP and an Industrial Park (IP) at the Kyaukphyu Special Economic Zone (KPSEZ)), through a competitive international bidding process to a consortium led by CITIC Group Corporation (CITIC Consortium) in December 2015.

The Project will be implemented by the Project Proponent, namely, Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd. (Company) jointly established by the KPSEZ MC and CITIC Consortium Myanmar Port Investment Limited (Investor), an SPV set up by CITIC Consortium. The formal transaction documents for the Project were entered into in 2020 and the Company was also established in the same year.

This will see the opening up of major global markets across Southeast Asia, China and India with new direct sea routes to East Asia, Africa and America, Middle East and Europe. The Project will generate sustainable economic growth & prosperity for KPSEZ & Rakhine state and Myanmar with professional and leading port services, whilst respecting environment & people's well-being.

Overview of the KPSEZ DSP Project

The Project consists of two island terminals — Made Island Port Terminal of the Project with six (6) berths and Yanbye Island Port Terminal of the Project with four (4) berths. A bridge connecting Made Island to Yanbye Island and a 15 km access road to connect into SEZ Industrial Park (IP) area are also included. The estimated Project footprint is 246 ha (600 acres) with 150 ha for Made Island Port Terminal of the Project and 96 ha for Yanbye Island Port Terminal of the Project.

The components of both terminals include container terminals, multi-purpose terminals, a service terminal, a heavy container yard, a quay structure, berths, temporary construction jetties, quay apron areas, reefer yards, empty yards, general cargo yard, a 66 kV transmission line, a new access road, Container Freight Station (CFS) and a custom inspection stand, storage warehouse/maintenance workshops, a fire station, water treatment plants, a sewage treatment plant, a refueling station, a waste transfer station, office buildings, apartment buildings, dining halls, apron office, HVAC system, truck parking lot, car parking lot, in/out gate complex and gate office, security kiosk, and electricity substation.

An external access road connecting the terminals on Made Island and Yanbye Island to the Industrial Park will be constructed. The length of access road is about 15 km (including the bridge linkage). The access road to Made Island Port Terminal of the Project is a four (4)-lane road and the branch access road to Yanbye Island Port Terminal of the Project is a two (2)-lane road.

A bridge with dual four (4) lanes connecting Made Island to Yanbye Island will be constructed alongside the development of Made Island Port Terminal of the Project.

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

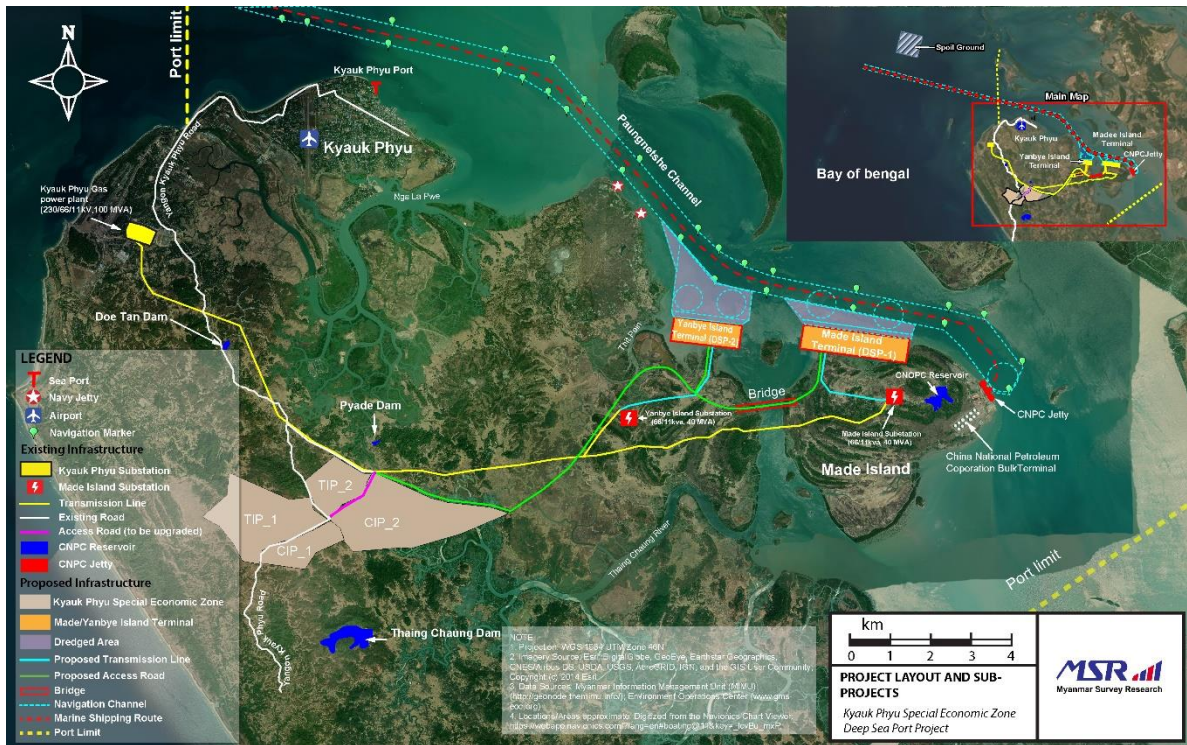


Figure ES- 1: Project Site Layout of KPSEZ DSP

Three Separate ESIA Reports to be Prepared

As stated above, the Kyauk Phyu Special Economic Zone Deep Sea Port Project consists of three interrelated components which are:

- (1) Made Island Port comprising six (6) berths,
- (2) Yanbye Island Port comprising four (4) berths, and
- (3) 15 km access road with bridge to connect into the Industrial Park SEZ area.

The MONREC instructed that, in response to the Project Proposal Report of the Project Proponent, each of the three components is required to conduct an ESIA and prepare a separate ESIA report.

This ESIA Scoping report covers Yanbye Island Port comprising four (4) berths.

Third Party ESIA Consultant Team: MSR Consortium

The Consortium of MSR including Myanmar Survey Research (MSR–Myanmar), Sustainable Solutions Global Pty Ltd (SSG–Australia), Peplow Warren Management (PWM–Brunei), and two independent consultant engineers (Republic of Korea) has been awarded the international tender through a bidding process for a third party independent ESIA consultant and responsible for conducting the Environmental and Social Impact Assessment (ESIA) of Kyauk Phyu Special Economic Zone Deep Sea Port Project.

Project Management Consultant and Technical Advisor

Hatch Associates Ltd, a globally renowned multidisciplinary professional services firm was appointed to act as the Project Management Consultant (the PMC) and technical advisor for the implementation of the Start-up Works—PGTS and ESIA—of the Kyauk Phyu Special Economic Zone Deep Seaport Project.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

2. OVERVIEW OF THE POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

This chapter provides an overview of the legislative framework relating to the Deep Sea Port Project and mainly focuses on pertinent policies, plans, strategies, and applicable laws, along with regulations and guidelines that must be complied with by the Project Proponent when executing all phases of the Project.

A full assessment of all relevant policies, plans, legal, institutional and guidelines concerning the proposed Project will be described and elaborated further in detail within the ESIA Report for this Project. The national policies, plans and strategies comprise the following: National Environmental Policy of Myanmar (2019), Myanmar Climate Change Policy (2019), National Land Use Policy (2016), Myanmar Climate Change Master Plan (2018 – 2030), Myanmar National Waste Management Strategy and Master Plan (2018 – 2030), Myanmar Climate Change Strategy (2018 – 2030), National Sustainable Development Strategy (2009), Myanmar Sustainable Development Plan (2018 – 2030) and National Biodiversity Strategy and Action Plan (2015 – 2020).

An overview of 61 existing laws, rules and procedures relating to the Project are included. These laws comprise Myanmar Special Economic Zone Law (2014), Environmental Conservation Law (2012), Union of Myanmar Public Health Law (1972), Occupational Safety and Health Law (2019), Protection and Safeguarding the Right of the Ethnic Nationalities Law (2015), Myanmar Port Authority Law (2015), Conservation of Water Resources and Rivers Law (2006), Protection and Conservation of Cultural Heritage Regions Law (2019), Environmental Impact Assessment Procedure (2015), and National Environmental Quality (Emission) Guidelines (2015) etc.

The relevant government agencies and their roles and responsibilities related to the Project are detailed and government agencies include the Kyauk Phyu Special Economic Zone Management Committee, the Ministry of Natural Resources and Environmental Conservation, the Ministry of Construction, the Ministry of Labour, Ministry of Agriculture, Livestock and Irrigation, and the Ministry of Home Affairs and etc.

The Project environmental and social policies are also mentioned. International conventions, treaties and agreements related to the environment and social aspects, to which the Myanmar Government is a signatory and have implications for the Project, are described. These international conventions, treaties and agreements include the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biological Diversity (CBD), the International Convention for the Prevention of Pollution from Ships (MARPOL), the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), the United Nations Declaration on the Rights of Indigenous Peoples, the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972 (World Heritage Convention) and the UN Guiding Principles on Business and Human Rights, etc.

Where gaps in local legislation exist, the Project will be implemented according to international best industry practice, including, IFC's Environmental, Health and Safety (EHS) guidelines for Ports, Harbours and Terminals.

3. PROJECT DESCRIPTION AND ALTERNATIVES

Project Description

The Yanbye Island Port Terminal of the Project will be developed nearshore of Yanbye Island (north-eastern). The Project location is at 19° 22' 49.623" N and 93° 37' 25.912" E which is about ten (10) nautical km south east of Kyauk Phyu township. The four (4) berth multipurpose Yanbye Island Port Terminal of the Project will be developed on 96 ha. (230 acres) of foot print area.

These four (4) berths include one (1) multi-purpose terminal and three (3) container terminals and will be constructed in the Project's 4th phase, to handle 2.72 million Twenty-foot Equivalent Unit (TEU) of container and 2.6 million tons of bulk and general cargo annually. To accommodate four berths, the Yanbye Island Port Terminal of the Project has a total quay length of 1,600 m and a width of 600 m.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

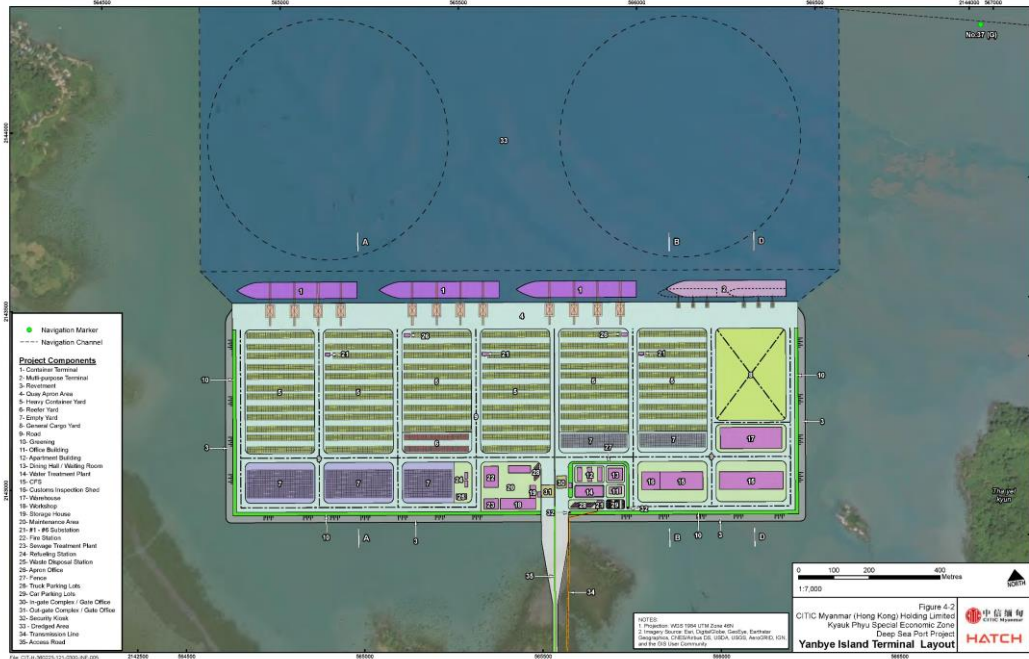


Figure ES- 2: Project Layout of Yanbye Island DSP

The components and work activities of Yanbye Island deep sea port are described in the following table.

Table ES- 1: Project components and work activities of Yanbye Island Deep Sea Port

Project Works and Activities	Quantity / Measurement
Works	
Total Footprint	96 ha
Container Terminal	3
Multi-purpose Terminal	1
Service Terminal	-
Heavy Container Yard	6 (37 ha)
Annual Cargo Capacity (m tons)	2.6
Max Annual Container Capacity (m TEU)	2.72
Quay Structure – Gravity Structure (e.g., Caisson)	1,600 m in length
Berth	4
Temporary Construction Jetty	1
Quay Apron Area	12 ha
Reefer Yard	1.2 ha
Empty Yard	8.6 ha
General Cargo Yard	5.1 ha
66 kV Transmission Line (Port sub-stations to existing sub-stations)	2,965 m
Bridge	Length to be confirmed
New Access Road (13.5 km)	2 lane
Shoreline Protection/Revetment/Rip Rap	2,800 m
Marine Works (Estimated no. of floating navigational aids with anchors)	20 channel markers
Temporary Cofferdam/Diversion Dikes/Flood Trench	4,400 m

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Project Works and Activities	Quantity / Measurement
Site Roads	17.5 ha
Green Area	2.6 ha
CFS and Custom Inspection Stand	6.1 ha
Storage Warehouse/Maintenance Workshop	2
Fire Station	1
Water Treatment Plant	1
Sewage Treatment Plant	1
Marine Supply Base	-
Oil Storage Tank	-
Refuelling Station	1
Waste Transfer Station	1
Office Building	1
Apartment Building	3
Dining Hall	1
Apron Office	1
HVAC System	1
Truck Parking Lot	33
Car Parking Lot	33
In/Out Gate Complex and Gate Office	1
Security Kiosk	1
Electricity Substation	4
Expected Water Consumption	3,000 m ³ /d
Water Line (xx dm)	X m
Peak Workforce - Construction	1,083
Peak Workforce – Operation	1,400
Physical Activities	
Use of CNPC Jetty during Construction	
Land Reclamation	96 ha
Dredging (Side slope of approach channel, turning basin) (Estimated affected plan area & estimated dredged volume)	243 ha (est. 22 Mm ³)
Blasting (as needed)	
Pile Driving (linear meters @ 15 m spacing assumed behind quay wall for crane rail beam), excluding bridges, roads and infrastructure outside of terminal areas	Est. 107 no. of piles
Civil and earthworks (clearing, stripping, grading, contouring and excavation): access roads, transmission line	TBC
Disposal at Sea (Dredged/Spoil Material) Assume that 70% of material to be spoiled, with 30% to be reused for reclamation	Est. 15.4 Mm ³
Shipping Traffic – Construction (average over period) (route from Kyauk Phyu harbour outer anchorage/ pilotage station to the Project site and CNPC jetty)	TBD
Shipping Traffic – Operation (average over vessel sizes) (same route as above in construction)	TBD
Water Pipeline Installation	

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Project Alternatives

The applicable and possible alternatives that have been considered for the Project include:

- Location Alternative
- Orientation Alternative
- Design Alternative, and
- No Project Alternative.

Social, environmental and economic aspects were taken into account when considering alternatives and determining the preferred alternative.

The proposed location could be considered ideal for the Project development. However, multidisciplinary feasibility studies and assessments are strongly recommended prior to the Project commencement.

Any directional and bearing adjustments made to the current orientation could have tangible impacts on the new navigational area and ship movements.

The proposed Yanbye Island Port Terminal of the Project satisfies all the criteria for a 5th Generation multi-purpose terminal, which the Project Proponent aims to develop through international guidance and best practice. Thus, given the scope of multipurpose terminal and design description, there is no comparable port and terminal generation alternative as the Project Proponent favours the latest generation ports and terminals configuration.

The “No Project Option” was also considered to avoid negative impacts to environmental and social aspects. However, by leaving the proposed area without any development will result in the local community and the government (State and Union) losing opportunities to benefit from the development of the Project.

While ports are vital for economic development, the construction, operation, the associated maritime traffic, handling of goods, and road transport may take a heavy toll on the environment through air and water pollution and on the livelihoods and other social aspects of local people. The adverse effects of port developments have been compiled by several organizations including the World Bank, the Asian Development Bank and the International Association of Ports and Harbours. These will be referred to in the development of this EIA.

The ESIA process shall determine the significant impacts of the Project. In order to avoid the “No Project Option”, it is important to ensure that the benefits of the Project out-weigh any negative impacts that are identified in this process. As such, it is crucial to commit and implement all proposed mitigation measures identified in the ESIA Report.

4. DESCRIPTION OF SURROUNDING ENVIRONMENT

This section of the scoping report presents the prevailing environmental and socioeconomic settings in the proximity of the Project site, Yanbye Island north-eastern which is inside Kyauk Phyu Township of Rakhine State.

The Yanbye Island Port Terminal of the Project comprises a number of complex land uses and an approach channel of Thanzit river to accommodate the main terminal and new navigational area. Under the KPSEZ DSP Project scheme, it comprises the Made Island port located at 19° 22' 40.695" N and 93° 39' 24.646" E, Yanbye Island port located at 19° 22' 49.623" N and 93° 37' 25.912" E, and a transport and connection infrastructure (one bridge and 15 km road) between the DSP and an Industrial Park (IP) at the KPSEZ (Figure ES-1). This is the focal Project location, a footprint area of 339 ha, extending from Yanbye Island (north-eastern) and adjacent maritime territory.

The setting EIA (scoping) study limit is based on surveys (both qualitative and quantitative), field trips and preliminary environmental baseline data collection. This was undertaken to address the major EIA disciplines (i.e., Physical, Biological and Social environment). In addition, an in-depth review of the Project design proposal reports, available literature and accessible scientific reports was undertaken. The detailed impact assessment will be undertaken in the next step by emphasizing EIA (scoping) study

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

limits which are in full compliance with Environmental Conservation Department (ECD)'s scoping opinions, procedures and guidelines. The study limits of each individual component of EIA subjects and justifications are presented below.

Surrounding Environment: Physical Environmental Settings

The climate of the Rakhine Basin is comprised of three dominant seasons: the hot season (March to May), the wet season (June to October) and the winter or cool season (November to February). The area is influenced by two tropical monsoon periods: from June to September, the area is influenced by the southwest monsoon, characterized by extensive cloud cover and almost daily precipitation, interspersed with rain squalls or thundershowers. The northeast monsoon occurs from December to April with milder temperatures, lower humidity and less rainfall.

There is no comprehensive air quality monitoring data available for Yanbye Island. Significant industrial emission sources in the airshed can be considered minimal. Those observed noticeable emission sources are from the Kyauk Phyu Gas Power Plant, mobile sources (ship and vehicle traffic) and wood burning. Due to the rural nature of the area, and coastal meteorological influences that aid dispersion, concentrations of criteria air contaminants (CACs) are expected to be low, although ship and vehicle traffic has increased in recent years. However, as part of the baseline ambient air quality data collection, MSR had performed preliminary baseline air quality data collection in those areas of study limits. The seven (7) days long continuous sampling results reveals that SO₂ and NO₂ are identified as air quality issues in the area.

MSR had performed preliminary baseline noise quality data collection in those areas of study limits in parallel to baseline ambient air quality data collection. The two (2) day long intermittent sampling various times of the day, reveals that noise intensity levels are high in the area. This is due to the background noise influenced by weather changes and avia fauna during meteorological setting and diurnal changes.

The Project lies within the Rakhine Coastal Lowlands which spans several states in the western region of Myanmar. The topography of the Yanbye Island is generally level and marshy and the highest peak of the northern frontier of Yanbye Island is well below 150 meters.

The geological context of the proposed Project is to be superimposed on the northern territory, to be exact, north-eastern realm of Yanbye Island of corner section of the continent.

According to the seismic zone map of Myanmar, the proposed Project lies within a strong earthquake zone. Thus, all Project engineering and design shall consider a seismic load that could withstand equivalent modified Mercalli scale of category VIII.

The soil type and characteristics of Yanbye Island is gley and gley swampy soils of category 3 in low lying areas and lateritic soils 6 according to soil category. Thus, there is low bioavailability of phosphorous mineral for plant nutrition, with high potassium and medium ranges of bio-nitrogen. The soil pH varies between 4.5 ~ 6.0. These results will be further confirmed through baseline soil data collection program.

The surface hydrology of Yanbye Island includes freshwater in both the groundwater and surface water resources and seawaters (brackish). Groundwater quality data at the Project area is not available. This data gap will be filled through baseline water quality data collection in 19 locations which includes surface water of both fresh and brackish and groundwater within Aols.

Watercourses in the Project area act as transitional bodies of water, forming part of a network of estuaries and alluvial tidal channels influenced by freshwater runoff, yet remaining partly saline throughout the year.

Tides in the region are classified as semi-diurnal (i.e., two low and two high tides a day). 2014 nautical charts for Kyauk Phyu harbour indicate that the tide for the Yanbye Island Port Terminal of the Project ranges from 3.2 m to 2.6 m during high tide and 1.0 m to 0.6 m during low tide.

The proposed Project is to be established at the topographic confluence of Yanbye and Made Islands. The implications of this for landslide potential, which may impact livelihoods and fatalities, has not been reported to date.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Localized open field burning is an underlying problem for Yanbye Island. Most importantly, manmade wildfire due to farmland encroachment into forests and grasslands, is a customary agricultural practice in Myanmar.

According to the Coastal flood screening tool in the climate central database, global climate change must be constrained to 1.5 degrees Celsius by 2100, to meet the requirements of the Paris Treaty. The coastal flood risk for land in the vicinity of proposed Project and Yanbye Island is identified as significant.

Study Limit for the Physical Environment

The study limit for the Yanbye Island Port Terminal of the Project, that is, the scope of the EIA (scoping), and the Area of Influence (Aoi) for primary and secondary study limit is 1.5 km and three (3) km respectively.

Study limits for the physical environment are determined by factors such as distance from the Project centre, physiochemical interaction and reactions of pollutants and contaminants, Project size and activities in all phases of the Project schedule and EIA cycle. These are considered in relation to Valued Environmental Components (VECs).

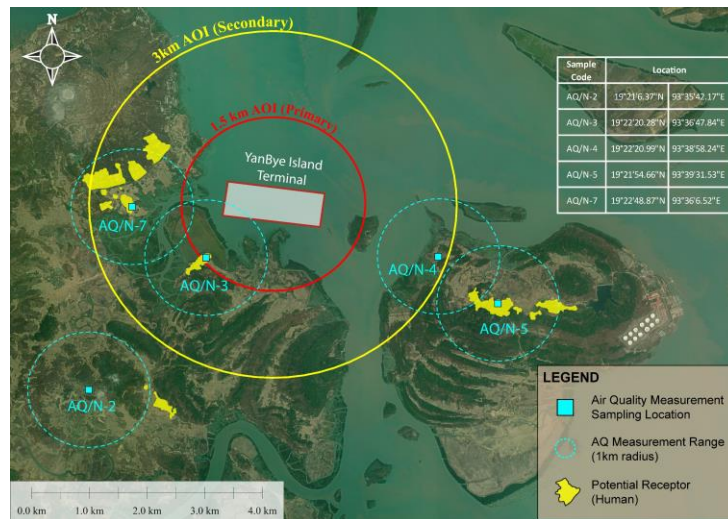


Figure ES- 3: Location of Baseline air and noise data collection inside Project Aoi

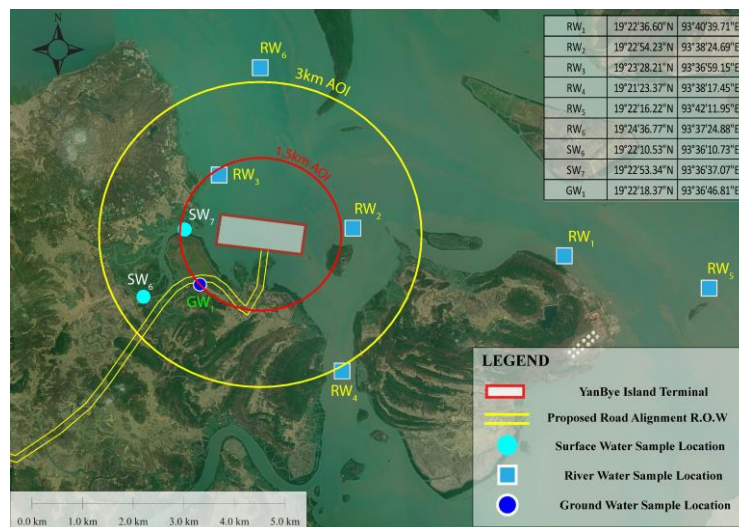


Figure ES- 4: Location of Baseline water quality data collection inside Project Aoi and its proximity

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**



Figure ES- 5: Location of Baseline soil quality data collection inside Project AOI

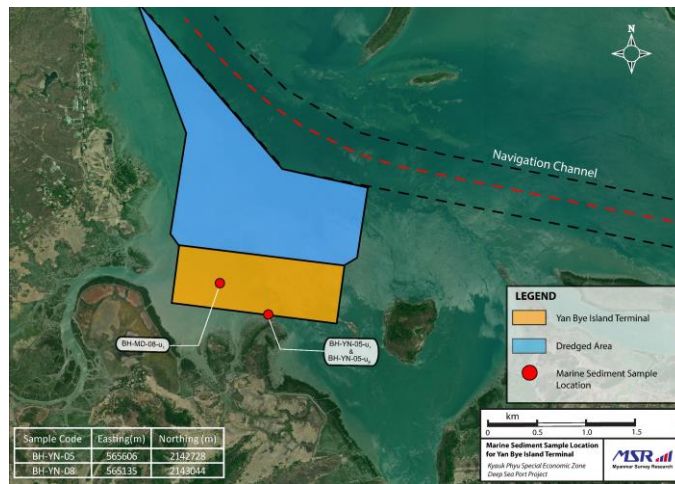


Figure ES- 6: Location of Baseline sediment quality data collection inside Projects footprint

Scope of Study of the Physical Environment

The scope of the study for physical environment of DSP Project EIA will include scientific baseline data collection in two (2) separates seasons (dry and wet), addressing all aspects of the physical environment (i.e., air, noise, water, soil, and marine sediment). These will be carried out within the Project’s footprint and in its vicinity to allow for comparative assessment of pollutant thresholds throughout different Project stages and periodical monitoring program in compliance with Environmental Conservation Department (ECD)’s guidelines. In addition, scientific modelling (i.e., air pollutants dispersion, sediment transport, underwater acoustic, and wave modelling) will also be included in the scope of physical environment studies. The detailed scope and methodologies are comprehensively described in the Terms of Reference section of this scoping report.

Surrounding Environment: Biological Environment Setting

A few small patches of forest left on the Yanbye Island are part of original semi-evergreen forest which is mostly found on the hilly areas. In some forest patches, bamboos are growing and are mixed with other terrestrial plants. Some large trees (e.g., Thingun, Taung thayet, Taung Pin Hnae, Nyuang) remain in high steep slope areas of the hills.

Yanbye Island is located in the Rakhine mangrove region of the Myanmar Coastal Mangroves (Ecoregion Number 78). There are no known designated conservation areas such as key biodiversity areas (KBAs) and other Protected Areas in the areas directly influenced by the Project. Mangroves grow along

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

the coast, especially in soft tidal mud and mud banks of tidal streams along the eastern and southern coast, rather than on the seaward side. The mangroves around the island are a more or less dense forest of moderate height. Mangrove forests on Yanbye Island have similar biodiversity features of Wunbaik Reserved Mangrove Forest, one of the largest remaining mangroves stands in Myanmar.

There is a low population of amphibians, reptiles, and large mammals. Flying Foxes (bats) and Raptors were not identified on the island. Other birds such as Oriental pied hornbills, Red-breasted parakeets, Spotted Doves and Red-whiskered Bulbuls were recorded as common birds (Avifauna) in the study area. There are a small number of insect indicator species including dragonfly and butterfly found in the Project area.

Three species of marine mammals, including IUCN Red Listed Ayeyarwady dolphin, the Indo-Pacific finless porpoise and Indo-Pacific humpback dolphin, are locally reported to inhabit the nearby waters of Yanbye Island. Marine turtles can be found in both the offshore and coastal waters surrounding the island.

Ten (10) species of benthos, thirteen (13) species of mollusks and gastropods samples were found during scoping survey in the Project vicinity. Other benthic habitats existing near the Project area, include muddy shores, sandy shores and rocky outcrops. These areas provide a suitable environment for benthic invertebrates such as prawns, mud crab, and shrimp which are very important commercial species for the local fisheries community.

Ninety-seven (97) species of phytoplankton and 186 species of zooplankton are found in the coastal waters. There are 104 species of bony fishes, two (2) species of sharks and seven (7) species of rays recorded in the adjacent coastal waters of Kyauk Phyu.

Study Limit for Biological Environment

The boundary/scope of marine biodiversity for the Yanbye Island Port Terminal of the Project EIA of KPSEZ DSP is based on the experts' judgment, and primary and secondary data. The direct impact zone is three (3) km radius and the indirect impact zone is ten (10) km radius. The scientific rationale for defining the study limits is because phytoplankton and zooplankton could be mainly affected by sedimentation (turbidity) by project activities.

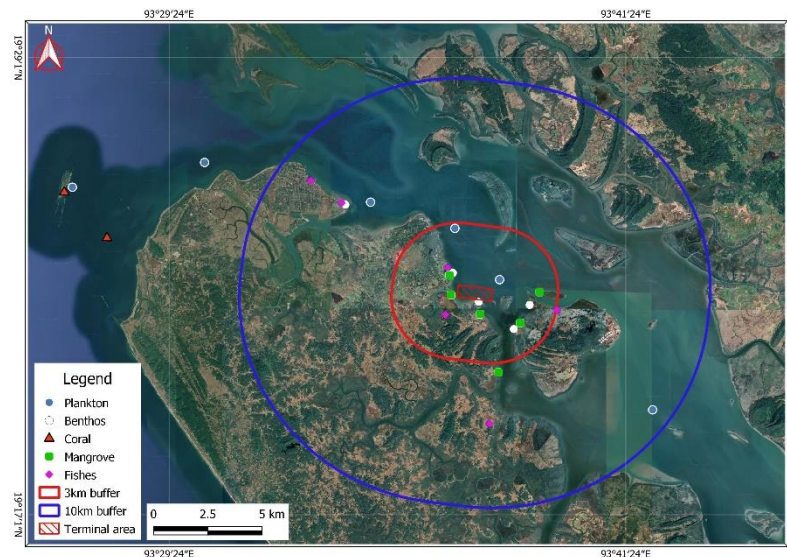


Figure ES- 7: Scope/boundary of marine biodiversity survey for Yanbye Terminal

The scope for the terrestrial biodiversity survey follows scientific methods in collecting data and sampling specimens in designated study areas. Survey range is defined as follows: (i) direct impact (three (3) km radius), and (ii) indirect impact (eight (8) km radius) zone where existing biodiversity is likely to be impacted in both water and on land by the Project activities and actions.

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

In addition, the approximately 27 km survey range will be extended at the upstream and downstream area of the Project along Thanzit River. This has been identified as a marine mammals, marine turtle and coastal birds' survey area. Dolphin and sea turtle communities etc. could be mainly affected by sedimentation, turbidity and noise by Project activities. All survey ranges will cover the different habitats of the survey area.

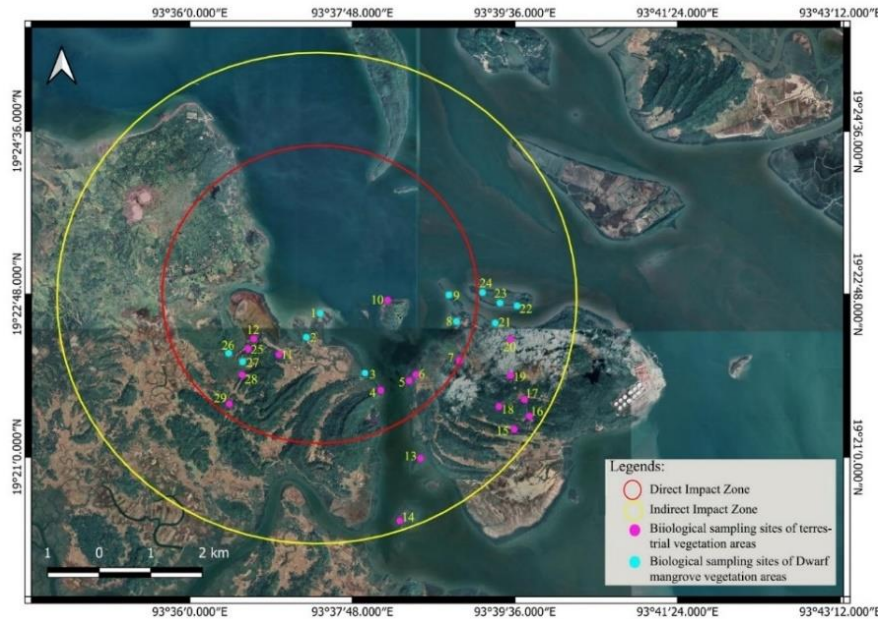


Figure ES- 8: Terrestrial biodiversity study limit for of Yanbye Island Port Terminal of the Project

The biological study will focus on the adjacent areas of the Project site as shown in the map below. Furthermore, the study will also cover the key biodiversity area of the region, namely Wunbaik, Manaung and Myebon.

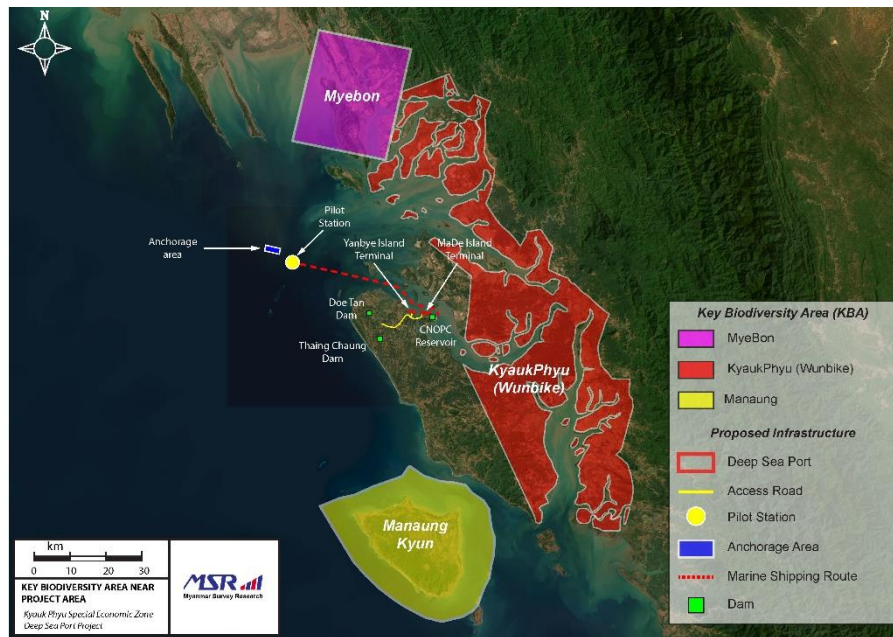


Figure ES- 9: Key biodiversity areas near Project area

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Scope of Study of the Biological Environment

The scope of the study for biological environment of KPSEZ EIA will include scientific baseline data collection for all biological environments and resources for the terrestrial, avian, and marine flora and fauna at project and its surroundings. Baseline surveys and data collection will be undertaken in the pre-monsoon, monsoon, and post-monsoon, based on seasonal variation and resources occurrence. Observed biological baseline data will be recorded and compared against IUCN and national guidelines on biodiversity. It will then be further evaluated and assessed against those surveys. The detailed scope and methodologies are comprehensively described in the Terms of Reference section of this scoping report.

Surrounding Environment: Social Environment Setting

Kyauk Pyu Township

Kyauk Phyu Township, where the DSP Project will take place, is located in Rakhine State. It is about 394 miles (634 kilometres) by road and one hour and 15 minutes by air from Yangon, the chief commercial city of the country. It is bounded by Ann Township in the east, the Bay of Bengal in the west, Yanbye Township in the south and Myebon Township in the north. It has an area of 678.35 square-miles with a width of 54 miles from east to west and a length of 90 miles, from south to north.

Kyauk Phyu is the second largest township in Rakhine State, and comprises two (2) towns, 22 wards, and 249 villages. The majority of the residents in the township belong to the Rakhine ethnic race. There are a number of other ethnicities including Maramagyi, Chin, Kayin and Bamar and some Bengalis. It has a population of 173,275, most of whom follow Buddhism. There are a small number of residents who follow the Christian, Hindu, and Islamic faiths.

The majority of businesses in the township are resource-based. Economic development opportunities in the area include existing onshore and offshore oil and natural gas, construction of deep-sea ports and a special economic zone, commercial and traditional fishing, agriculture with paddy as the major crop and eco-tourism opportunities.

The following tables describe selected data from Kyauk Phyu Township profile:

Table ES- 2: Demographic Data (Kyauk Phyu Township)

Popula- tion	House- hold	House	Ward	Vil- lage Tract	Vil- lage	Ethnics	Religion
173,275	39,514	36,928	22	52	249	Rakhine (95.61%), Chin (0.5%), Bamar (0.16%), Other (3.73%)	Buddhism (95.15%) Christian (0.51%) Hinduism (0.19%) Islamism (4.15%)

Table ES- 3: Land Use (Kyauk Phyu Township)

S.N.	Particulars	Area (in Acre)	Percentage (%)
1	Net Plantation Area	52,692	12.14
	(a) Paddy plantation area	46,090	
	(b) Plantation area of other crops	-	
	(c) Silted-up land	128	
	(d) Garden land	5,348	
	(e) Nipa palms plantation area	1,126	
2	Reserved land area	9,898	2.28
	(a) Paddy plantation area	9,898	
3	Pasture land area	204	0.05
4	Industrial land area	849	0.20
5	Urban area	384	0.09

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

S.N.	Particulars	Area (in Acre)	Percentage (%)
6	Rural area	1,390	0.32
7	Reserved/unreserved forest area	16,876	3.89
8	Forest land area	201,771	46.48
9	Virgin land area	52,154	12.01
10	Uncultivable land area	26,937	6.20
11	Others	70,989	16.35
Total ►		434,144	100.00

Others: Road area, common-owned land of villages, beaches, etc.

Table ES- 4: Major Livelihoods and Socioeconomic Settings (Kyauk Phyu Township)

S.N.	Particulars	Numbers	S.N.	Particulars	Numbers
1	Farmers with plantation	39,240	10	Factories	10
2	Livestock breeders	2,154	11	Companies	37
3	Traders	4,239	12	Hotels	8
4	Fishery businessmen	9,495	13	Motels	2
5	Government employees	3,862	14	Guesthouses	18
6	Stores, food and other shops	476	15	Banks	9
7	Services providers	15,161	16	Petrol/diesel shops	7
8	Operators of other businesses	2,404	17	Markets	5
9	Odd job workers	15,174	18	Mini-stores	2

Yanbye Island

Made Island Port Terminal of the Project, Yanbye Island Port Terminal of the Project and the 15-km Access Road with Bridge of the Project covered by the proposed DSP Project are located in Kyauk Phyu Township, Rakhine State, in the western part of Myanmar.

Yanbye Island Port Terminal of the Project will be constructed on the bank of the Thansit river of Yanbye Island and ten (10) km south east of Kyauk Phyu. The nearest villages to the proposed Project are Kyan Chein, Thit Poke Taung, Say Maw and Sit Taw villages. These four villages have 613 households and a population of about 2,899, all of them Rakhine nationals.

Livelihoods and existing infrastructure on the island

The following information provides existing conditions of businesses, livelihoods, and infrastructure on the nearest four villages of the Project on Yanbye Island:

The main business:	The main business on the island is fishing, with about 75% of all households obtaining a living by fishing. The island has some 250 fishing boats of various sizes and villagers depend on the Thanzit River for fishing.
Agriculture:	Some people grow paddy, but there are only a few farmland owners. Sit Taw and Say Maw villages mostly grow paddy.
Livestock breeding:	Villagers raise ducks, pigs and chickens for their own use and some farmers raise cattle. Some households raise pigs on a small scale—three (3) to five (5) pigs. There are no commercial-scale livestock breeders.
Electricity:	Of the total four villages, Kyan Chein and Say Maw villages do not have electricity. Villagers use solar panels, battery or candles for lighting and firewood for cooking. Monasteries have their own generators.
Water:	Villages get fresh water from hand-dug wells or ponds.
Mobile phones:	Every household has mobile phones, but reception is difficult in some villages.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Rubbish disposal:	Rubbish is buried or burnt within the household compounds. There is no specifically designated places for rubbish disposal. Some households throw the rubbish into the river.
Roads:	Roads in villages are earthen roads and can be used by motorcycles only in the dry season. Roads are not usable during the wet season, and people travel on foot.
Toilets:	A few households have hand-flush toilets, and others have pit latrines or defecate in the woods.
Transport:	Thit Poke Taung and Sit Taw villages are within the naval base compound and there are tarred roads leading from the naval base gate to those villages. Villagers can go to Kyauk Phyu by boat from a river near Thit Poke Taung village but the river does not have a jetty. The road between Kyan Chein and Say Maw villages is a rough earthen road. Cars and motorcycles can use it only in the dry season and transportation is difficult in the area.
Education:	Sit Taw village has a high school while Thit Poke Taung and Kyan Chein villages have a middle school in each village. Say Maw village has a post-primary school. These four villages have total 541 primary children, 258 middle school students and 159 high school students.
Healthcare service:	These four villages do not have a station hospital or private clinic. Villagers from Thit Poke Taung and Sit Taw villages go to the clinic at the naval base and villagers of Say Maw and Kyan Chein villages have to transport serious patients to the Kyauk Phyu Hospital. Each village has a midwife. Hypertension, heart disease, diabetes, diarrhoea, tuberculosis, hepatitis, and anaemia in children are common.
Religion:	Each village has a monastery. Some monasteries have ancient paintings and sculptures of Buddha and ancient pagodas. Villagers have seasonal religious celebrations and ceremonies like robe-offering and lighting. They have novitiate ceremonies in the dry season.

Study Limit for Social Environment

The study limit for the socio-economic assessment is defined as directly and indirectly impacted areas. The directly impacted area includes five (5) villages on the Made Island affected by the Made Island Port Terminal; four (4) villages on the Yanbye Island by the Yanbye Island Port Terminal of the Project; and six (6) villages by the construction of the 15-km Access Road with Bridge, totalling 15.

Inner-zone villages (Directly impacted villages)



Figure ES- 10: Location of villages in the inner-zone for all KPSEZ DSP EIA Project

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

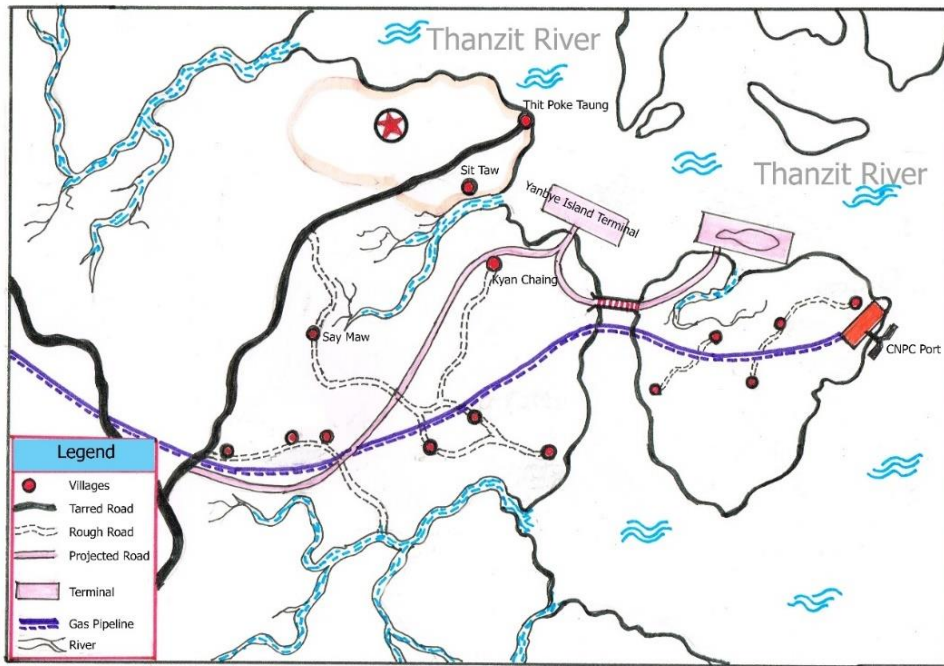


Figure ES- 11: Location of 4 villages for socioeconomic assessment under Yanbye Island Port Terminal of the Project Scheme

Sub-Project	Directly affected villages	Directly affected areas
Made Island Port Terminal of the Project	Five villages on Made Island	Loss of farmlands and fishing grounds
Yanbye Island Port Terminal of the Project	Four villages on Yanbye Island	Loss of farmlands and fishing grounds
Construction of 15-km Access Road with Bridge of the Project	Six villages on Yanbye Island	Loss of farmlands

Outer-zone (Kyauk Phyu Township)

All other areas in Kyauk Phyu Township, apart from these directly affected 15 villages, designated as inner zone, are defined as outer zone.

There will also be indirectly affected stakeholders in downtown Kyauk Phyu Township such as businessmen engaged in fishery, agriculture and transport businesses, and stakeholders who have interest and influence over residents in the inner and outer zones. The latter include government departments, political parties and civil society organizations.

Therefore, the entire Kyauk Phyu township is defined as the study limit for the socio-economic impact assessment, inclusive of all 22 wards and 249 villages living in 39,514 households, with a total population of 173,257.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

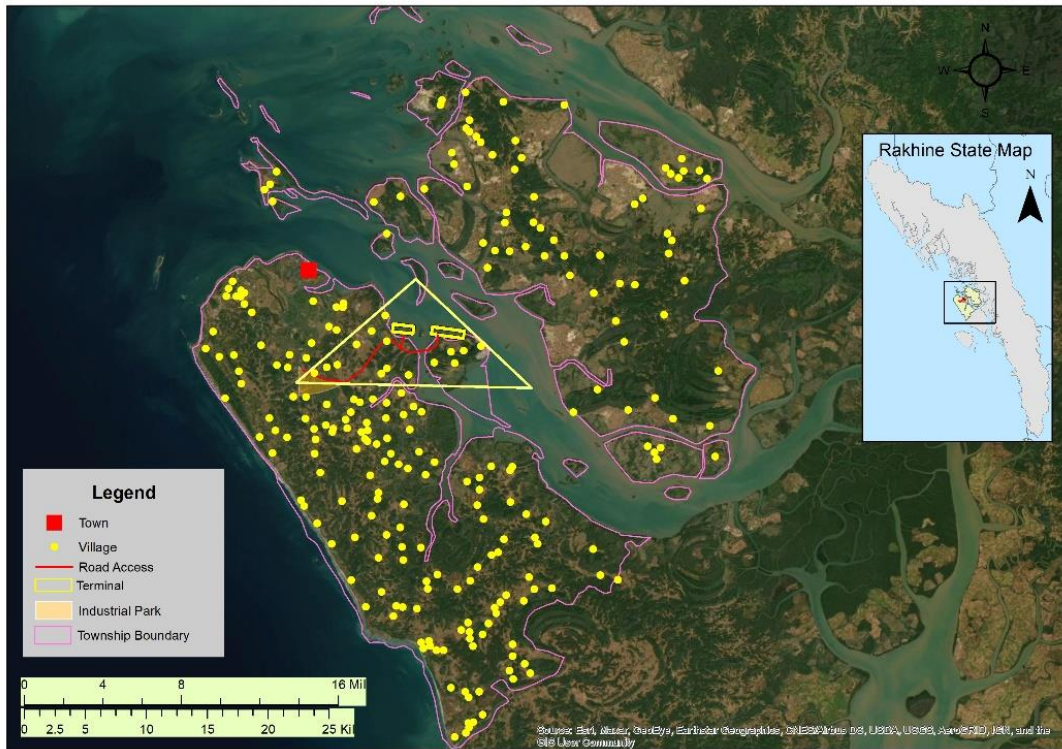


Figure ES- 12: Location of villages in inner zone and outer zone of the Project site

Scope of Study of the Social Environment

The elements of studies of the socio-economic environment can be classified into:

- (1) Socio-economy
- (2) Healthcare
- (3) Cultural heritage (tangible and intangible),
- (4) Human rights, and
- (5) Fishery livelihood.

A socio-economic impact assessment will be carried out and will address these aspects. The methods of studies include:

- (1) Household Survey (Census for inner zone villages and sampling for outer zone villages)
- (2) Key informant interviews (KIIs)
- (3) Focus group discussions (FGDs)
- (4) Workshops (WSs)
- (5) Public consultation meetings.

Inclusion of the human rights study is to address the impacts of the Project on the fishing industry and the livelihoods of those living in the vicinity of the Project. The data collected through the household survey, KII and FGD methods will cover all the five areas of study. The workshops and PCMs will be invaluable in including comments and suggestions from all stakeholders.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

5. KEY POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The physical, biological, and social environmental studies including health and culture will identify the key potential preliminary negative and positive impacts of the Project and will inform the Valued Environmental and Social Components (VECs).

The negative and positive impacts are identified in different project phases: pre-construction, construction and operation phases. Specific expert interviews and discussions shall be organized with the relevant stakeholders (especially, the parties of the Project) and subject matter experts. A proposed transfer management shall be prepared. The details on the issues and proposed actions shall be included in the EIA report.

During the pre-construction phase, Yanbye Island residents will experience the effects of land acquisition and resettlement. During the construction and operation phases, it is anticipated that the Project will have negative impacts such as dust and noise levels, traffic disruptions, solid and liquid construction waste, soil erosion and sedimentation, loss of aquatic habitats, loss of livelihood (fishery), and community and worker safety issues that can be managed effectively with standard construction and operation practices.

The following table shows the summary of negative impacts and relevant mitigation measures for different Project phases. The potential impacts and mitigation measures listed in this scoping stage are not meant to be exhaustive, and will be confirmed throughout the ESIA process, and through consultation and engagement with potentially affected communities, households, and relevant stakeholder groups.

Table ES- 5: List of Major Negative Impacts and Mitigation Measures Identified for Yanbye Island Port Terminal of the Project

Pre-construction Phase

Types of Environments / VECs	Negative Impacts in Pre-construction Phase	Extracts from Mitigation Measures
Physical Environment	<ul style="list-style-type: none"> No sizeable potential impacts are identified during the pre-construction phase. 	
Biological Environment	<ul style="list-style-type: none"> Damaging some plants and small parts of the habitat Disturbance to Biodiversity and Marine Ecosystem 	<ul style="list-style-type: none"> Conducting a geophysical survey and ESIA study carefully to reduce impacting on biodiversity and ecosystem (e.g., foraging, roosting and resting site).
Social Environment	<ul style="list-style-type: none"> Loss of land as source of livelihoods by households and communities Loss of land as source of firewood for household heating (to distribute heat to room) and cooking Loss of pasture land that can impact negatively on livestock breeding in the villages Loss of community infrastructure Loss of community cohesiveness, health, and wellbeing as a result of relocation and resettlement 	<ul style="list-style-type: none"> Managing land acquisition and resettlement for the Project by the Government of Myanmar in accordance with applicable legislation and standards Coordination and communication with Ministry of Home Affairs, as well as relevant Land Committees to ensure Myanmar and international standards and best practices are being met with regards to land acquisition and resettlement

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Construction Phase

Types of Environment / VECs	Negative Impacts Originated from Construction Activities and Works	Extracts from Mitigation Measures
Physical Environment	<ul style="list-style-type: none"> • Water pollution 	<ul style="list-style-type: none"> • Minimization of earth works as much as possible in direct contact with surface water • Installing settling ponds for drainage water from construction • Practicing surface runoff management
	<ul style="list-style-type: none"> • Air pollution 	<ul style="list-style-type: none"> • Incorporating fugitive dust and emission management procedures within the air emissions management plan for the terminal facility site including all infrastructures involved under the Project scheme
	<ul style="list-style-type: none"> • Noise 	<ul style="list-style-type: none"> • Construction works will generally be undertaken within the day. • If unavoidable and work is required at night, the nightshift construction will be undertaken within permissible noise levels. • Noise control measures will be proposed in the EMP.
	<ul style="list-style-type: none"> • Light pollution 	<ul style="list-style-type: none"> • Light abatement measures will be adopted where possible to avoid light pollution.
	<ul style="list-style-type: none"> • GHG emissions 	<ul style="list-style-type: none"> • Instruct drivers to turn off vehicles and engines for long pauses or standby period during operation. This restriction will be enforced and monitored unless the idle function is necessary for security or functionality reasons.
	<ul style="list-style-type: none"> • Microclimate alteration 	<ul style="list-style-type: none"> • Integrate Greening Measures. • Include green and sustainability design principles, where appropriate, in the Project Engineering and Environmental Management Plan.
	<ul style="list-style-type: none"> • Coastal hydrology change 	<ul style="list-style-type: none"> • Clearing of riparian vegetation will be limited to the amount necessary to undertake construction activities in a safe manner
	<ul style="list-style-type: none"> • Traffic congestion 	<ul style="list-style-type: none"> • Developing traffic management plan • Traffic generation will be monitored and managed to minimize congestion on district roads and traffic corridors. • Mitigation measures such as developing traffic management plan will be proposed in the EIA report on the base of investigation findings and impact assessments.
	<ul style="list-style-type: none"> • Waste generation 	<ul style="list-style-type: none"> • Developing construction waste management plan

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Types of Environment / VECs	Negative Impacts Originated from Construction Activities and Works	Extracts from Mitigation Measures
		<ul style="list-style-type: none"> • Adopting 3Rs (Reduce, Reuse and Recycle) practice
Biological Environment	<ul style="list-style-type: none"> • Loss of aquatic habitats for aquatic animals 	<ul style="list-style-type: none"> • Replanting native plant species in reclamation of disturbed areas to restore the loss of habitats.
	Disturbance and displacement of wildlife (both terrestrial and aquatic animals)	<ul style="list-style-type: none"> • Choosing suitable time for dredging work (e.g., tide cycle)
	<ul style="list-style-type: none"> • Impacts on health and wellbeing 	<ul style="list-style-type: none"> • Developing mitigation, management and monitoring measures regarding air pollution, noise, waste generation, and vibration
Social Environment	<ul style="list-style-type: none"> • Loss of livelihoods (Fishery) • Changes to the local infrastructure and services 	<ul style="list-style-type: none"> • Measures will be implemented to restore livelihood of those economically displaced (e.g., Fishery Industry)
	<ul style="list-style-type: none"> • Community Health and Safety (Communicable Diseases) 	<ul style="list-style-type: none"> • Ensuring ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers
	<ul style="list-style-type: none"> • Community Health and Safety (Vector-borne Diseases) 	<ul style="list-style-type: none"> • Exploring methods to minimize transmission of disease through mosquito control measures (e.g., removal of mosquito breeding sites where possible; using larvicides) • Consult with responsible persons from Vector borne Disease Control Programs of corresponding Health Department to help control disease reservoirs
	<ul style="list-style-type: none"> • Community Health and Safety (Traffic Safety) 	<ul style="list-style-type: none"> • Adoption of mitigation measures, protective measures, and safety measures for the most vulnerable project workers and of road users.

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Operation Phase

Types of Environment / VECs	Negative Impacts Originated from Operation and Maintenance Activities and Works	Extracts from Mitigation Measures
Physical Environment	<ul style="list-style-type: none"> • Water pollution <ul style="list-style-type: none"> ○ Discharge of wastewater ○ Accidental spillage of restricted substances ○ Water pollution (Discharge from vessels) 	<ul style="list-style-type: none"> • Following the National and International Compliances, Wastewater discharge and Mitigation measures will be proposed in the EIA report based on the investigation findings and impact assessments • Developing offshore emergency response procedures appropriate to the Project phase established in the spill response plan • Prohibiting vessels from discharging sewage and other wastes within Myanmar waters in order to comply with MARPOL (IMO, 1973/1978) standards and international port policies and procedures
	<ul style="list-style-type: none"> • Air Pollution 	<ul style="list-style-type: none"> • Using electric generators and engines with dry, low emissions technology to maintain NOX and CO concentrations lesser than NEQG and WHO guidelines standards. • Exhaust emission from vehicles are to be monitored within permissible limits and thresholds limit enforced.
	<ul style="list-style-type: none"> • Traffic congestion (Land and Maritime) 	<ul style="list-style-type: none"> • The Project will notify the public about traffic changes prior to works commencing. This will occur before construction starts for the Project and as required where traffic patterns may change. This will be detailed in Traffic Management Plan. • Appointing a qualified person for traffic operations.
Biological Environment	<ul style="list-style-type: none"> • Depletion of biotic resources and loss of biodiversity 	<ul style="list-style-type: none"> • No fishing or catch of marine fauna by workers • Marine vessels must anchor in designated areas (to avoid or minimize disturbance to coral and seagrass communities)
	<ul style="list-style-type: none"> • Declining of seawater quality and eutrophication 	<ul style="list-style-type: none"> • Provision of dikes to hold runoff to settle soil particles • Applying careful planning for spoil disposal management in line with the International Best Practices
Social Environment	<ul style="list-style-type: none"> • Community Health and Safety (Communicable Diseases) 	<ul style="list-style-type: none"> • Ensuring ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Types of Environment / VECs	Negative Impacts Originated from Operation and Maintenance Activities and Works	Extracts from Mitigation Measures
	<ul style="list-style-type: none"> Community Health and Safety (Vector-borne Diseases) 	<ul style="list-style-type: none"> Exploring methods to minimize transmission of disease through mosquito control measures (e.g., removal of mosquito breeding sites where possible; using larvicides) Consult with responsible persons from Vector borne Disease Control Programs of corresponding Health Department to help control disease reservoirs
	<ul style="list-style-type: none"> Traffic Safety 	<ul style="list-style-type: none"> Adoption of mitigation measures, protective measures, and safety measures for the most vulnerable project workers and of road users.

Transfer Phase

Types of Environment / VECs	Negative Impacts Originated from Transfer Activities and Works	Extracts from Mitigation Measures
Social Environment and Economic Environment	<ul style="list-style-type: none"> Dispute over the parties Concession period extension Overusing the facilities of the Project Stability and continuity of public services provided by the Project Labour transfer and Personnel training Transfer and Post-transfer management Obsolete technology 	<ul style="list-style-type: none"> Specific expert interviews and discussions shall be organized with the relevant stakeholders (specially, the parties of the Project) and subject matter experts. A proposed transfer management shall be prepared. The details on the issues and proposed actions shall be included in the EIA report.

Decommissioning Phase

Types of Environment / VECs	Negative Impacts Originated from Decommissioning Activities and Works	Extracts from Mitigation Measures
Physical Environment and Social Environment	<ul style="list-style-type: none"> Cost implication Health and safety issues Environmental impact Availability of resources Stakeholder involvement 	<ul style="list-style-type: none"> The owner(s) of port and all relevant facilities are required to decommission their respective infrastructure at the end of Project's economic life or when it reaches the end of its usable life. Decommissioning involves the timely, safe and environmentally responsible removal of, or otherwise satisfactorily

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Types of Environment / VECs	Negative Impacts Originated from Decommissioning Activities and Works	Extracts from Mitigation Measures
		<p>dealing with, port infrastructure from the Project area</p> <ul style="list-style-type: none"> • Decommissioning can be done by dismantling it onsite or by cutting it into pieces and floating it away on barges. • It is crucial to achieve effective and balanced decommissioning solutions, which are consistent with international obligations, which means the removal and proper disposal of all components of the Project, stabilization and rehabilitation of the Real Property, and restoration of the Real Property to its original state. • The dismantling and decommissioning activities also apply during maintenance and abandonment.

Climate Change Impact

Types of Environment / VECs	Negative Impacts Originated from Construction, Operation and Maintenance Activities and Works	Extracts from Mitigation Measures
Climate Change Impact	<ul style="list-style-type: none"> • GHG emissions (methane, carbon dioxide and nitrous oxide) contribute to climate change associated with the construction and operational maintenance of access road and bridge 	<ul style="list-style-type: none"> • The design of the DSP structure should be mainly focused on the promotion of; <ul style="list-style-type: none"> ○ energy efficiency and energy saving mechanisms, ○ the appropriate selection of materials and resources, ○ the use of renewable energy for their operation needs, ○ proper waste management, the efficient use of water, ○ the integration of vegetation that may work as a carbon capture mechanism. • Throughout the life cycle of the Project, the equipment, work processes, construction materials, and energy consumption should aim to minimize emissions as much as possible.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Other Related Impacts

The following other related impacts shall be assessed and covered in the KPSEZ ESIA.

1. Residual Impact Assessment
2. Cumulative Impact Assessment
3. Transboundary Impact Assessment
4. Human Rights Impact Assessment
5. Livelihood Impact Assessment (Particularly for Fishery)

Positive Impacts

The Project is also beneficial to the local community in a number of ways. The benefits for the community can be enhanced by the Corporate Social Responsibility (CSR) activities. The Project Proponent will allocate budget to support and implement public welfare programs which will cover vocational training, local community development, anti-disaster and emergency rescue, medical care and education, etc.

According to the Project Proposal Report by the Project Proponent, the following aspects can be recognized as potential benefits of the Project for the community.

1. Improved employment, income, and livelihoods in local communities, and corresponding benefits related to community health and wellbeing.
2. Diversification of employment and income opportunities in Project area.
3. Improved education and healthcare for local communities through creation by the Project Proponent of local education facilities and provision of medical facilities.
4. Improved living and working conditions for Project workers.
5. Improved living standards (with corresponding health and education outcomes) due to infrastructure improvements and higher income levels.
6. Improvements to local infrastructure and services as a result of Project contributions.
7. Improvements to local infrastructure and services as a result of Project revenue to local, regional, and national governments.
8. Improved emergency response procedures developed by communities in response to the Project, or provided to local communities by the Project.
9. Development of the local and national economy.

Mitigation Measures and EMP

The KPSEZ DSP Project development presents positive impacts that can be maximised by the implementation of enhancement measures and negative impacts that can be avoided or reduced by means of mitigation measures.

Applicable and practical mitigation measures will be recommended for managing adverse and negative impacts driven by Project activities and actions throughout all EIA stages. In the final step of EIA, environmental and social management and monitoring will be developed in accordance with relevant guidelines, standards and international best practices for all disciplines of ESIA.

6. PUBLIC CONSULTATION AND DISCLOSURE

During the ESIA Scoping Stage, stakeholder engagement activities were carried out. These activities included 127 key informant interviews, nine (9) focus group discussions, two (2) workshops and two (2) public consultation meetings. The stakeholder groups are identified as follows:

Sr. No.	Stakeholder group	Existence		Remark
		Rural	Urban	
1.	Fishermen / fishery workers	●		Local residents (Those directly affected)
2.	Boat owners	●		
3.	Farmers / cultivators	●		
4.	Livestock breeders	●		
5.	Local residents in other livelihoods	●		
6.	Village administrators and village elders	●		
7.	Vulnerable groups	●		

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Stakeholder group	Existence		Remark
		Rural	Urban	
8.	Minority ethnic groups	●		Urban residents (Those who have interest and influence)
9.	Religious leaders	●	●	
10.	Youths (Under 30)	●		
11.	Women	●		
12.	Political parties		●	
13.	Town elders		●	
14.	Civil society organizations (CSOs)		●	
15.	NGOs		●	
16.	International NGOs		●	
17.	Ward administrators		●	
18.	Government departments		●	

Key findings of Public Consultation Meeting in Kyauk Phyu Township (PCM 1)

The following are key findings from the discussions contributed by the participants at PCM 1:

Table ES- 6: Key findings from stakeholders' discussions at PCM 1

Sr. No.	Issue	Comments
Job-related		
1.	Provision of jobs	Priority should be given to locals in providing jobs. In previous projects, local people could not directly apply to the Project officials for jobs. They had to apply through middlemen. So, would like to know who will take responsibility for providing jobs?
2.	Salaries	Would like to know which salary standard will be adopted by the Project—international or Myanmar. If it adopts the Myanmar standard, it is not considered adequate for workers because the daily-wage rate fixed by the State is only MMK 3,000 per day.
3.	Job-related training	Skills training should be conducted by the Project Proponent so that young persons can take part in the Project.
4.		Would like to know who will take responsibility for conducting job-oriented training courses—the Project Proponent or the government. It will be difficult for the local people to be appropriately qualified for the jobs without training.
5.	Workers' issues	Employers usually deny responsibility for workers' issues. Would like to know whether the Project Proponent will open an office in Kyauk Phyu for solving the workers' issues.
6.	Job creation	Factories such as cold storage and garment factories should be set up for creation of jobs.
Livelihoods		
7.	Compensation	Proper methods should be applied in compensating the persons who suffer losses due to the Project. Compensation of the affected persons by: 1. Opening accounts for them 2. Establishing businesses for those who suffer losses.
Road transportation		
8.	Potential road damage	In the construction stage, heavy machines will damage the existing village roads. Would like to know who would take responsibility for repair of roads—government or the Project Proponent.
9.	The right to use the	Would like to know whether local residents have the right to use the

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Issue	Comments
	proposed road	proposed Access Road.
10.	Need to upgrade roads	All roads on Made Island are earthen. They need to be upgraded to concrete or gravel roads.
Land issues		
11.	Land ownership	Villagers do not have the title deeds or ownership documents for most of the lands they work on, although they have ancestral rights.
12.		Land Ownership Law should be amended to be in line with the current situations.
13.	Lack of appropriate law	There is lack of appropriate law and principle for solving the farmers' issues. Appropriate laws should be enacted.
14.	Engagement	Farmers expect to be engaged directly to discuss compensation issues.
15.	Seeking solutions (land prices/ compensation)	Solutions are to be sought in coordination with local residents. Land compensation issue should be solved through coordination among the relevant stakeholders.
Fisheries		
16.	Compensation for fishermen	Would like to know what plans are for compensating the fishers affected.
17.	Loss of fishing grounds	Would like to know the remedial measures for fishers who will become jobless.
Corporate Social Responsibility		
18.	CSR funds and activities	Allocation of CSR funds and CSR activities should be scheduled phase by phase—first five years, second five years, etc.
Experiences from previous project		
19.	Demolition of a mountain	When China National Petroleum Corporation (CNPC) brought down a mountain (in Gone Shein Village), about 21 acres impacting 18 farmers were covered by four (4)-foot-thick mud. As solution could not be provided by government departments, the local people, in collaboration with government departments, formed a committee that presented the matter to CNPC. Eventually a Chinese official came out and said it was not caused by the company. Hence, the issue still remains unresolved.
20.	CNPC road	CNPC has paved a road (Kyauk Maw Gyi-Ywa Ma) during the pipeline project construction, but it cannot be used by local people because it is damaged and has not been repaired.
General		
21.	Fairness	Would like to know who will take responsibility for “fairness, accountability and transparency” if problems arise in environmental, social, economic and livelihood areas.
22.	Subcontractors	Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd. is the main Project Proponent and there will be many sub-contractors. If problems arise, the Project Proponent needs to take responsibility for its subcontractors.
23.	Existing law	The Vacant, Fallow and Virgin Land Management Law (2012) does not protect farmers and instead, causes trouble to farmers.

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Key findings of Public Consultation Meeting on Made Island (PCM 2)

The following are the key findings from the discussions contributed by the participants at PCM 2:

Table ES- 7: Key findings from stakeholders' discussions at PCM 2

Sr. No.	Issue	Comments
Job-related		
1.	Provision of jobs	Residents of Made Island should be given priority in providing jobs since the Project is located in Made Island.
2.		Are there job opportunities for residents of Made Island?
3.	Kinds of jobs	Local people will get only hard labor such as carrying sand and gravel, based on previous experience with past projects. Would like to know what kinds of jobs will be available to the local residents of Made Island, and how unskilled workers will be dealt with as priority.
Livelihoods		
4.	Fisheries	About 80% of the residents on Made Island are engaged in fishing. Residents of Made Island, along with those of other villages like Thit Poke Taung, Sittaw, Say Maw, Ku Lar Bar Taung and War Taung Sakhan villages, rely on fisheries. Would like to know how their requirements will be met if they lose their fishing grounds?
Road transportation		
5.	Roads	All the roads on Made Islands are muddy. Would like to know who will take responsibility for upgrading the roads and whether there is a plan to upgrade inter-village roads on the island.
Land issues		
6.	Compensation per acre	Would like to know how much compensation will be made per acre.
7.	Loss of lands	Would like to know who will take responsibility for the loss of lands that will be covered by the road and bridge construction.
8.	Manipulation of land prices	Speculators bought up farmlands with a hope they will get higher prices in the future. The vulnerable local people have lost their opportunity to receive compensation.
Corporate social responsibility		
9.	CSR fund	It is heard that the Project Proponent will allocate one million US dollars per year for the first five years for CSR. Would like to know whether the fund would be passed direct to the hands of the people for development activities.
10.		To lay down CSR fund for Made Island development with transparency. To pass the CSR fund directly to the hands of the residents.
11.	Electricity supply	Kyauk Maw Gyi and Pan Htain Se villages (on the Made Island) do not have electricity. Would like to know whether there is a plan for electrifying the two villages.
Experiences from previous project		
12.	Fishery	The fishers lost about half of their fishing grounds due to the CNPC project. If the proposed DSP Project is launched, the fishers will lose all their fishing grounds.
13.	Availability of jobs	In the CNPC project, a person had to pay three (3) million kyats per person to the middleman to get a job.
14.	CNPC's promise	The CNPC promised to provide jobs, but in reality, nothing happened.
15.	Grievances	Grievances still remain—farmlands confiscated, Fishers driven out of their

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Issue	Comments
		fishing grounds, etc.—from development of the oil pipeline.
General		
16.	Loss of jetty	The existing jetty at Made Island will disappear when the DSP port is constructed. To build a new jetty for the use of Made Island residents if the existing jetty is lost.
17.	Health care	There is no health care staff such a doctor or a nurse despite the existence of a clinic on the island.
18.	Construction of school buildings	If it rains torrentially, flooding occurs and inundates some schools on the island. Would like to know whether there is a plan to build school buildings for children.
19.	Representation	A representative of the island residents should be selected to liaise with the Project company to discuss losses.

Engagement with government departments

Government departments are also key stakeholders. MSR Consortium engaged a total of 95 officers of 31 government institutions (departments, enterprises and organizations). They were respondents to KIIs, participants at workshops and public consultation meetings and providers of data and information needed for the ESIA for the KPSEZ-DSP Project. The key findings from discussions with government officers are mentioned in the table below.

Table ES- 8: Key findings from discussions with government officers

Sr. No.	Issue	Discussion / suggestion
1.	Cost of government services	Survey of land for the KPSEZ-DSP Project was carried out by the Department of Agricultural Land Management and Statistics from 2014 to 2016. It took place during the President U Thein Sein period (2011-2015). The department had to spend four (4) million kyats on the land survey. Neither the government nor the Project company disbursed any money for this service. The work was suspended, and only resumed about two years ago. Key point: There are no specific funds for government departments providing services for KPSEZ-DSP Project.
2.	Existing conditions	Manipulation of land prices: The price of land in 2016 was 2.5 million kyats per acre. Some business people came to the area when they heard about the planned development of Kyauk Phyu Special Economic Zone, and purchased plots of farmlands. Land use: Currently, farmers are working on vacant and fallow lands without officially applying for permit to work on them. Form 7 is not issued unless they put in an application. Land confiscation is carried out by the Township General Administration Department concerned. Cultivation costs: Current agriculture business is difficult for farmers. They do not have capital, machinery, workers, etc. When they sell their produce, they receive a small profit due to the high cost of inputs. Positive impacts from the previous project: The previous project (CNPC), electrified some villages on Made Island, established a water supply and paved streets with concrete. Electricity supply for DSP Project: The Township Electricity Supply Enterprise (ESE) has built a 150-MW sub-station and a gas-powered 135-MW sub-station is under construction, which is slated for completion in August 2023. On Made Island, there is a 66/11 KV sub-station. All villages except Pan Htain Se and Kyauk Maw Gyi have been lit.

EXECUTIVE SUMMARY

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sr. No.	Issue	Discussion / suggestion
		<p>It is needed to extract 11 KV. But it has not yet been done.</p> <p>Environmental research: Regarding the Thanzit River water, the Township ECD analyzed the sampled water and submitted the results to higher levels in 2018. Monitoring in this regard still continues.</p> <p>The department, together with local residents and humanitarian organizations, is engaged in a cleaning campaign on the Kyauk Phyu Beach every Saturday.</p> <p>The department has kept a database of air quality in Kyauk Phyu since 2020, which is updated monthly.</p> <p>The baseline data collection had been carrying out; the preliminary findings were being obtained to inform the impact assessment for those related subjects. The full baseline data collection is scheduled to be accomplished after getting scoping opinions from ECD</p>
3.	Compensation for loss of livelihoods	<p>Suggestion: The best way to compensate for the loss of livelihoods is provision of jobs. The DSP Project will not be able to provide many jobs but it is expected that factories will be able to provide jobs in large numbers.</p> <p>There are persons working on the virgin and fallow lands, those who have had their lands registered, those who are working the ancestral lands, those who are operating prawn breeding ponds, etc. The rate of compensation per acre should be considered, and priority is to be given to actually affected persons and the vulnerable.</p>
4.	Potential positive impact	<p>If the bridge is spanned, residents on Made Island will have easy access to town, especially in relation to health issues. The villages will be lit 24 hours.</p> <p>If the bridge is built, it will be convenient for our department (Livestock Breeding and Veterinary Department) to travel to Made Island.</p>
5.	Grievances	<p>A Drop box should be placed at the General Administration Department. Grievances should be managed by a committee formed with departmental staff related to health, agriculture, forestry, environmental conservation, veterinary and livestock breeding, etc.</p> <p>Poor families and the disabled do not know how to lodge their complaints. For this, village/ward administrators' offices should help them.</p> <p>A Drop box is not to be trusted. The complaint letter needs to reach the company. The person who lodges a complaint should not be anonymous. Proper contact information is required.</p> <p>The Project company must open an office in Kyauk Phyu where people can submit their grievance letters. The person who lodges a complaint must provide full contact information so that the officer-in-charge can contact him/her. CCTV must be installed at the office. We do not want unscrupulous middlemen between the company and the people.</p> <p>A Drop box can be placed anywhere. The most important thing is the company needs to take action. There should be a committee that represents the people and contacts the Project company.</p> <p>There should be a Legal Services Committee between those affected and the Project company.</p> <p>Instead of keeping drop boxes, it is more convenient to open an office in which there must be a person-in-charge. If this person is from the Project office, there can be bias. There should also be a committee composed of the person (representative of the Project company), and those of government departments, CSOs, etc.</p>

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Community Expert Groups Workshop

A community expert groups workshop was held from November 22nd ~ 25th of 2022 at MSR’s head office, to present and enhance understanding of the processes undertaken and progress of KPSEZ DSP EIA (scoping) report by MSR consortium; and to receive feedback, advice and opinions from the community expert groups of Kyauk Phyu Township. The following are the key items from the four (4)-day workshops:

1. Clarification of scoping reports and the ToR for ESIA for (i) Made Island Port Terminal of the Project, (ii) Yanbye Island Port Terminal of the Project, and (iii) the 15-km Access Road of the Project of KPSEZ DSP Project.
2. Interactive discussions on the contents of draft scoping report of the three (3) sub-projects.

Summary of findings from Community Expert Groups Workshop

The following table summarizes major highlights and responses provided by different expert groups:

Table ES- 9: Highlights and responses from Community Expert Groups Workshop

Sr. No.	Group Name(s)	Highlights and Responses
1.	Political Parties	<ul style="list-style-type: none"> • Certain portions of the revenue from the Project should be specifically allocated to Kyauk Phyu area which is to be used for development purposes. By doing so, the support of the local community can be obtained.
2.	INGO/CSO	<ul style="list-style-type: none"> • Land compensation shall be implemented transparently by the inclusion of local communities and relevant unions. • Equitable and fair employment opportunities shall be allocated between foreigners and Kyauk Phyu Locals. • Systematic redress of complaints and grievances shall be achieved by including local community leaders and relevant unions. • Accountability and responsibility of the Project Proponent is to be made known to the public.
3.	Township/village elders	<ul style="list-style-type: none"> • The local people welcome the Project but they are concerned that the Project will be implemented with no transparency or accountability as seen in previous projects.
4.	Native Made Islanders	<ul style="list-style-type: none"> • The native Made Islanders call the Project Proponent to collaborate with the local community leaders in the course of implementing the Project. • The native Made Islanders call the Project Proponent to coordinate and collaborate transparently when establishing and executing the CSR program.
5.	Government Departments	<ul style="list-style-type: none"> • Project related grievances and complaints presented by locals will be accepted and documented by ECD, then the department shall address them in close collaboration with the stakeholders involved.

7. CONCLUSIONS AND RECOMMENDATIONS

The scoping study was conducted for the investigation of the Environmental and Social Impact Assessment for the KPSEZ Deep Sea Port Project which comprises Made Island Deep Sea Port, Yanbye Island Deep Sea Port and Access Road and Bridge components of the Projects.

Yanbye Island DSP is one of the components of the KPSEZ Deep Sea Port Project and the majority of the findings for each of the sub-projects, including the conclusions and recommendations are similar in nature. Findings and conclusions and suggestions for the Yanbye Island Port Terminal of the Project are summarized below.

- 1) Main challenges and issues need to be studied in detail
- 2) Major alternatives need to be taken into account during EIA study

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 3) Magnitude and extent of the study to impacts
- 4) Stakeholders to be consulted, and
- 5) Important data gaps and constraints.

The following recommendations are put forward to enhance the Environmental Impact Assessment, and identify the benefits of the Project for the community and the sustainability of the Project. These recommendations are divided into three (3) groups, namely, Community Benefits, No Project Option and Environmental and Social Management and Monitoring Plans.

7.1. Community Benefits

Although the Project has potentially negative impacts on the biophysical and social environment, it is also beneficial to the local community in many ways. The benefits for the community could be achieved and enhanced by the Project Proponent implementing the following recommendations.

7.1.1 People's experiences from previous projects in the region

One of the major challenges the current DSP Project is encountering is that the local people have negative experiences relating to the previous projects in the region. Although the local people welcome the proposed Project, they are concerned that the Project will be implemented with no transparency, accountability or community benefit as seen in previous projects. In addition, consideration for benefits to the community should be addressed comprehensively. It is crucial to build trust and positive public sentiment toward the proposed Project.

7.1.2. Land issues

Land resources in the Project area are being used by the local communities according to customary tenure, for a number of purposes to meet local livelihood needs, i.e., agricultural production and grazing. Customary land tenure arrangements predate the creation of legal frameworks; however, customary or ancestral land is not yet formally recognized by the existing land laws. One of the main concerns of the vulnerable local community is not to lose their rights to obtain compensation. Therefore, it is vital for the authority concerned to consider the recognition and protection of customary tenure to alleviate the concerns of the local community on land issues.

Acquisition of land for the Project is likely to occur and it is very important that land compensation, including resettlement and rehabilitation programs should be implemented transparently and properly without compromising the livelihoods and living standards of those who lose their lands. The land acquisition and compensation is KPSEZ MC's obligation and it is recommended that the responsible authority carry out the required processes, studies and consultations with the affected community.

The manipulation of land prices by speculators buying up farmlands using proxy buyers is considered a major issue related to land acquisition in the Project area. This issue is totally different from the customary land issue and hence it should be handled by the authority tactfully.

7.1.3 Livelihood (fishery) impact

The fishery is the major livelihood of those communities on Yanbye Island and surrounding areas and accounts for the livelihoods of 75% of total households. While land loss can be either restituted or compensated to the landlords and farmers, loss of fishing grounds for local fisherman as the result of the development of terminals and navigational areas remain key concerns that need to be addressed. It is necessary to develop and implement mitigation for damages to the livelihoods of fishers in the Project area and its surrounds. The introduction of a livelihood impact assessment (fishery livelihood) as a special topic in the EIA stage will identify potential impacts and mitigation measures.

The community will encounter loss of fishing grounds and farmlands, and opportunities for accessing alternate income sources are recommended to be provided by the Project Proponent and relevant authority, including remedial programs, to support and sustain local livelihoods.

7.1.4. Benefits for the locals

Throughout the stakeholder consultations, political parties, CSOs, town elders mentioned that the Project's benefits should be shared with the local communities. It is expected that the portion of Project revenue should be specifically allocated to native Made and Yanbye Islanders, Kyauk Phyu Township

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

and Rakhine State as a whole, to be used for development purposes. This will receive support from the local community.

7.1.5 Bridge construction beneficial to Yanbye people

It is expected that the bridge to be constructed between Made Island and Yanbye Island will be beneficial to the local communities.

While the local community is excited to see the bridge and road across their village, they are concerned that access to the bridge may not be granted. Local community should be allowed to use the bridge and road. This will improve their lifestyle and ease of transportation between the villages. The usability and accessibility of the road and bridge for the local people should be considered during the design stage without affecting the traffic for the main business.

7.1.6 Job creation by the Industrial Park

Employment opportunities are frequently raised during the interviews with the local residents and stakeholders. They are concerned that there will be limited job opportunities for the local people in the DSP project due to the nature of the work associated with constructing the Project. To create more employment opportunities for the local people, it is suggested that the Industrial Park Project be implemented along with the DSP. The local people have high expectation that Kyauk Phyu SEZ will create job opportunities for them in the Industrial Park and consideration of their employment expectations should be met where feasible.

7.1.7 Rakhine sensitive region

Rakhine is one of the poorest and least economically developed states in the country. There have been extreme episodes of violence in the past. Continued conflict and socioeconomic distress are worsening the humanitarian situation in Rakhine. Many people are in need of humanitarian assistance at the present time. Although this Project can boost economy enormously in the future, improper planning and unscrupulous activities could create or exacerbate existing conflicts. The risk that the Project could intensify the already sensitive local situation should not be overlooked as it may lead to further conflict.

7.1.8 Port security and national security

World events have shown that the maritime transportation system is not immune to safety and security threats. It is more so for the Project as it is situated in a very strategic position, playing an important role in supporting economic development in Myanmar and enabling global trade. An emergency event could pose a threat to common regional interests as well as a national security risk and affect the physical and socio-economic well-being of Myanmar.

The primary objective of national security is to fulfil the national vision and safeguard national interests which include, among others, the protection of the people, their ways of life, welfare and well-being. The Project activities, equipment, and infrastructure can increase community exposure to risks and impacts including the health, safety, and security of the public. Safeguarding of personnel and their properties are to be carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the local communities. Security should be provided in a manner that does not jeopardize the community's safety and security, or the Project Proponent's relationship with the community. The Project Proponent is required to assess risks posed by its security arrangements to those within and outside the Project.

Where the consequences of emergency events are likely to extend beyond the Project property boundary or originate outside of the Project property boundary, the Project Proponent is required to include emergency response plans based on the risks to the health, safety and security of the community and other stakeholders.

The International Convention for the Safety of Life at Sea (SOLAS) is an international maritime safety treaty from the International Maritime Organization (IMO), the maritime arm of the United Nations. The ISPS Code was adopted under the SOLAS Convention. The ISPS Code is a comprehensive set of measures to enhance the security of ships and port facilities. Section 3.1.2 of the Code defines the applicability as, "This Code applies to port facilities serving the ships engaged on international voyages." Section 3.2 further states that, "Notwithstanding the provisions of Section 3.1.2, Contracting Governments shall decide the extent of application of this Part of the Code to those port facilities within

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

their territory which, although used primarily by ships not engaged on international voyages, are required, occasionally, to serve ships arriving or departing on an international voyage.”

Port areas and ships in ports have many vulnerabilities to potential terrorist attack. Port areas have very large landside perimeters to secure, giving terrorists many potential landside points of entry. The ports are located immediately adjacent to resident areas, giving terrorists places to hide while approaching or escaping from port areas. Large numbers of trucks move in and out of ports, making it possible for terrorists to use a truck to bring themselves and their weapons into a port. Many ports harbor fishing and recreational boats that terrorists could use to mask their approach to a target ship. According to the Legal Aspects of Port Management, the Report by the UNCTAD secretariat, Port activities are no exception to the rules of liability, and ports are considered danger zones for the public, which is one of the reasons why access to them is often prohibited. The port authority is not the only agency operating in a port, where numerous individuals and undertakings perform a multitude of activities.

Since the port activities involve handling of dangerous goods, it is required to observe the International Maritime Dangerous Goods (IMDG) Code, which was developed as an international code for the maritime transport of dangerous goods in packaged form, in order to enhance and harmonize the safe and secure carriage of dangerous goods and to prevent pollution to the environment.

The term national security has no universally accepted definition and concepts linked to it are often ambiguous with an emphasis on freedom from military threat.¹⁴ A common understanding of national security focuses on the protection of society and citizens against threat or risk by government or nation states. Maritime ports are the gateway to the ocean and trade routes of the world. As a result, ports are naturally attractive targets to those seeking to facilitate or perpetrate crime or terrorism. Robust port security complements border security, making the ports and coastline less attractive to those who wish to exploit the nation. It covers a wide range of threats, from trespassers and petty theft, through to counter terrorism, state sponsored cyber-attacks and smuggling by Organized Crime and Gang Section (OCGS).

Hence, it is crucial to work closely with Contracting Authority as well as local community to determine the events related to outside or beyond the Project boundary.

7.1.9 Grievances redress mechanism

A grievances redress mechanism (GRM), which is functional, operational, and transparent, shall be established to deal with grievances of the directly and indirectly impacted local communities and other stakeholders. In doing so, the following points shall be considered:

- (1) Multi-channel opinion collection method shall be considered.
- (2) Representatives of multi-stakeholders shall be involved in the process of dealing with each issue for justice and transparency.
- (3) In undergoing the process, including investigation activities, lawyers or persons knowledgeable in laws and representatives of the government departments concerned, which are in a position to take action, shall be allowed to participate.
- (4) The appointed manager is required to communicate with the complainant on the status of complaint handling and resolution.

7.2 “No Project” option

This will see the opening up of major global markets across Southeast Asia, China and India with new direct sea routes to East Asia, Africa and America, Middle East and Europe. The Project will generate sustainable economic growth & prosperity for KPSEZ & Rakhine state and Myanmar with professional and leading port services, whilst respecting environment & people’s well-being. Myanmar, as a partner and host to the port, will also enjoy benefits, that will increase with growing volume in international trade and the development of local and national economy. With this expectation as the goal of the Project, the “No Project” option can be ruled out.

However, implementation of the Project is associated with proper fulfilment of the environmental and socio-economic obligations—mitigation of potential environmental negative impacts and recompense

¹⁴ Babak Akhgar, Simeon Yates, 2013, Strategic Intelligence Management, National Security Imperatives and Information and Communications Technologies, Butterworth-Heinemann

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

for livelihoods that are factually jeopardised by the Project implementation. Proper mitigation measures and enhancement plans will alleviate the concerns of the local residents who wish to go about their businesses as usual, or in better conditions brought about with the enhancement of the positive impacts.

As Rakhine State is a sensitive part of the country, it is essential to win the trust and support of stakeholders—the local communities, political parties, civil society organizations and the ethnic armed organization in Rakhine State. Consideration of the regional context and involvement of these stakeholders are essential in avoiding the “No Project” option.

7.3 Environmental and Social Management and Monitoring Plans

- 7.3.1 The management of the Project Proponent is required to establish a set of policy statements. The policy statements shall be compatible with the context of the Project providing the strategic direction outlining intentions.
- (a) Environmental Policy
 - (b) Health and Safety Policy
 - (c) Social Responsibility Policy
 - (d) Respect for Human Rights Policy
 - (e) Good Governance Policy
- 7.3.2 The Project Proponent shall have the following Environmental and Social Management and Monitoring Plans as per the requirement of MONREC:
- (a) Air quality management and monitoring plan
 - (b) Wastewater management and monitoring plan
 - (c) Noise and vibration management and monitoring plan
 - (d) Solid waste (hazardous and non-hazardous waste) management and monitoring plan
 - (e) Hazardous materials management and monitoring plan
 - (f) Occupational health and safety management and monitoring plan
 - (g) Community health and safety management and monitoring plan
 - (h) Biodiversity management and monitoring plan
- 7.3.3 For the transfer stage, specific expert interviews and discussions are required to be organized with the relevant stakeholders (especially, the parties of the Project) and subject matter experts. A proposed transfer management shall be prepared. The details on the issues and proposed actions shall be included in the EIA report.

8. TERMS OF REFERENCE

The Terms of Reference (ToR) is developed based on the scoping for the EIA investigation in accordance with applicable guidelines issued or adopted by the MONREC. The TOR is a detailed table of contents for the EIA report with descriptions of required studies, activities, methodologies and expert inputs for each section of the report. The ToR covers the following aspects: Introduction, Background Information, Information of the Project Proponent, Policy, Legal and Institutional Framework, Project Description and Alternatives, Description of the Surrounding Environment, Impact and Risk Assessment and Mitigation Measures, Cumulative Impact Assessment, Environmental Management Plan, Public Consultation and Disclosure, and Conclusion and Recommendations. The tables of contents for the EIA report and EMP are presented below.

Table of contents for the EIA report and EMP

Executive Summary (Myanmar and English)

Chapter 1. Introduction

- 1.1 Project Context
- 1.2 Objectives and Rationale of Project
- 1.3 Project Benefits
- 1.4 Presentation of the Project Proponent
- 1.5 Presentation of the Environmental and Social Experts

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Chapter 2. Policy, Legal and Institutional Framework

- 2.1 Project's Environmental and Social Policies
- 2.2 Policy and Legal Framework
- 2.3 Institutional Framework
- 2.4 International Conventions, Treaties and Agreements
- 2.5 International Best Practice
- 2.6 Project's Environmental and Social Standards
- 2.7 Contractual and other Commitments

Chapter 3. Description of the Project and Alternatives

Project Description

- 3.1 Project Description
- 3.2 Project Dimension and Details
- 3.3 Project Location
- 3.4 Scope of Project and Salient Features
- 3.5 Site Access and Site Roads
- 3.6 Terminal Design and Information
- 3.7 Navigation and Shipping
 - 3.7.1 Shipping Channel
 - 3.7.2 Design Vessel
- 3.8 Marine Infrastructure
 - 3.8.1 Approach Channel
 - 3.8.2 Dredging
 - 3.8.2.1 Revetments/Shore Protection
 - 3.8.2.2 Berth
 - 3.8.2.3 Aids to Navigation
 - 3.8.2.4 Anchorage
 - 3.8.2.5 Dredging and Land Reclamation
 - 3.8.2.6 Breakwater/Revetments
- 3.9 Terminal Infrastructure and Facilities
 - 3.9.1 Reclamation/Land Transformation
 - 3.9.2 Power Supply
 - 3.9.3 Telecommunication
 - 3.9.4 Water Supply
 - 3.9.5 Stormwater Management
 - 3.9.6 Water Treatment Plant
 - 3.9.7 Sewage Treatment Plant
 - 3.9.8 Transfer Waste Station
 - 3.9.9 Refuelling Yard
 - 3.9.10 Firefighting
 - 3.9.11 Borrow Sources
 - 3.9.12 Ancillary facilities
 - 3.9.13 Marine Supply Base
 - 3.9.14 Pavement/Landing facility/Construction jetty
- 3.10 Operational Requirements
 - 3.10.1 Handling Technology
 - 3.10.2 IT System
 - 3.10.3 Maintenance
 - 3.10.4 Infrastructure (sub-projects) Summary
- 3.11 Workforce and Accommodation
- 3.12 Construction Materials and Resources
- 3.13 Project Phases
 - 3.13.1 Pre-construction Phase
 - 3.13.2 Construction Phase
 - 3.13.3 Operation (and Maintenance) Phase
 - 3.13.4 Transfer Phase

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 3.14 Project Implementation Schedule
- 3.15 Project Cost

Project Alternatives

- 3.16 Comparison and Selection of Alternative
 - 3.16.1 Methodology
 - 3.16.2 Comparison and Selection of Alternative
- 3.17 Description of the Selected Alternative
 - 3.17.1 Technical Description of the Selected Alternative
 - 3.17.2 Detail Design

Chapter 4. Description of Surrounding Environment

- 4.1 Introduction
- 4.2 Setting Study Area and Limits
- 4.3 Physical Environment
 - 4.3.1 Climate
 - 4.3.2 Air Quality
 - 4.3.3 Noise and Vibration
 - 4.3.4 Surface Water Quality (Fresh and Sea)
 - 4.3.5 Ground Water
 - 4.3.6 Soil and Geology
 - 4.3.7 Topography
 - 4.3.8 Hydrology
 - 4.3.9 Coastal Hydrology
- 4.4 Biological Environment (Terrestrial)
 - 4.4.1 Terrestrial flora
 - 4.4.2 Terrestrial fauna
- 4.5 Biological Environment (Marine)
 - 4.5.1 Marine fauna
 - 4.5.2 Seagrass and Seaweed
 - 4.5.3 Benthos, Mollusks and Gastropods
 - 4.5.4 Coral Reefs
 - 4.5.5 Plankton
 - 4.5.6 Marine Fish
 - 4.5.7 Mangrove
- 4.6 Protected Areas and Ecoregions
- 4.7 Social Environment
 - 4.7.1 Rakhine State Overview
 - 4.7.2 Kyauk Phyu Township Overview
 - 4.7.3 Yanbye Island Overview
 - 4.7.3.1 Business and Job Opportunities
 - 4.7.3.2 Infrastructure and Transportation
 - 4.7.3.3 Education, Healthcare and Social Life
 - 4.7.3.4 Security
 - 4.7.4 Village Profile: Communities in Project Intersection
 - 4.7.4.1 Sit Taw Village
 - 4.7.4.2 Say Maw Village
 - 4.7.4.3 Kyan Chein Village
 - 4.7.4.4 Thit Poke Taung Village
 - 4.7.5 Ethnic Minorities and Indigenous Groups
 - 4.7.6 Land Ownership and Customary Land Rights
 - 4.7.7 Community Health
 - 4.7.8 Cultural and Heritage
- 4.8 Local Infrastructure and Services
- 4.9 Port and National Security
- 4.10 Natural Disasters and Hazards
 - 4.10.1 Earthquakes

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 4.10.2 Mud Volcano
- 4.10.3 Tsunami and Storm surges
- 4.10.4 Flood and Inundation
- 4.10.5 Cyclones and Storms
- 4.10.6 Landslide
- 4.10.7 Wildfire
- 4.10.8 Drought

Chapter 5. Impact and Risk Assessment and Mitigation Measures

- 5.1 Impact Assessment Methodology
 - 5.1.1 Identification of Impacts
 - 5.1.2 Impact Significance Assessment
 - 5.1.3 Risk Assessment
 - 5.1.4 Project-Environment Interaction Risk Matrix
 - 5.1.5 Developing Mitigation Measures
 - 5.1.6 Assessment of Residual Impacts and their Significance
- 5.2 Physical Environment Impact Assessment
 - 5.2.1 Water Quality (fresh water, ground water and sea water)
 - 5.2.2 Ambient Air Quality
 - 5.2.3 Ambient Noise Quality
 - 5.2.4 Soil and Marine Sediment
 - 5.2.5 Climate Change
 - 5.2.6 Microclimate
 - 5.2.7 Coastal Hydrology
 - 5.2.8 Wastes Generation
- 5.3 Biological Environment Impact Assessment
 - 5.3.1 Marine Biological Environment
 - 5.3.1.1 Fauna
 - 5.3.1.2 Flora
 - 5.3.2 Terrestrial Biological Environment
 - 5.3.2.1 Fauna
 - 5.3.2.2 Flora
- 5.4 Social Environment Impact Assessment
 - 5.4.1 Socio-economic Impact Assessment
 - 5.4.2 Community Health Impact Assessment
 - 5.4.3 Cultural Heritage Impact Assessment
 - 5.4.4 Livelihood Impact Assessment
 - 5.4.5 Human Rights Impact Assessment

Chapter 6. Cumulative Impact Assessment

- 6.1 Methodology for identification and assessment of Cumulative Impact Assessment
- 6.2 Identification of other existing and future private and public projects and developments
- 6.3 Identification of the potential Cumulative Impact
- 6.4 Assessment of Cumulative Impacts and their significance on VECs; and
- 6.5 Management of Cumulative Impacts.

Chapter 7. Environmental Management Plan (Table of Contents for EMP)

- 7.1 Objectives
- 7.2 Legal Requirements
- 7.3 Overview maps and site layout maps, images, aerial photos
- 7.4 Implementation schedule
- 7.5 Management Actions
- 7.6 Monitoring Plans
- 7.7 Projected Budgets and Responsibilities

Chapter 8. Public Consultation and Disclosure

- 8.1 Planned activities in the investigation stage
 - 8.1.1 Stakeholder engagement methodologies
 - 8.1.2 Information disclosure

EXECUTIVE SUMMARY

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 8.1.3 Notifications prior to the PCMs
- 8.1.4 Public participation (all methods)
- 8.2 Planned activities in reporting stage
 - 8.2.1 Compilation of ESIA Report
 - 8.2.2 Public Consultation Meetings
- 8.3 Responsible entities
- 8.4 Control of Documents
- 8.5 Recommendations for the PCMs

Chapter 9. Conclusions and Recommendations

- 9.1 Conclusions
- 9.2 Recommendations

References

Appendices

Photo Records

Chapter 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Chapter 1. Context of the Project

1.1 Summary

The Deep Sea Port (DSP) project (Project) comprising the Made Island port, Yanbye Island port and the connection of one bridge and a road of approximately 15 km in length between DSP and an Industrial Park (IP) at the Kyauk Phyu Special Economic Zone (KPSEZ) will be implemented by a joint venture company, namely, Kyauk Phyu Special Economic Zone Deep Seaport Co., Ltd. (Company), established by the Kyauk Phyu Special Economic Zone Management Committee (KPSEZ MC) and CITIC Consortium Myanmar Port Investment Limited (Investor). The Yanbye Island Port Terminal of the Project consists of 4 berths (1 multi-purpose berth and 3 container berths) and will be developed in phase 4 if the Made Island Port Terminal of the Project is successful. The total Project footprint area is 96 ha. The port has a proposed peak annual container capacity of 2.72 million TEUs and a proposed peak cargo capacity of 2.6 million tons annually. This Project will see the opening up of major global markets across Southeast Asia, China, and India with new direct sea routes to East Asia, Africa and America, Middle East and Europe. The Project will generate sustainable economic growth & prosperity for KPSEZ & Rakhine state and Myanmar with professional and leading port services, whilst respecting environment & people's well-being. In addition, the manufacturing base, storage and logistics center can be developed and it becomes Myanmar's gateway to the world.

The Consortium of MSR and International Consultants (MSR Consortium) comprising Myanmar Survey Research (MSR–Myanmar), Sustainable Solutions Global Pty Ltd (SSG–Australia), Peplow Warren Management (PWM–Brunei), and two independent consultant engineers (Republic of Korea) has been awarded the international tender through a bidding process for a third party independent ESIA consultant and responsible for conducting the Environmental and Social Impact Assessment (ESIA) of Kyauk Phyu Special Economic Zone Deep Sea Port Project.

1.2 Introduction

On behalf of the Government of the Republic of the Union of Myanmar, KPSEZ MC awarded the Project for the conceptualization, design, build, finance, operation, maintenance and transfer (DBFOMT) of the DSP (comprising the Yanbye Island port and the Made Island port, including the connection of a bridge and a road of approximately 15 km in length between DSP and IP at KPSEZ), through a competitive international bidding process to a consortium led by CITIC Group Corporation (CITIC Consortium) in December 2015.

The Project will be implemented by the Company jointly established by KPSEZ MC and the Investor. The formal transaction documents (Transaction Documents) for the Project were entered into in 2020 and the Company was also established in the same year.

In accordance with the Transaction Documents, the Investor is authorized to carry out, on behalf of the Company, the Environmental Impact Assessment, the Social Impact Assessment (ESIA) and the Preliminary Geological and Topographical Survey (PGTS) of the Project (Start-up Works). For such purpose, Hatch Associates Ltd., a globally renowned multidisciplinary professional services firm, was appointed to act as the Project Management Consultant (PMC) and technical advisor for the implementation of the Start-up Works, through a competitive bidding process.

The Investor, with assistance of the PMC, launched the international tender process in 2021 to select a qualified and experienced ESIA consultant (ESIA Consultant) for the Project. Through such open, fair and competitive tender process, the Consortium of MSR and International Consultants (MSR Consortium) was appointed as the ESIA Consultant.

The proposed DSP will play an important role in the economic development and prosperity of the country and could be the catalyst to the creation of new two-way regional and international trading routes. This will see the opening up of major global markets across Southeast Asia, China, and India, with new direct sea routes to East Asia, Africa and America, Middle East and Europe. The Project will generate sustainable economic growth & prosperity for KPSEZ & Rakhine state and Myanmar with professional and leading port services, whilst respecting environment & people's well-being. In addition, the manufacturing base, storage and logistics centre can be developed and it becomes Myanmar's Gateway to the World. The DSP development is a key component of the integrated approach by the Myanmar

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Government, incorporating a new Industrial Park (IP). The KP SEZ integrated development will be one of the most strategically important components of Myanmar’s future growth and prosperity.

This Project is an EIA-type Project and according to the Environmental Impact Assessment Procedures of the Ministry of Natural Resources and Environmental Conservation, the Project needs to first undergo Scoping. This document will describe the scoping of the proposed Project and the preparation of the Terms of Reference (ToR) for the Environmental Impact Assessment.

1.3 Overview of the Project

The Project consists of Made Island Port Terminal of the Project with 6 berths and Yanbye Island Port Terminal of the Project with 4 berths, a bridge connecting Made Island to Yanbye Island, and a 15 km access road to connect into KPSEZ Industrial Park (KPSEZ IP) area. The estimated area of total Project footprint is 246 ha (600 acres) with 150 ha for Made Island Port Terminal of the Project and 96 ha for Yanbye Island Port Terminal of the Project. The Project location and site layout are shown in Figures 1-1 and 1-2 respectively.

The components of both terminals include container terminals, multi-purpose terminals, a service terminal, a heavy container yard, a quay structure, berths, temporary construction jetties, quay apron areas, reefer yards, empty yards, general cargo yard, a 66 kV transmission line, a new access road, Container Freight Station (CFS) and a custom inspection stand, storage warehouse/maintenance workshops, a fire station, water treatment plants, a sewage treatment plant, a refueling station, a waste transfer station, office buildings, apartment buildings, dining halls, apron office, HVAC system, truck parking lot, car parking lot, in/out gate complex and gate office, security kiosk, and electricity substation.

An external access road connecting the terminals on Made Island and Yanbye Island to the Industrial Park will be constructed. The whole length of access road is about 15 km (including the bridge linkage). The access road to Made Island Port Terminal of the Project is a four (4)-lane road and the branch access road to Yanbye Island Port Terminal of the Project is a two (2)-lane road.

A bridge (length to be confirmed) connecting Made Island to Yanbye Island will be constructed alongside the development of Made Island Port Terminal of the Project. Based on preliminary investigation, which identified a deep trench, water turbulence and complex construction conditions, the bridge with dual four (4) lanes is proposed.



Figure 1-1: Project Site Layout (Enlarged figure in Appendix 1)

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

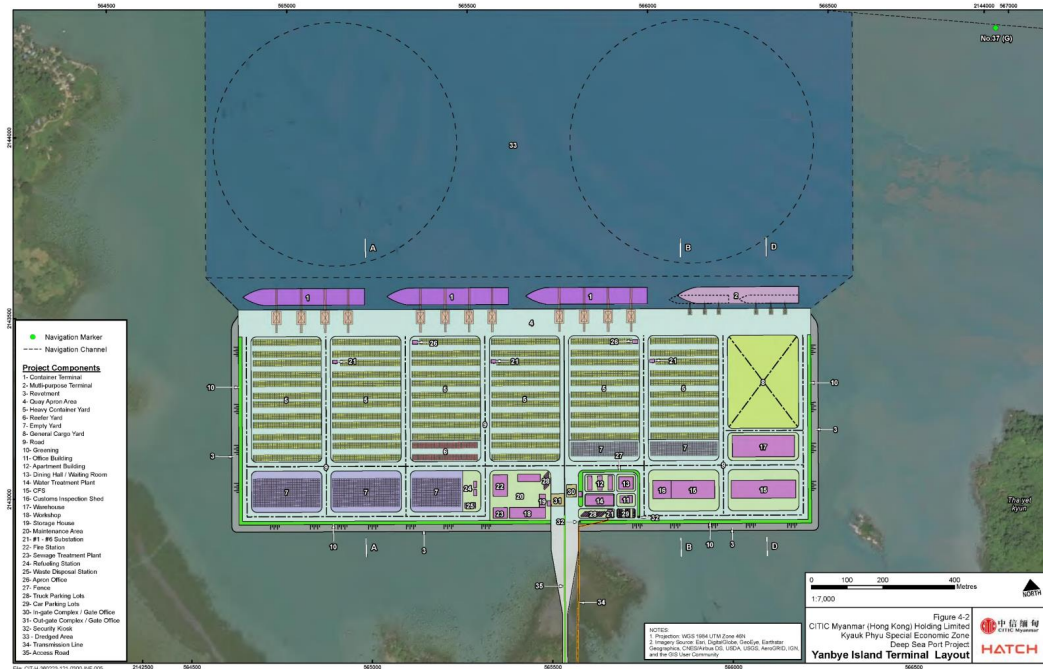


Figure 1-2: Yanbye Island deep sea port layout (See Enlarged Figure in Appendix 2)

1.3.1 Project Phases

The Made Island Port Terminal of the Project will be developed first and Yanbye Island Port Terminal of the Project will be developed subsequently. The Project master program has taken into account the port throughput projection, the feasibility of site construction in phases and construction progress and the plan is proposed in phases as follows:

The Project will be developed in four (4) Phases, other than Phase 1, the commencement of the development of each phase shall be subject to specific conditions in Concession Agreement. The Made Island Port Terminal of the Project consists of 6 berths (2 multi-purpose berths and 4 container berths) and 1 service berth and will be developed in 3 phases. The total design annual capacity of all three phases is 4.25 million TEU of container and 5.2 million tons of bulk and general cargo. For Phase 4, berth No.7 to berth No.10 of Yanbye Island Port Terminal of the Project will be constructed. The total design annual capacity of the Project (4 Phases) is 6.97 million TEU of container and 7.8 million tons of bulk and general cargo. With the increase of container throughput, the above three (3) multi-purpose berths on Made and Yanbye Island Port Terminal of the Projects will be transformed into container berths in sequence. The design annual container capacity of Made and Yanbye Island Port Terminal of the Projects will reach the targeted capacity of seven (7) million TEU.

1.4 Benefits of Project

The Project is a strategic initiative to increase trade (import/export) of containerized goods within the region of ASEAN (Association of Southeast Asian Nations) countries. It is also anticipated that the Project will create access to major global markets across Southeast Asia, China and India by establishing new direct shipping routes to east Asia, Africa, the Middle East, Europe and America. The anticipated benefits of the Project are summarized in Table 1-1.

Table 1-1: Project Benefits

No.	Benefits Category	Description
1.	Environment	<ul style="list-style-type: none"> Promotion of “green ports” The Project will support logistics, technology, and digital industries and encourage sustainable development

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

No.	Benefits Category	Description
2.	Social	<ul style="list-style-type: none"> • Improvements to community services and infrastructure (e.g., roads, bridges) • Supporting social and human rights development (electrification, literacy, employment) • Creating local business contracting opportunities • Enhance local community welfare by Corporate Social Responsibility (CSR) activities covering vocational training, local community development, anti-disaster and emergency rescue, medical care and education, etc.
3.	Economic	<p>The entire Project is expected to provide approximately 1,900 direct employment opportunities at peak construction phase, and approximately 2,900 direct employment opportunities after full operation of the entire Project.</p> <p>Significant direct and indirect economic development opportunities from an estimated US\$ 7.2 Billion Capital Expenditure (CAPEX) (post-Consumer Price Index – CPI) spending of the entire Project.</p>
4.	Technical Innovation	<p>Clean energy technology will be considered during the operation period of the Project including:</p> <ul style="list-style-type: none"> • Electric driven loading and unloading equipment • LNG powered truck and LED lighting • Solar power electrification of Project area and road lighting
5.	Scientific Knowledge	<p>Primary data collection and increased understanding of ethnic land use in the local Project area</p> <p>Contribution to district, state, national and international scientific data sets</p>

1.5 Project Proponent

The Project will be implemented by the Project Proponent, namely, Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd (Company) jointly established by the KPSEZ MC and CITIC Consortium Myanmar Port Investment Limited (Investor), an SPV set up by CITIC Consortium.

Contact Person

Project Proponent	Kyaukphyu Special Economic Zone Deep Seaport Co Ltd (Its major shareholder, CITIC Consortium Myanmar Port Investment Limited, has been authorized to conduct ESIA work)
Project Proponent's address for correspondence	No.(B-02-01), Golden City Business Center, Yankin Road, Yankin Township, Yangon, Myanmar.
Contacts of Project Proponent	<ol style="list-style-type: none"> 1. Mr. Zhu Xuyang (For English), Phone No.: +95-9-259927723 Email: zhuxy20@citic.com 2. U Yan Aung (For Burmese) Phone No.: +95-9-699286688 Email: fuqh@citic.com
Fax	+95-1-9376067
Website	http://www.citicmyanmar.com

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

1.6 Project Management Consultant and Technical Advisor

Hatch Associates Ltd, a globally renowned multidisciplinary professional services firm was appointed to act as the Project Management Consultant (the PMC) and technical advisor for the implementation of the Start-up Works—PGTS and ESIA—of the Project.

The contact information for Hatch Associates Ltd. is provided in the table below:

Project Management Consultant and Technical Advisor Contact Information

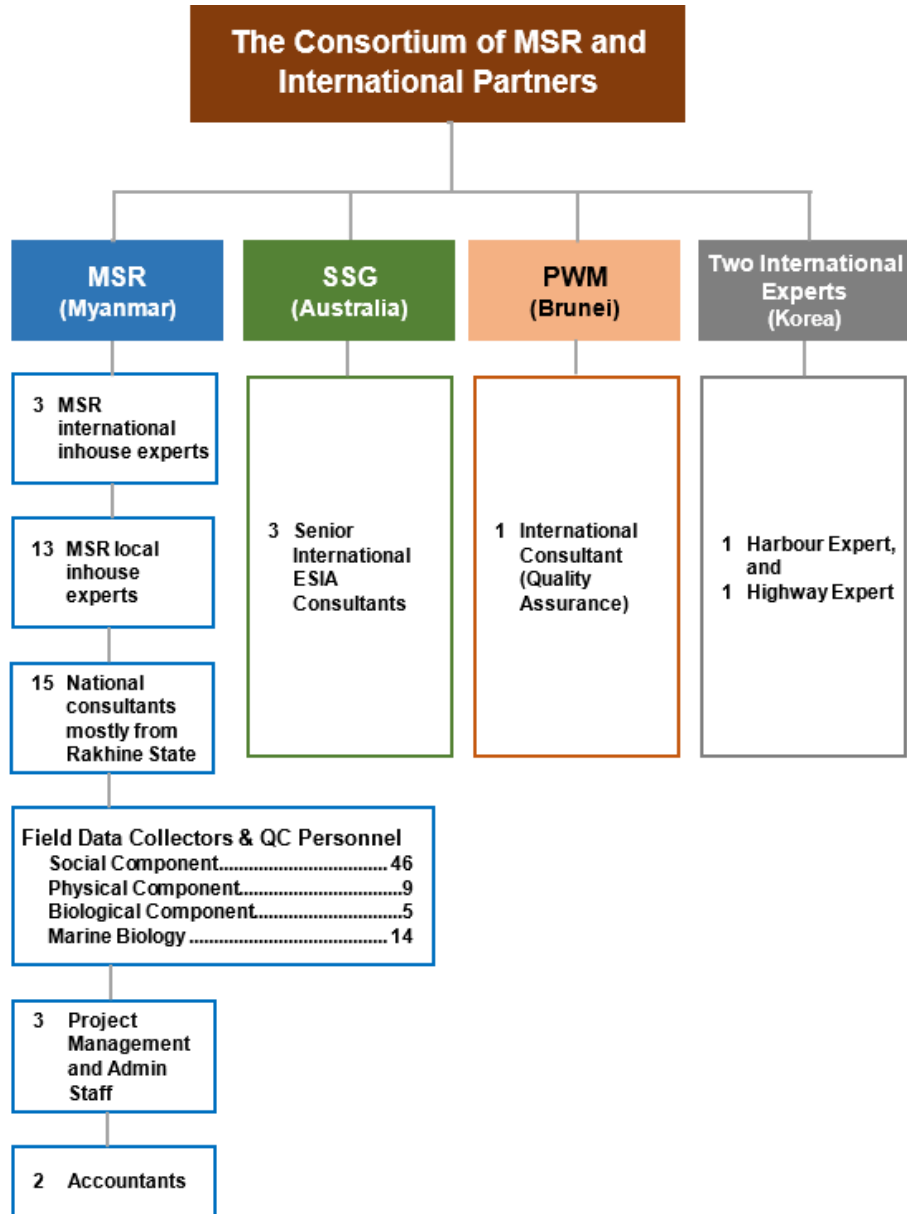
Company Name:	Hatch Associates Ltd.
Corporate Address:	Oceanic Plaza, 1066 West Hastings Street, Suite 400, Vancouver, BC, Canada
Company Website:	www.hatch.com
Company CEO:	John Bianchini
Program Manager Name:	Werner Gous
Program Manager Contact Information:	Werner.Gous@hatch.com
ESIA Lead Contact Name:	Mellissa Winfield-Lesk
Principal Contact Information	mellissa.winfield-lesk@hatch.com

1.7 EIA Consultant Team

The Consortium of MSR including Myanmar Survey Research (MSR–Myanmar), Sustainable Solutions Global Pty Ltd (SSG–Australia), Peplow Warren Management (PWM–Brunei), and two independent consultant engineers (Republic of Korea) will conduct the Environmental Impact Assessment (EIA) of Kyauk Phyu Special Economic Zone Deep Sea Port Project. The organization chart of the Consortium of MSR and International Partners, list of key personnel, profiles of MSR, Partner Companies and Independent Engineering Consultants, team members and their expertise, and Project team qualifications are described in the following diagrams and tables.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

1.7.1 Organization Chart of the Consortium of MSR and International Partners



CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

1.7.2 List of Key Personnel

Sr No	Name	Designation	Company/ Location
Consultants of international partnering company: Sustainable Solutions Global Pty Ltd (SSG) (Australia)			
1.	Dr. Geraldine McGuire	Senior international expert–ESIA	SSG (Australia)
2.	Ms. Bernie Wardle	International Consultant – EIA	SSG (Australia)
3.	Dr. Justine Thorp	International Consultant – SIA	SSG (Australia)
Consultants of international partnering company: Peplow Warren Management (PWM) (Brunei)			
4.	U Than Tun	Senior International Consultant – Quality Assurance	PWM (Brunei)
Independent international JV consultants: Kyong Dong Engineering (Republic of Korea)			
5.	Mr. MOON, Sung-Hyun	International Consultant – Harbour	KDE (Korea)
6.	Mr. SONG, Yoo Min	International Consultant – Highway	KDE (Korea)
In-house international experts: Myanmar Survey Research			
7.	Ms. Marita Schiml	International Expert – Qualitative Research	MSR (Myanmar)
8.	Mr. Patrick Meza	International Expert – Social Research	MSR (Myanmar)
9.	Mr. Vinod Paul	International Expert – Quantitative Research	MSR (Myanmar)
In-house local experts: Myanmar Survey Research			
10.	U Kyaw Hlaing	Project Director	MSR (Myanmar)
11.	U Ko Ko Soe Lwin Thaw	Expert – Overall Management & GIS	MSR (Myanmar)
12.	U Aung Lin	Expert – Social Impact Assessment	MSR (Myanmar)
13.	U Kyan Dyne Aung	Expert – Environmental Management	MSR (Myanmar)
14.	U Phone Myint Tun	Expert – Noise and Vibration	MSR (Myanmar)
15.	Dr. Htay Aung Pyae	Expert – Physical Environment cum. Principal Modelling	MSR (Myanmar)
16.	Dr. Aye Aye Saw	Expert - Impact Identification and Assessment	MSR (Myanmar)
17.	Dr. Ko Ko Toe Lwin Thaw	Expert – Cultural Heritage	MSR (Myanmar)
18.	U Ko Ko Aung	Expert – Cultural Heritage	MSR (Myanmar)
19.	U Thar Moe Aung	Expert – Auto CAD design and engineer	MSR (Myanmar)
20.	U Ye Min Aung	Expert – Water and Air Quality	MSR (Myanmar)
21.	U Thiha Lin	Expert – Water and Air Quality	MSR (Myanmar)
Subject matter local experts			
22.	U Win Tin Win	Consultant – Biological	Myanmar
23.	Daw Pyae Thazin	Port and Harbour Engineer	Myanmar
24.	Daw Thin Thiri Bo	Port and Harbour Engineer	Myanmar
25.	Daw Lwin Ein Daray Moe	Port and Harbour Engineer	Myanmar
26.	U Tin Than	Consultant – Biological	Myanmar
27.	Dr. Maung Maung Kyi	Consultant – Biological (Mangrove and Coastal Conservation)	Myanmar
28.	Dr. Khin Maung Nyo	Consultant – Environmental	Myanmar
29.	Prof. Dr. Tint Swe	Consultant – Marine Biology/Fishery Expert	Myanmar
30.	U Nay Htut Tin	Consultant – Marine Biology	Myanmar

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr No	Name	Designation	Company/ Location
31.	Dr. Aung Myo Hsan	Consultant – Marine Biology	Myanmar
32.	Prof. Dr. San Thar Tun	Consultant – Marine Biology	Myanmar
33.	Prof. Dr. Cherry Aung	Consultant – Marine Biology	Myanmar
34.	Dr. Aung Aung Aye	Consultant – Marine Biology	Myanmar
35.	Dr. Myo Min Tun	Consultant – Marine Biology	Myanmar
36.	Prof. Dr. Zin Lin Khine	Consultant – Marine Biology	Myanmar
37.	Prof. Dr. Yin Yin Htay	Consultant – Marine Biology	Myanmar
38.	Prof. Dr. Htay Aung	Consultant – Marine Biology	Myanmar
39.	U Zaw Linn Htun	Consultant – Marine Biology	Myanmar
40.	U Shine Moe Tun	Consultant – Marine Biology	Myanmar
41.	U Sein Than Lin	Consultant – Marine Biology	Myanmar
42.	U Sa Aung Than	Consultant – Marine Biology	Myanmar
43.	Dr. Ko Myint	Consultant – Terrestrial and Aquatic (Zoology)	Myanmar
44.	Dr. Kyaw Zay Moe	Consultant – Terrestrial and Aquatic (Botany)	Myanmar
45.	U Saw Thura Min	Consultant – Botany	Myanmar
46.	U Soe Min Naing	Consultant – Forestry	Myanmar
47.	U Thet Naing Aung	Consultant – Zoology	Myanmar
48.	Dr. Thet Su San	Expert – Public health	MSR (Myanmar)
49.	Dr. Than Htut	Consultant – Public health	Myanmar
50.	U Tun Myint	Consultant – Lawyer (Policy & Legal)	Myanmar
51.	U Oo Kyaw Maung	Expert – Policy & Legal	Myanmar
52.	Daw Mra Sabai Nyun	Expert – Socio-economics	Myanmar
53.	Daw Eaint Phu Phu Ngal	Expert – Socio-economics	Myanmar
Project Management and Document Control			
54.	U Ye Nyunt	Research Director and Report Writer	MSR (Myanmar)
55.	Daw Thazin Tin Win	Financial Controller	MSR (Myanmar)
56.	Daw Nilar Aung	Admin and Logistics Manager	MSR (Myanmar)
57.	Daw Mi May Phyu Phyu Sin	Project Coordinator	MSR (Myanmar)
58.	Daw Nyein Nyein Myo	Document Control and Report Preparing	MSR (Myanmar)
59.	Daw Win Win Mar	Document Control and Report Preparing	MSR (Myanmar)
60.	U Ohn Kyaing	Field Team Manager	MSR (Myanmar)
61.	U Htay Min	Field Team leader	MSR (Myanmar)
62.	U Min Min Htun	Field Team leader	MSR (Myanmar)
63.	Daw Wutyi Soe	Field Team leader	MSR (Myanmar)
64.	U Maung Maung Soe	Data Management	MSR (Myanmar)

1.7.3 Profiles of MSR, Partner Companies and Independent Engineering Consultants

1.7.3.1 Myanmar Survey Research Company Limited

Myanmar Survey Research Company Limited (MSR), was created in 1981 and officially registered in 1995, and is the first company established in the research industry of Myanmar. Founded and operated by a Myanmar citizen of Rakhine origin, MSR is the largest and leading company in market research, business consultancy and ESIA, with a permanent staff of 156, and about 300 part-timers.

Although it started off as a market and industrial research company, its services have diversified into four main areas:

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Services provided by MSR:

Main service and Focus	Managed by:
ESI Assessments (FOCUS: Initial Environmental Investigation (IEE), Environmental and Social Impact Assessments (ESIA), Environmental Management Plan (EMP) and Monitoring Plan)	U Ko Ko Soe Lwin Thaw (Myanmar)
Social Research (FOCUS: Study of socio-economic livelihood, employment, health, opinion polls etc.)	Mr Patric Meza (Australia)
Industrial Research and Consultancy Services (FOCUS: Study of businesses and market sizes, value chains, price analysis, feasibility studies, counselling service for Foreign Direct Investors)	U Nyana Soe (Myanmar) Mr Eiichiro Takinami (Japan)
Marketing Research (FOCUS: Study of consumer behavior and trends, product testing, etc)	Ms Marita Schimpl (Germany)

The ESIA Department, formed in 2008, started its environmental and social impact assessments in the oil exploration sector for China National Offshore Oil Corporation (CNOOC) of China in the same year.

Today, the ESIA Department provides services for more than 50 projects, at individual business level and national level (such as Infrastructure, Energy, Industrial Zones) for Initial Environmental Examination (IEE), Environmental and Social Impact Assessment (ESIA), Environmental Management Plan (EMP) and Monitoring Plan.

To be able to provide services effectively, MSR was formed not only with Myanmar and Rakhine ethnic nationals, but also with international experts from Germany, Australia, Japan, India, the Philippines and Malaysia, supported by a team of data specialists and field experts.

MSR is the only corporate member of ESOMAR (European Society for Opinion and Marketing Research) in Myanmar.

ADDRESS OF LEADING CONSULTANT COMPANY (MSR)

Name of company:	Myanmar Survey Research Co Ltd
Registration:	Myanmar
Address:	Registered Office: 55, Mahabandoola Garden Street, Kyauktada Township, Yangon, Myanmar
	Head Office, Yangon: Central Railway Station building, Mingalataung-nyunt Township, Yangon
Phone / Fax:	Phone: +95-1-8370464
	Fax: +95-1-8254263
Email:	msr@myanmarsurveyresearch.com

1.7.3.2 Sustainable Solutions Global Pty Ltd. (SSG) (Australia)

Established in 1992, Sustainable Solutions Global Pty Ltd (SSG) is a long standing Australian environmental and social consultancy, with offices in Malanda, Cairns and Brisbane. SSG has specialist staff with expertise in environmental impact assessment of all sectors, flora and fauna, aquatic ecology, Aboriginal archaeology, historic heritage, natural resource management and other disciplines. SSG has also developed close ties with a pool of experts in related fields.

SSG offers a wide range environmental services including environmental impact assessment and development approvals, construction environmental management, risk assessment, ecological survey and assessment, vegetation management, historic heritage and Aboriginal archaeological assessment, auditing, training and Environmental Management Systems.

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

SSG's broad client base includes state and local government, statutory authorities, small- and large-scale businesses and individual landholders. SSG draws on a wealth of experience and wide expertise to develop environmental solutions. It is ensured that the SSG team remains at the forefront of profession in terms of skills training, scientific knowledge, environmental technology and regulatory changes.

SSG is underwritten by our ISO9001 certified Quality Assurance System.

ADDRESS OF INTERNATIONAL PARTNERSHIP COMPANY (SSG)

Company Name:	Sustainable Solutions Global Pty Ltd (Australia)
Company Address:	Po Box No 73, Malanda, Queensland 4885, Australia
Phone:	+ 61 7 4096 6057
Fax:	+ 61 7 4076 6549
Mobile:	+ 61 409768840 (Geraldine McGuire)
Email:	gmm@sustainablesolutionsglobal.com
	info@sustainablesolutionsglobal.com

1.7.3.3 Peplow-Warren Management (PWM) (Brunei Darussalam)

Peplow-Warren Management is registered with the Ministry of Development, Brunei Darussalam, as Quality Management Consultancy services providing company. PWM is actively providing training and consultancy services in Quality Management Systems, Environmental Management Systems, Occupational Health and Safety Management Systems and Social Accountability standards to private and government sectors since 1991.

PWM is a member of Peplow-Warren group of companies which comprises

- Peplow-Warren & Associates United Kingdom
- Peplow-Warren Sdn Bhd Malaysia
- Peplow-Warren Management Brunei

Peplow-Warren & Associates was established in the early 1980s and is the leading management consultancy in United Kingdom. Operations in this region started in late 1980s.

The consultants have extensive experience and expertise in developing Environmental Management System (EMS) in various industries and also have conducted EMS Audits for their clients. The consultants are certified by the International Register of Certificated Auditors (IRCA), UK.

ADDRESS OF INTERNATIONAL PARTNERSHIP COMPANY (PWM)

Company Name:	Peplow-Warren Management
Company Address:	Unit 8, 2 nd Floor, Komplek Haji Tahir Dua, Jalan Gadong, Bandar Seri Begawan BE3519, Brunei Darussalam
Phone:	+673 2420690
Fax:	+673 2420691
E-mail:	thantun@brunet.bn

1.7.3.4 Independent International J-V Consultants (Republic of Korea)

Myanmar Survey Research has also joint-ventured with two independent Korean consultant engineers experienced in related project activities and also in the Myanmar environment.

Mr MOON, Sung-Hyun (Consultant Engineer – Harbour)

Mr. Moon, Sung-Hyun, who holds B Sc (Civil Engineering) from Hanyang University (Korea), is a highly qualified engineer with more than 22 years of experience especially in the field of Civil Construction & Management as well as Engineering design and Construction management for Infrastructure projects and he performed and was involved in Highway, Housing, Industrial Complex and Urban Development Projects.

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

These kinds of Projects involved the Surveying and Investigation, Water supply and Drainage, various Structures, Soil investigation, Quality Control, Environmental Social Impact Analysis etc.

He has also had experience in:

- Review for Hydro-Oceanographic survey
- Review for Coastal Processes
- Review for Marine Facilities
- Review for Geotechnical Investigation
- E&S Scoping And Charging For Overall Components while conducting Feasibility study for Jetty Construction in West Java, Indonesia for PT POSCO-Krakatau Steel. In the 12-month survey, he was a co-Team Leader.

He has had experience in technical assistance, design and construction management of civil works. Also, he carried out consulting services for design and construction of 17 Packages of Construction Management Service for CORE TEAM CONSULTANT (CTC) to support the Project Management Unit for Western Indonesia National Roads Improvement Project (Funded by IBRD) and served as the Technical Consultant for **Yangon Elevated Expressway** (Funded by IFC), Detailed Engineering Design for **Outside Infrastructure for Korea-Myanmar Industrial Complex Project**, Feasibility Study for Access Infrastructure Project for **Korea-Myanmar Industrial Complex** (Funded by K-EDCF), Consulting Service for Establishment of Master Plans for **Yangon-Hanthawaddy-Bago Corridor** and Yangon South Western Regional Development (Funded by KOICA), Pre-F/S for Access Infrastructure of **Nyaung Hnit-pin Industrial Complex Project** etc. as the project manager at KONGYONG Engineering Co., Ltd.

As experienced in a number of projects in Myanmar, Mr. Moon, Sung-Hyun is also an expert in Myanmar environmental matters.

ADDRESS OF INDEPENDENT INTERNATIONAL J-V CONSULTANT
(Mr MOON, Sung Hyun)

Address:	No 2006 Pyay Garden Office Tower 346, 354 Pyay Road, Sanchaung Township, Yangon, Myanmar
Phone:	+ 95 1 505953
E-mail:	lightingmoon@hanmail.net

Mr SONG, Yoo Min (Consultant Engineer – Highway)

Mr. SONG, Yoo Min is a Highway Expert, who has obtained B Sc specializing in Civil and Environmental Engineering from Dongguk University, Republic of Korea. The company he is currently working for is **Kyong Dong Engineering Co Ltd**, which is involved in a number of development Projects in Myanmar such as **Dala New Town Development Project, Dala New Town Water Supply Project**, etc. Mr Song, Min Yoo has also worked for projects in Myanmar such as Consultancy Services for Myanmar Feasibility Study and Basic Engineering Design for **Central Expressway (Yangon-Mandalay) Project** (Phase I Feasibility).

He has had engineering and consultancy experiences in nearly 20 projects in **Korea, Myanmar, Cambodia and Algeria**. He is also an expert engineer having well-versed knowledge in Myanmar construction and environmental affairs.

He has been involved in conducting site survey, topographical survey, analyzing related regulations and policies on technical standards and specifications, conducting detailed design activities including horizontal and vertical alignment, typical cross-section and super-elevation, earthwork (cut and fill) and drainage of road facilities, drafting instruction manuals for good practices for maintenance of roads for the guidance of the employer, and preparing detailed designs, drawings, technical specification, and BCQ specifications and site investigations.

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

ADDRESS OF INDEPENDENT INTERNATIONAL J-V CONSULTANT

(Mr SONG, Yoo Min)

Address:	No 2006 Pyay Garden Office Tower 346, 354 Pyay Road, Sanchaung Township, Yangon, Myanmar
Phone:	+ 95 1 505953
E-mail:	sym642@naver.com

1.7.4 Team members and their expertise

Sr	Name	Project role	Expertise
Review Team (Consultants)			
1.	U Win Tin Win	Review Team member	Consultant (Biological)
2.	U Kyaw Hlaing	Coordinator	Project Director
3.	U Tin Than	Review Team member	Consultant (Biological)
4.	Dr. Maung Maung Kyi	Review Team member	Consultant (Mangrove and Coastal Conservation)
5.	Dr. Khin Maung Nyo	Review Team member	Consultant (Environmental)
6.	Ms. Marita Schimpl	Review Team member	Consultant (Qualitative Research)
7.	Mr. Vinod Paul	Review Team member	Consultant (Quantitative Research)
International Review Team (Consultants)			
8.	Dr. Geraldine McGuire	International Review	Consultant (ESIA) – SSG
9.	Ms. Bernie Wardle	International Review	Consultant (EIA) – SSG
10.	Dr. Justine Thorp	International Review	Consultant (SIA) – SSG
11.	U Than Tun	International Review	Consultant (Quality Assurance) – PWM
Project Management Team			
12.	Daw Thazin Tin Win	Project Management	Financial Controller
13.	Daw Nilar Aung	Project Management	Admin and Logistics Manager
14.	Daw Mi May Phyu Phyu Sin	Project Management	Project Coordinator
Document Control and Preparation of Reports			
15.	U Ye Nyunt	Research Director	Report Writer
16.	Daw Nyein Nyein Myo	Document Control	Report Preparation
17.	Daw Win Win Mar	Document Control	Report Preparation
Socio-Economic (Stakeholder Engagement)			
18.	Mr. Patrick Meza	Coordinator	Consultant (Social Research)
19.	U Aung Lin	Socio-Economics	Rakhine Expert (Social Impacts)
20.	U Ohn Kyaing	Socio-Economics	Rakhine Expert - Field Team Manager
21.	Daw Mra Sabai Nyun	Socio-Economics	Rakhine Expert (Socio-Economics)
22.	Daw Eaint Phu Phu Ngal	Socio-economics	Field Team Manager (Socio-Economics)
23.	U Htay Min	Socio-economics	Field Team leader
24.	U Min Min Htun	Socio-economics	Field Team leader
25.	Daw Wutyi Soe	Socio-economics	Field Team leader

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr	Name	Project role	Expertise
26.	U Maung Maung Soe	Socio-economics	Data Management
Harbour, Navigation and Marine Infrastructure			
27.	Mr. Moon, Sung-Hyun	Coordinator	Consultant (Port & Harbour)
28.	Daw Pyae Thazin	Harbour team member	Engineer (Port & Harbour)
29.	Daw Thin Thiri Bo	Harbour team member	Engineer (Port & Harbour)
30.	Daw Lwin Ein Daray Moe	Harbour team member	Engineer (Port & Harbour)
Terminal Infrastructure and Facilities			
31.	Mr. Song, Yoo Min	Coordinator	Consultant (Highway)
Physical Components			
32.	Dr. Htay Aung Pyae	Team leader	Physical Environment
33.	U Kyan Dyne Aung	Team coordinator	Environmental Management
34.	U Ko Ko Soe Lwin Thaw	Team member	Overall Management & GIS
35.	U Phone Myint Tun	Team member	Noise and vibration
36.	Dr. Aye Aye Saw	Team member	Impact Identification and Assessment
37.	U Thar Moe Aung	Team member	Auto CAD design and engineer
38.	U Ye Min Aung	Team member	Soil, Water and Air Quality
39.	U Thiha Lin	Team member	Soil, Water and Air Quality
Biological Components			
40.	Prof. Dr. Tint Swe	Coordinator	Marine Biology
41.	U Nay Htut Tin	Team member	Marine Biology
42.	Dr. Aung Myo Hsan	Team member	Marine Biology
43.	Prof. Dr. San Thar Tun	Team member	Marine Biology
44.	Prof. Dr. Cherry Aung	Team member	Marine Biology
45.	Dr. Aung Aung Aye	Team member	Marine Biology
46.	Dr. Myo Min Tun	Team member	Marine Biology
47.	Prof. Dr. Zin Lin Khine	Team member	Marine Biology
48.	Prof. Dr. Yin Yin Htay	Team member	Marine Biology
49.	Prof. Dr. Htay Aung	Team member	Marine Biology
50.	U Zaw Linn Htun	Team member	Marine Biology
51.	U Shine Moe Tun	Team member	Marine Biology
52.	U Sein Than Lin	Team member	Marine Biology
53.	U Sa Aung Than	Team member	Marine Biology
54.	Dr. Ko Myint	Coordinator	Terrestrial and Aquatic (Zoology)
55.	Dr. Kyaw Zay Moe	Team member	Terrestrial and Aquatic (Botany)
56.	U Saw Thura Min	Team member	Botany
57.	U Soe Min Naing	Team member	Forestry
58.	U Thet Naing Aung	Team member	Zoology
Public Health Components			
59.	Dr. Thet Su San	Team member	Expert (Public Health)
60.	Dr. Than Htut	Consultant	Consultant (Public Health)
Cultural Heritage			
61.	Dr. Ko Ko Toe Lwin Thaw	Coordinator	Consultant (Cultural Heritage)
62.	U Ko Ko Aung	Coordinator	Consultant (Cultural Heritage)
Legal Requirements			
63.	U Tun Myint	Consultant	Consultant Lawyer (Policy and Legal)
64.	U Oo Kyaw Maung	Coordinator	Expert (Policy and legal)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

1.7.5 Project team qualifications

Name	Project Role	Staff Location	Years of Experience	Professional Accreditation	Degree Achieved
Dr. Geraldine McGuire (SSG)	ESIA ESG Lead Peer Reviewer and Revisor (International Review Team)	Malanda, Australia	30	Fellow of Australian Institute of Mining and Metallurgy	Ph D (Science)
Ms. Bernie Wardle (SSG)	ESIA ESG Peer Reviewer and Revisor (International Review Team)	Brisbane, Australia	20	Environmental Institute of Australia	Master of Environmental Management
Dr. Justine Thorp (SSG)	ESIA ESG Peer Reviewer and Revisor (International Review Team)	Cairns, Australia	16	—	Ph D: Heritage Management
U Than Tun (PWM)	Consultant (Quality Assurance) (International Review Team)	Brunei Darussalam	38	IRCA Certified Principal Auditor	Bachelor of Engineering degree in Electrical Communication. B.E.(E.C.)
Mr. Moon, Sung-Hyun	Independent International Engineering Consultant (Harbour) (Port and Harbour Team)	Korea	22	1 st grade licensed in civil engineering	B Sc (Civil Engineering)
Mr. Song, Yoo Min	Independent International Engineering Consultant (Highway) (Infra & Highway Team)	Korea	10	—	B Sc (Civil and Environmental Engineering)
U Win Tin Win	Consultant (Biological) (Review Team)	Myanmar	26	Environmental Writer	B A
U Kyaw Hlaing	Consultant (Project Director) (Review Team)	Myanmar	26	—	M A (Business Management), Japan
U Tin Than	Consultant (Biological) (Review Team)	Myanmar	30	Integrated National Resources Planning, Management & Development	M Sc (Natural Resources), Thailand
Dr. Maung Maung Kyi	Consultant (Mangrove and Coastal Conservation) (Review Team)	Myanmar	25	Earth Lover Award (Special) FRED A Myanmar) ASEAN Biodiversity Hero Award (ASEAN	(1) M B B S (2) Community Forest

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Name	Project Role	Staff Location	Years of Experience	Professional Accreditation	Degree Achieved
				50 th Golden Anniversary in Manila)	
Dr. Khin Maung Nyo	Consultant (Environmental) (Review Team)	Myanmar	30	—	Ph D (Chemical Engineering), Salford
Ms. Marita Schimpl	Consultant (Qualitative Research) (Review Team)	Germany	20	Market Research	M Sc (Psychology)
Mr. Vinod Paul	Consultant (Quantitative Research) (Review Team)	India	20	Market Research	M B A (Marketing)
Mr. Patrick Meza	In-house International Expert (Socio Research) (Socio-Eco Team)	Australia	20	Market Research	M Com (Management)
Daw Mra Sabai Nyun	Consultant (Rakhine Focus) (Socio-Eco Team)	Myanmar (Rakhine)	5	Planning and Development	M P A (Public Administration), Harvard University
U Aung Lin	Specialist (Social Impact Assessment) (Socio-Eco Team)	Myanmar (Rakhine)	6	—	B Sc (Physics)
U Ohn Kyaing	Specialist (Field Management) (Socio-Eco Team)	Myanmar (Rakhine)	5	Animal science and Life sciences	B Sc (Zoo)
Daw Eaint Phu Phu Ngal	Specialist (Field Management) (Socio-Eco Team)	Myanmar (Rakhine)	5	Social research	B A (English), YUFL
U Htay Min	Specialist (Field Management) (Socio-Eco Team)	Myanmar (Rakhine)	9	—	B A (Geography)
U Min Min Htun	Specialist (Field Management) (Socio-Eco Team)	Myanmar (Rakhine)	9	—	B Sc (Physics), Dip in Technology (EC)
Daw Wutyi Soe	Specialist (Field Management) (Socio-Eco Team)	Myanmar (Rakhine)	8	—	B Sc (Physics), MA (Library & Information Studies)
U Maung Maung Soe	Specialist (Field Management) (Socio-Eco Team)	Myanmar (Rakhine)	10	—	B A (English)
Daw Pyae Thazin	Port and Harbour Engineer (Port and Harbour Team)	Myanmar	5	—	M E (Harbour, Coastal and Offshore Engineering) (Hohai University, Nanjing, China)

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Name	Project Role	Staff Location	Years of Experience	Professional Accreditation	Degree Achieved
					B E (Port and Harbour Engineering) (Myanmar Maritime University)
Daw Thin Thiri Bo	Port and Harbour Engineer (Port and Harbour Team)	Myanmar	5	—	M E (Harbour, Coastal and Offshore Engineering) (Hohai University, Nanjing, China) B E (Port and Harbour Engineering) (Myanmar Maritime University)
Daw Lwin Ein Daray Moe	Port and Harbour Engineer (Port and Harbour Team)	Myanmar	5	—	B E (Port and Harbour Engineering) (Myanmar Maritime University) Dip in Port Management (Myanmar Maritime University)
U Ko Ko Soe Lwin Thaw	Specialist (Overall Management & GIS) (Physical Team)	Myanmar	6	Management	Certified in GIS and Google Earth, Manifold system for mapping, aerial survey, Computer Studies (Singapore)
U Kyan Dyne Aung	Specialist (Environmental Management and Compliance) (Physical Team)	Myanmar	6	Report Writing	M EEM (Environmental Engineering Management), Sydney
U Phone Myint Tun	Consultant Engineer-Noise and Vibration (Physical Team)	Myanmar	6	Petroleum Economics, Production Method, Drilling Engineering	B E (Petroleum)
Dr. Htay Aung Pyae	Environmental Consultant (Physical Environment) (Physical Team)	Myanmar	5	—	Ph D (Waste Management), Thailand
Dr. Aye Aye Saw	Environmental Consultant	Myanmar	5	—	Ph.D. (Forest Resources, Environments and Society), Japan
Dr. Htay Aung Pyae	Modelling Specialist (Air Quality Modelling – Auxiliary)	Myanmar	5	—	Ph D (Waste Management), Thailand
U Thar Moe Aung	Specialist (Auto CAD designing) (Physical Team)	Myanmar	3	Auto CAD Design and Engineer	B Tech (Civil Engineering)
U Ye Min Aung	Specialist (Water and Air Quality) (Physical Team)	Myanmar	2	Soil, Water and Air Quality	B A (Myanmar)

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Name	Project Role	Staff Location	Years of Experience	Professional Accreditation	Degree Achieved
U Thiha Lin	Specialist (Water and Air Quality) (Physical Team)	Myanmar	2	Soil, Water and Air Quality	B A (Geography)
Prof. Dr. Tint Swe	Consultant (Marine Biology / Fishery Expert) (Biological Team)	Myanmar	41	Vice-President, Marine Science Association, Myanmar (MSAM)	Ph D (Marine Science)
U Nay Htut Tin	Consultant – Marine Biology / Team leader (Marine Biological Team)	Myanmar	10	President, Marine Science Association, Myanmar (MSAM)	B.Sc (Marine Biology)
Dr. Aung Myo Hsan	Consultant – Marine Biology / Seagrass & PADI Diver expert (Marine Biological Team)	Myanmar	11	EC Member of Marine Science Association, Myanmar (MSAM)	Ph D (Marine Science)
Prof. Dr. San Thar Tun	Consultant – Marine Biology / Mangrove Expert (Marine Biological Team)	Myanmar	33	EC Member of Marine Science Association, Myanmar (MSAM)	Ph D (Marine Science)
Prof. Dr. Cherry Aung	Consultant – Marine Biology / Coral & Benthos Expert (Marine Biological Team)	Myanmar	27	Head of Department Marine Science, Myeik University	Ph D (Marine Science)
Dr. Aung Aung Aye	Consultant – Marine Biology (Marine Biological Team)	Myanmar	11	Lecturer Marine Science Department, Myeik University	Ph D (Marine Science)
Dr. Myo Min Tun	Consultant – Marine Biology / Shark & Ray expert (Marine Biological Team)	Myanmar	11	Lecturer Marine Science Department, Sittwe University	Ph D (Marine Science)
Prof. Dr. Zin Lin Khine	Consultant – Marine Biology / Zooplankton Expert (Marine Biological Team)	Myanmar	17	Associate Professor Marine Science Department, Mawlamyine University	Ph D (Marine Science)
Prof. Dr. Yin Yin Htay	Consultant – Marine Biology / Phytoplankton Expert (Marine Biological Team)	Myanmar	17	Professor Marine Science Department, Patheingyi University	Ph D (Marine Science)

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Name	Project Role	Staff Location	Years of Experience	Professional Accreditation	Degree Achieved
Prof. Dr. Htay Aung	Consultant – Marine Biology / Mollusks Expert (Marine Biological Team)	Myanmar	41	EC Member of Marine Science Association, Myanmar (MSAM)	Ph D (Marine Science)
U Zaw Linn Htun	Consultant – Marine Biology / Sampling expert (Marine Biological Team)	Myanmar	5	EC Member of Marine Science Association, Myanmar (MSAM)	B.Sc (Marine Science)
U Shine Moe Tun	Consultant – Marine Biology / PADI Diver (Marine Biological Team)	Myanmar	5	Researcher & Diver of Marine Science Association, Myanmar (MSAM)	M.Sc (Marine Science)
U Sein Than Lin	Consultant – Marine Biology / PADI Diver (Marine Biological Team)	Myanmar	5	Researcher & Diver of Marine Science Association, Myanmar (MSAM)	M.Sc (Marine Science)
U Sa Aung Than	Consultant – Marine Biology / PADI Diver (Marine Biological Team)	Myanmar	5	Researcher & Diver of Marine Science Association, Myanmar (MSAM)	M.Sc (Marine Science)
Dr. Ko Myint	Consultant – Terrestrial and Aquatic (Zoology) (Biological Team)	Myanmar	7	—	Ph D (Zoology)
Dr. Kyaw Zay Moe	Consultant – Terrestrial and Aquatic (Botany) (Biological Team)	Myanmar	7	—	Ph D (Botany)
U Saw Thura Min	Consultant – Botany (Biological Team)	Myanmar	5	—	BSc (Botany)
U Soe Min Naing	Consultant – Forestry (Biological Team)	Myanmar	5	Director, Green Ethic Co., Ltd	BSc (Forestry) Diploma (Environmental Studies)
U Thet Naing Aung	Consultant – Zoology (Biological Team)	Myanmar	7	—	BSc (Zoology)
Dr. Than Htut	Consultant ((Health and Safety) (Health and Safety Team)	Myanmar	40	Honorary Professor, Occupational Health and Environmental Health Department, University of Public Health	M B B S (Yangon Institute of Medicine 1) M Med (Occupational Medicine) (University of Singapore)

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Name	Project Role	Staff Location	Years of Experience	Professional Accreditation	Degree Achieved
Dr. Thet Su San	Specialist (Public Health) (Health and Safety Team)	Myanmar	3	Statistic and Research Methodology	M Med Sc (Public Health)
Dr. Ko Ko Toe Lwin Thaw	Art & Cultural Heritage Impact Assessment (Historical Heritage Team)	Myanmar	16	Environmental History, Myanmar Historiography	Ph D (History)
U Ko Ko Aung	Art & Cultural Heritage Impact Assessment (Historical Heritage Team)	Myanmar	17	Archaeologist (CHIA)	BA (History), Diploma of Archaeology, Master of Sociology (Indonesia)
U Tun Myint	Consultant (Lawyer) (Legal Team)	Myanmar (Rakhine)	35	Law Officer / Advocate	LLB, DBL (Diploma in Business Law), DIL (Diploma in International Law)
U Oo Kyaw Maung	Expert (Policy & Legal) (Legal Team)	Myanmar (Rakhine)	5	Policy Analysis/ Policy formulation/ Project Development/ Economic Analysis	M A (Public Policy), ANU, Australia
Daw Thazin Tin Win	Financial Controller (Project Management Team)	Myanmar	26	Financial	B A (History), MBA (Swiss) will graduate by Dec 2022
Daw Nilar Aung	Admin and Logistics Manager (Project Management Team)	Myanmar	25	Social Research	B A (History) Q DMA (Diploma in Management Accounting)
Daw Mi May Phyu Phyu Sin	Project Coordinator (Project Management Team)	Myanmar	12	Market Research	MBA (International University of Japan)
U Ye Nyunt	Research Director (Report Preparation Team)	Myanmar	22	—	M A (International Relations), Japan Dip in Journalism (Berlin, Germany)
Daw Nyein Nyein Myo	Specialist (Report Preparation Team)	Myanmar	8	B Sc (Honours) & Economics & Development Study	M A (International Development Programme)
Daw Win Win Mar	Specialist (Report Preparation Team)	Myanmar	7	—	B Sc (Physics) Q

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1.8 Related projects and developments

The brief information about other major existing and future projects in the surrounding area of the proposed Project which may have impacts on the same environment and in connection with Cumulative Impact Assessment are described below.

1. Myanmar-China Crude Oil Pipeline and Oil Terminal Project

The 300,000-ton oil terminal, which is jointly invested by CNPC and its partners, was built on Made Island in 2009, in support of the Myanmar-China Crude Oil Pipeline. The Myanmar-China Crude Oil Pipeline is jointly invested and constructed by SEAP and MOGE; their joint venture, South-East Asia Crude Oil Pipeline Company Limited (SEAOP), is responsible for its operation and management. The 771-kilometer-long pipeline extends from Made Island on the west coast of Myanmar to Ruili in the southwestern Chinese province of Yunnan, running through Rakhine State, Magwe Region, Mandalay Region, and Shan State. The Pipeline is 813 mm in diameter and is able to deliver 12Mt/a upon completion of the Phase I Project, and 22Mt/a upon completion of the Phase II Project, with a total annual delivery of 2 million tons to Myanmar. A 300,000-ton crude oil terminal has been built, with an annual capacity of 22 million tons. On April 10, 2017, the Myanmar-China Crude Pipeline Project was officially put into operation.¹⁵

2. Myanmar-China Gas Pipeline Project

The Myanmar-China Gas Pipeline Project is jointly invested and constructed by SEAP, MOGE, POSCO DAEWOO, ONGC CASPIAN E&P B.V., GAIL and KOGAS; their joint venture, South-East Asia Gas Pipeline Company Limited (SEAGP), is responsible for its operation and management.

The Myanmar-China Gas Pipeline starts at Yanbye Island on the western coast of Myanmar and ends at Ruili in China's Yunnan Province. Running in parallel with the Myanmar-China Crude Oil Pipeline, the crude pipeline is 1,016 mm in diameter with a distance of 793km in Myanmar. It can deliver 5.2 billion m³ per year upon completion of the Phase I Project, and 12 billion m³ per year upon completion of the Phase II Project. Pursuant to the cooperation agreement, four gas off-take stations (Kyauk Phyu, Yenangyaung, Taungtha and Mandalay) were established to unload less than 20% of the pipeline's total delivery in Myanmar. On July 28, 2013, the Myanmar-China Gas Pipeline became operational and started to deliver natural gas to the Myanmar market through its off-take stations.¹⁶

3. Combined Cycle Power Plant Project

The Kyauk Phyu combined cycle power plant project with a capacity of 135 MW came into service and it can generate 1,000 million KW hours of power per year by using 22 million cubic feet of natural gas per day to meet the country's power need. The Project was developed by Kyauk Phyu Electric Power Company, a joint venture between Chinese state-owned firm Power China Resources Ltd. and Supreme Group Ltd. of Myanmar. It recycles the waste heat and uses seawater instead of underground water. The GIS substation is installed at the plant and so the power system will be stable and reliable. The power will be distributed via the 230-MW Kyauk Phyu sub-power station to houses, businesses, industries and power systems in Rakhine State.¹⁷

4. Shwe Gas Project

Shwe gas project comprises the development of three fields, namely Shwe, Shwe Phyu, and Mya, which are located in in Blocks A-1 and A-3 in the Bay of Bengal, offshore Rakhine. The three fields are together estimated to hold 4.5 trillion cubic feet of gas. The Project is jointly owned by Posco Daewoo Corporation (PDC, 51%), Myanmar Oil and Gas Enterprise (15%), ONGC Videsh (India) (17%), GAIL (India) (8.5%), and Korea Gas Corporation (8.5%). Posco Daewoo has been producing gas from three

¹⁵ <https://www.cnpc.com.cn/en/myanmarcsr/201407/f115a1cc6cdb4700b55def91a0d11d03/files/dec09c5452ec4d2ba36ee33a8efd4314.pdf>

¹⁶ <https://www.cnpc.com.cn/en/myanmarcsr/201407/f115a1cc6cdb4700b55def91a0d11d03/files/dec09c5452ec4d2ba36ee33a8efd4314.pdf>

¹⁷ https://supremegroupcompanies.com/wp-content/uploads/2020/06/Kyaukphyu-135-MW-CCPP-EIA_Final.pdf

CHAPTER 1: Context of the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

fields located under a 30-year supply contract with Chinese state gas company China National Petroleum Corp. (CNPC).¹⁸

5. LNG Power Plant Project

The Hong Kong-based CNTIC VPower Group's liquefied natural gas (LNG) power plant was built in Kyauk Phyu township to generate 150 MW of electricity. Construction of the gas kit which will supply gas to this power plant was also completed. Running on natural gas, the plant will have the advantage of much lower emissions and better efficiency than that of traditional fuels and will stand out as the more cost-effective power solution.¹⁹

6. Made Island Deep Sea Port, Road and Bridge and other components of KPSEZ

The Made Island Deep Sea Port with 6 berths will have the estimated area of total project footprint is 150 ha. The components of the port are container terminal, multi-purpose terminal, heavy container yard, quay apron area, general cargo yard, 66 kV transmission line, fire station, water treatment plant, sewage treatment plant, office building, electricity substation. The total design annual capacity of the Project is 4.25 million TEU of container a 5.2 million tons of bulk and general cargo.

An external access road connecting the deep-sea ports on Made and Yanbye Islands to the Industrial Park will be constructed. The whole length of access road is about 15 km (including the bridge linkage). The access road to Made Island Port Terminal of the Project is a four (4) lane road and the branch access road to Yanbye Island Port Terminal of the Project is a two (2) lane road. A bridge (length to be confirmed) connecting Made and Yanbye Islands will be constructed alongside the development of Made Island Port Terminal of the Project. The bridge with dual four (4) lanes is planned. While only the Deep Sea Port component of the larger SEZ area is being advanced at this time, future SEZ development activities (e.g., the Industrial Park) will be included within the scope of the CIA during this review.²⁰

7. EIA-type future projects in Kyauk Phyu Township

The following EIA-type future projects located in Kyauk Phyu Township may also have impacts on the same environment and in connection with Cumulative Impact Assessment.²¹

No.	Project Name	Project Proponent	Location	Size	Latitude	Longitude
1.	Refinery	MCM Co., Ltd.	Wa Pyay	10 mmta	19° 17' 37.20" N	93° 41' 44.76" E
2.	Gas based Power Plant	MCM Co., Ltd.	A Lae Dwin	100 MW	19° 16' 50.17" N	93° 42' 53.59" E
3.	Oil Terminal	MCM Co., Ltd.	A Lae Dwin	11.67 acres of vacant, fallow and virgin land	19° 16' 38.16" N	93° 42' 42.00" E

¹⁸ <https://www.offshore-technology.com/projects/shwe-natural-gas-project/>

¹⁹ <https://www.myanmaritv.com/news/gas-fired-power-supply-plants-kyaukphyu-produce-285-mw>

²⁰ Kyauk Phyu Special Economic Zone Deep Sea Port Project – Project Proposal Report

²¹ Environmental Conservation Department, Kyauk Phyu Township

Chapter 2: Overview of the Policy, Legal and Institutional Framework

Chapter 2. Overview of the Policy, Legal and Institutional Framework

2.1 Summary

The Project Proponent will comply with the pertinent national policies, plans, strategies, and applicable laws, rules and regulations for the implementation of the Project. Some excerpted national policies, plans and strategies are National Environmental Policy of Myanmar (2019), Myanmar Climate Change Strategy (2018 – 2030), Myanmar Sustainable Development Plan (2018 – 2030). For the regulation, total number of 61 existing laws, rules and procedures relating to the Project will be followed and these are Environmental Conservation Law (2012), Protection and Safeguarding the Right of the Ethnic Nationalities Law (2015), Conservation of Water Resources and Rivers Law (2006), Environmental Impact Assessment Procedure (2015), and National Environmental Quality (Emission) Guidelines (2015) etc.

The Project Proponent is also committed to conform with the international conventions, treaties and agreements related to the environment and social aspects, to which the Myanmar Government is a signatory and have implications for the Project and these include United Nations Framework Convention on Climate Change (UNFCCC), International Convention for the Prevention of Pollution from Ships (MARPOL), International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), United Nations Declaration on the Rights of Indigenous Peoples and etc. Where gaps in local legislation exist, the Project will be implemented according to international best industry practice, namely, International Finance Corporation (IFC)'s environmental and social performance standards and IFC's general Environmental, Health and Safety (EHS) guidelines and IFC's Environmental, Health and Safety (EHS) guidelines for Ports, Harbours and Terminals.

2.2 Introduction

This chapter describes the legislative framework concerning Deep Sea Port Project (part of Kyauk Phyu Special Economic Zone Project). This section mainly focuses on relevant policies, plans, strategies, and applicable laws, along with regulations and guidelines that are required to be complied with by the Project Proponent, herein Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd. when executing all phases of the Project.

A full assessment of all relevant policies, plans, legal, institutional and guidelines concerning the proposed Project will be described and elaborated further in detail in the ESIA Report for this Project. This scoping report details the relevant laws and legal framework which needs to be incorporated into the full EIA report.

2.3 National Administrative Framework

Currently, there are 30 ministries involved in the overview of environmental, natural resources and social issues related to investment businesses, with one of the focal agencies being the Environmental Conservation Department (ECD) of the Ministry of Natural Resources and Environmental Conservation (MONREC).

The ECD administers Myanmar's environmental conservation law, enacted by parliament in 2012. This legislation provides the regulatory settings and policies essential for a Project Proponent to comply with when conducting business in Myanmar.

2.4 Overview of National Policies, Plans and Strategies

The following policies, plans, and strategies are related to the Project and the Project Proponent commits to comply with them in implementation of the Project.

- 1) National Environmental Policy of Myanmar (2019)
- 2) Myanmar Climate Change Policy (2019)
- 3) National Land Use Policy (2016)
- 4) Myanmar Climate Change Master Plan (2018 – 2030)
- 5) Myanmar National Waste Management Strategy and Master Plan (2018 – 2030)
- 6) Myanmar Climate Change Strategy (2018 – 2030)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- 7) National Sustainable Development Strategy (2009)
- 8) Myanmar Sustainable Development Plan (2018 – 2030)
- 9) National Biodiversity Strategy and Action Plan (2015 – 2020)

2.4.1 National Environmental Policy of Myanmar (2019)

The vision of the National Environmental Policy is for “A clean environment, with healthy and functioning ecosystems, that ensures inclusive development and wellbeing for all people in Myanmar”. Its mission is to establish national environmental policy principles for guiding environmental protection and sustainable development and integrating environmental considerations into all policies, laws, regulations, plans, strategies, programmes and Projects in Myanmar”. The National Environmental Policy has three main principles: clean environment and healthy, functioning ecosystems, sustainable economic and social development and integrating environmental protection and management and 23 sub-principles. The Project Proponent will adopt these sub-principles as a guiding framework for achieving the principles and pursuing the objective.

2.4.2 Myanmar Climate Change Policy (2019)

Myanmar requires a robust policy instrument that ensures all sectoral investments and development plans fully acknowledge and address the challenges posed by a changing climate. The Myanmar Climate Change Policy (MCCP) was adopted as a guiding policy to ensure that concrete, coordinated and sustained action will be taken over the long-term to transform Myanmar into a low-carbon and resilient country, which is able to develop in a sustainable manner.

The purpose of the policy is to provide long term direction and guidance to: take and promote climate change action on adaptation and mitigation in Myanmar, integrate climate change adaptation and mitigation considerations into Myanmar’s national priorities and across all levels and sectors in an iterative and progressive manner and take decisions to create and maximise opportunities for sustainable, low carbon, climate resilient development, ensuring benefits for all.

To achieve the purpose of the policy, Myanmar will be guided, inter alia, by the guiding principles. These guiding principles were developed to achieve the following: sustainable development, precaution, prevention, environmental integrity, shared responsibility and cooperation, inclusiveness, good governance, climate justice and equity, gender equality and women’s empowerment.

The Government of the Republic of the Union of Myanmar will take sector-relevant measures to implement this, Policy. Its purposes will be achieved by taking the actions primarily in the six sectoral clusters: food and water security, healthy ecosystems, low-carbon and resilient growth, resilient urban and rural settlements, human wellbeing, knowledge, awareness and research.

Overarching and cross-cutting measures will be taken to implement the policy recommendations and achieve its purpose by taking the following actions primarily in eight areas: laws, regulations, strategies, action plans and policies; institutions; finance, budgets and investment; capacity-building; research and technology; partnerships; transparency and accountability; monitoring, evaluation, reporting and learning. The Project Proponent will follow the policy in implementing the Project.

2.4.3 National Land Use Policy (2016)

This National Land Use Policy is associated with conservation, utilization and allocation of land resources and is defined as the official notification of a government’s objectives and plans. This is laid down with various objectives including land ownership and tenure security, equitable allocation, productivity for investment, sustainable environmental conservation and enjoyment of natural beauty.

The objectives of the policy which need to be pursued by the Project Proponent are: to promote sustainable land use management and protection of cultural heritage areas, environment, and natural resources for the interest of people in the country; and to develop transparent, fair, affordable and independent dispute resolution mechanisms in accordance with rule of law. The Project Proponent will follow the Policy in implementing the Project.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

2.4.4 Myanmar Climate Change Master Plan (2018 - 2030)

Myanmar Climate Change Master Plan for the MCCA is to be implemented by partners in each of Myanmar's six key sectoral areas: agriculture, fisheries and livestock; environment and natural resources; energy, transport and industry; towns, cities and human settlements; climate hazards and health; and education, science and technology.

The master plan's design includes: an overall outcome and expected results for the sector; strategic indicators; objectives for areas of action; activities for these objectives; outputs for the activities; indicators for each action; and timeframes and responsibilities. Each sector has an overall focal agency that reports to the secretariat on overall progress towards each sectoral outcome. For ease of monitoring and reporting, the MCCA reports on progress towards sectoral expected results only. There is a lead for each action and activity. The focal agencies are responsible for regularly reporting progress towards sectoral outcomes by consulting the different leads. The Project Proponent will follow the Master Plan in implementing the Project.

2.4.5 Myanmar National Waste Management Strategy and Master Plan (2018 - 2030)

Myanmar has had to face tremendous challenges in waste management in the recent past due to a number of factors and to address these issues, the National Waste Management Strategy and Master Plan (2018 - 2030) was developed. It aims to build capacity for sustainable waste management and promote development of a conducive policy framework and strategies that transit from a conventional waste management paradigm to sustainable waste management based on waste hierarchy and the 3Rs (reduce, reuse and recycle), in linkage with other national environmental policies. This is the first national initiative aimed at institutionalizing waste management and offers a vision and strategy to address key issues, needs and challenges, whilst also raising awareness amongst key stakeholders towards achieving a resource-efficient and zero-waste society. Its holistic nature means it addresses waste in all its form (solid waste, liquid waste/wastewater, and gaseous emissions) for pollution control and environmental management, although at present prioritizes solid waste management.

The National Waste Management Strategy and Master Plan is also intended to identify strategic policy directions, programs and actions for sustainable development in waste management, ensuring that wastes generated are managed in a more environmentally friendly manner to both limit short-term environmental impacts caused by the waste management system, as well as, over the medium and long term, be socially acceptable and economically feasible.

The waste management hierarchy and 3 Rs together provide a conceptual framework that will lead to the most desirable waste management options in order to improve solid waste collection, intermediate treatment and disposal. It is structured around a framework of six goals and identified priority actions to maximize proper collection and disposal of all solid waste including municipal, industrial, medical, plastic, hazardous and emerging waste, proper disposal and treatment of liquid waste (wastewater from domestic sector and industry), whilst ensuring waste management services are sustainable over the long term. The latter would be achieved through establishing an enabling framework including supportive financial mechanisms, sound policies, and institutional and monitoring frameworks. The Project Proponent will follow the National Waste Management Strategy and Master Plan in implementing the Project.

2.4.6 Myanmar Climate Change Strategy (2018 - 2030)

Myanmar Climate Change Policy mandates the adoption of actionable short, medium and long-term strategies and plans to address climate change, and in particular the adoption and implementation of the Myanmar Climate Change Strategy (MCCA) 2018-2030. The Strategy has been formulated and adopted to provide a roadmap for Myanmar to strategically address climate-related risks, and also seize opportunities, over the next 13 years and beyond.

The MCCA contributes to materialize the MCCA's vision for the country to be a climate-resilient, low-carbon society that is sustainable, prosperous and inclusive, for the wellbeing of present and future generations. It aims to guide action to achieve its strategic vision, goal and objectives. To increase Myanmar's adaptive capacity and maximize opportunities from low-carbon development, the strategy

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

will focus on the six action areas: policy, institutions, finance, capacity and technology, awareness, and partnerships.

To increase the adaptive capacity of and maximize opportunities from low-carbon and climate resilient development, the strategy will guide investment in the six-priority social and economic development sectors that contribute to current and planned economic and social development in Myanmar. These six sectors are: agriculture, fisheries and livestock sector; natural resource management; energy, transport and industrial systems; towns and cities; disasters, risks and health impacts; and education, awareness and technological systems.

The strategy will be implemented through five pillars: overarching policy framework, multi-stakeholder institutional mechanism, financial mechanism, capacity-strengthening framework and monitoring, evaluation and learning framework. The Project Proponent will follow the strategy in implementing the Project.

2.4.7 National Sustainable Development Strategy (2009)

The National Sustainable Development Strategy (NSDS) is part of a broader program of the UN Sustainable Development Commission set up after the World Summit on Sustainable Development in 2002. Every country, including Myanmar, that signed Agenda 21 at the Earth Summit in Rio de Janeiro in 1992, agreed to develop a NSDS by 2010 in line with the Millennium Development Goals (MDGs).

The major three goals that are prescribed in Myanmar's NSDS are: (1) sustainable management of natural resources; (2) integrated economic development; and (3) sustainable social development. This Project will deal with some areas from environmental perspective for sustainable management of natural resources: sustainable forest resources management, biodiversity conservation, sustainable freshwater resources management, environmental quality management and enhancement, sustainable management of land resources, sustainable energy production and consumption and sustainable industrial, transport and communication development. The Project Proponent will follow the National Sustainable Development Strategy in implementing the Project.

2.4.8 Myanmar Sustainable Development Plan (2018 – 2030)

The Myanmar Sustainable Development Plan (MSDP) provides a long-term vision; a vision of a peaceful, prosperous and democratic country. MSDP has been designed as a living document that presents practical and implementable pathways toward addressing development challenges, while maximizing opportunities for the people of Myanmar to realize their full potential as individuals and citizens.

This MSDP is structured around 3 pillars (Pillar 1: Peace & Stability, Pillar 2: Prosperity & Partnership, Pillar 3: People & Planet), 5 Goals (Goal 1: Peace, National Reconciliation, Security & Good Governance, Goal 2: Economic Stability & Strengthened Macroeconomic Management, Goal 3: Job Creation & Private Sector led Growth, Goal 4: Human Resources & Social Development for a 21st Century Society and Goal 5: Natural Resources & the Environment for Prosperity of the Nation), 28 Strategies and 251 Action Plans. For each of the 5 Goals, clear strategies have been developed.

For each strategy, Action Plans have been identified. Action Plans are intended to be multidimensional, with successful implementation requiring the involvement of a broad range of stakeholders, including multiple ministries and departments. All are firmly aligned with the Sustainable Development Goals (SDGs), the 12 Point Economic Policy of the Union of Myanmar, and various regional commitments which Myanmar has made as part of the Greater Mekong Subregion (GMS) Strategic Framework, the ASEAN Economic Community (AEC) and many others. The Project Proponent will follow the Myanmar Sustainable Development Plan (MSDP) in implementing the Project.

2.4.9 National Biodiversity Strategy and Action Plan (2015-2020)

The United Nations Convention on Biological Diversity (CBD) is a framework for national action for the conservation of biodiversity, the sustainable use of its components, and the equitable sharing of benefits arising from the utilization of genetic resources. To fulfill this commitment to the Conservation, the government meeting No.17/2006 of the Republic of the Union of Myanmar, held on 25th May 2006, approved to formulate National Biodiversity Strategy and Action Plan (NBSAP), for which the funding is provided by the United Nations Environment Program (UNEP) and Global Environment Facility (GEF).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

On the third of May 2012, the Government of the Republic of the Union of Myanmar adopted the Myanmar National Biodiversity Strategy and Action Plan by the Government Meeting No. 16/2012. The NBSAP will act as the major guiding document for planning biodiversity conservation in the country, following its goal to provide a strategic planning framework for the effective and efficient conservation and management of biodiversity and natural resources based on greater transparency, accountability and equity. This Project will be implemented in line with the relevant action plans.

2.5 Overview of Existing Local Laws, Rules, Procedures and Guidelines

This section elaborates the legal framework of the Deep Sea Port Project in the Kyauk Phyu Special Economic Zone, and will help the investment companies to anticipate and avoid the encumbrances that may arise in the face of the laws, rules and regulations, to implement the Project without prejudice to them, and to systematically deal with the predicaments according to the relevant laws.

Laws, bylaws, and procedures are enacted or prescribed by the Union Government, the ministries concerned, and the departments concerned respectively. The sections, rules and articles of laws, procedures and guidelines stipulated, which will be abided by the Project Proponent, will be detailed in the EIA Report.

The existing local laws, rules, procedures and guidelines which are applicable to the Project are mentioned below:

Table 2-1: Existing laws and acts and rules, procedures and guidelines

Sr. No.	Title of Law	Year	Sector
■ Laws and Acts			
1.	Constitution of the Republic of the Union of Myanmar	2008	Governing statute
2.	Myanmar Special Economic Zone Law	2014	Eco Zone
3.	Myanmar Companies Law.....	2017	Commercial
4.	Special Companies Act	1950	Commercial
5.	Environmental Conservation Law.....	2012	Environment
6.	The Penal Code	1861	Social
7.	Prevention and Protection from the Danger of Chemicals and Related Substances Law	2013	Hazard
8.	Worksite-use Explosive Substances Law.....	2018	Hazard
9.	Export and Import Law	2012	Commercial
10.	Foreign Exchange Management Law.....	2012	Commercial
11.	Myanmar Insurance Law	1993	Commercial
12.	Public Health Law, Union of Myanmar	1972	Health
13.	Prevention and Control of Communicable Diseases Law	1995	Health
14.	Control of Smoking and Consumption of Tobacco Product Law	2006	Health
15.	Occupational Safety and Health Law	2019	Health
16.	Myanmar Fire Brigade Law	2015	Hazard
17.	Minimum Wage Law	2013	Labour
18.	Leave and Holidays Act.....	1951	Labour
19.	Labour Organization Law	2011	Labour
20.	Labour Dispute Settlement Law	2012	Labour
21.	Land Acquisition Act.....	1894	Land
22.	Land Acquisition, Resettlement and Rehabilitation Law	2019	Land
23.	Farmland Law.....	2012	Land
24.	Vacant, Fallow and Virgin Land Management Law	2012	Land
25.	Protection of the Rights and enhancing the Interests of Farmers Law	2013	Agriculture
26.	Rural Area Development Law	2019	Development
27.	Protection and Safeguarding the Right of the Ethnic Nationalities Law.....	2015	Nationalities
28.	Myanmar Immigration (Emergency Provisions) (Extension) Act	1949	Immigration
29.	Myanmar Port Authority Law	2015	Port
30.	Ports Act.....	1908	Port

CHAPTER 2: Overview of the Policy, Legal and Institutional Framework

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Title of Law	Year	Sector
31.	Myanmar Territorial Sea and Maritime Zones Law	2017	Sea
32.	Inland Water-going Vessel Law.....	2015	Waterways
33.	Conservation of Water Resources and Rivers Law.....	2006	Environment
34.	Vehicle Safety and Motor Vehicle Management Law.....	2020	Road transport
35.	Myanmar Marine Fisheries Law	1990	Fisheries
36.	Forest Law.....	2018	Forest
37.	Protection and Safeguarding of Biodiversity and Natural Conservation Areas Law.....	2018	Biodiversity
38.	Protection and Conservation of Cultural Heritage Regions Law	2019	Culture
39.	Protection and Conservation of Antique Structures Law	2015	Culture
40.	Protection and Conservation of Antique Objects Law	2015	Culture
41.	Social Security Law	2012	Labour
42.	Employment and Skill Development Law	2013	Labour
43.	Workmen’s Compensation Act	1923	Labour
44.	Electricity Law	2014	Electricity
45.	Myanmar Merchant Shipping Act	1923	Ship
46.	Sea-Custom Act	1878	Sea-Custom
47.	Telecommunications Law	2013	Telecommunications
■ Rules and Guidelines			
48.	Myanmar Special Economic Zone Rules	2015	Eco Zone
49.	Environmental Conservations Rules	2014	Environment
50.	Minimum Wage Rules	2013	Labour
51.	Labour Dispute Settlement Rules.....	2012	Labour
52.	Myanmar Port Authority Rules	2016	Port
53.	Permanent Residency of a Foreigner Rules	2014	Immigration
54.	Farmland Rules	2012	Agriculture
55.	Labour Organization Rules.....	2012	Labour
56.	Vehicle Safety and Motor Vehicle Management Rules	2022	Road transport
57.	Conservation of Water Resources and Rivers Rules	2013	Environment
58.	Electricity Rules	2015	Electricity
59.	Notification No. 1/2017 of Insurance Business Regulatory Board.	2017	Insurance
60.	Environmental Impact Assessment Procedure	2015	EIA
61.	National Environmental Quality (Emission) Guidelines	2015	Environmental quality

Laws and Acts

2.5.1 Constitution of Republic of Union of Myanmar (2008)

Overview

As the Constitution is the pre-eminent and governing statute of the country, it broadly provides fundamental principles on the political, and economic matters, legislative, executive and judiciary matters, national defence, rights and duties of the citizens, elections, etc. in 15 chapters.

Relevancy (Economic principles)

The Constitution deals with the economic principles in Sections 35 and 36, and the natural resources sector in Sections 37 (b) and 45.

- Section 35: The economic system of the Union is the market-oriented economic system.
- Section 36: The Union shall:
 - (a) permit all economic forces such as the State, regional organizations, cooperatives, joint-ventures, private individuals and so forth, to take part in the economic activities for the development of national economy;
 - (b) protect and prevent acts that injure public interests through monopolization or manipulation of prices by an individual or group with intent to endanger fair competition in economic activities;

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- (c) strive to improve the living standards of the people and development of investments;
- (d) not nationalize economic enterprises;
- (e) not demonetize the currency legally in circulation

Relevancy (Principles on natural resources)

The following principles are provided as regards the State-owned natural resources:

- Section 37: The Union
 - (a) is the ultimate owner of all lands and all natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union;
 - (b) shall enact laws it deems necessary to manage the extraction and utilization of the State-owned natural resources by economic forces;
 - (c) shall permit citizens right of private property, right of inheritance, right of private initiative and patent in accord with the law.
- The State shall protect and conserve the natural environment. — Section 45

2.5.2 Myanmar Special Economic Zone Law (2014)

Overview

The Myanmar Special Economic Zone Law, enacted on January 23, 2014, contains 18 chapters. The following chapters are relevant to the foreign investors:

Chapters 1 – 9:

1. Title, relevance and definition; 2. Objectives; 3. Formation of the Central Body and its functions and duties; 4. Formation of the Central Working Body and its functions and duties; 5. Formation of the Management Committee and its functions; 6. Establishment of the Special Economic Zone; 7. Stipulations of Free Zone and Promotion Zone; 8. Types of investment business, the duties and exemption of the investor; 9. Development business, duties and exemption of the Project Proponent.

Chapters 10 – 19:

10. The exemptions and reliefs on the import revenue of the Project Proponent and investor; 11. The settlement of disputes; 12. Withholding tax from the source; 13. Bank and finance management and Insurance business; 14. Management and inspection of goods by the Customs Department; 15. Quarantine inspection and confinement so as not to spread contagious disease; 16. Matters related to labour; 17. Land use; and 18. Miscellaneous.

Enacted in precedence, this law prevents the investors who make investments in pursuance of this law from encumbrances they may face as they do business, respecting the other existing laws in Myanmar.

Relevancy

- This law provides definitions including those of the Project Proponent, the investors and foreigner. —Sections 3 (e), 3 (f) and 3 (h) respectively.
- The functions and duties of the Management Committee are as follows:
 - supervising and carrying out inspection on the development matters of the Special Economic Zone such as implementation of the investment and development Projects, land use, environmental conservation, education, health, finance, taxation, municipality, transportation, communication, security, electricity, energy and water supply, and coordinating with the relevant governmental departments and governmental organization. —Section 11 (d)
 - supervising and ensuring compliance with the existing laws relating to the conservation and protection of natural environment, scrutinizing the industrial waste disposal system from the factory, ensuring in conformity with the stipulations to the Project Proponent or investor in the Special Economic Zone. —Section 11 (p)
- Chapter 2: The main objectives of the law are mentioned in six sub-clauses.
- It also mentions the kinds of businesses in which an investor may invest. —Section 29

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- The investor shall not only abide by the environmental standards described in the Myanmar Environmental Conservation Law and international standards, but also carry out them in accordance with the existing laws in order not to have undesirable health and social impact. — Section 35
- The duties of a Project Proponent, and exemption and tax relief investors are entitled to, are explained. — Chapters 9 and 10
- Ways to settle the disputes between the people involved in investment are mentioned. — Sections 53 and 54
- The procedure on banking, financial management and insurance, opening of bank accounts in foreign currencies with an authorized bank in Myanmar, and transfer or exchange of the foreign currencies within the zone or abroad are detailed in Chapter 13.
- Workers' affairs, employment contract, wage, leave, holiday, overtime fees, redundancy payments and compensations in agreement with the Labour Law are provided in Chapter 16. It further mentions the quotas of citizens to be appointed to the skilled and unskilled positions, and disputes between the employer and the employee or between the expert and the employee.
- How to obtain the permit for land use after the suitable land for the economic zone has been chosen and approved by the Union government is explained in Chapter 17.

The chapter also deals with confiscation of land, and land lease or rental.

The investor is to return the land to the owner in case their business is wound up. All the matters related to land are mentioned in Chapter 17.

2.5.3 Myanmar Companies Law (2017)

Overview

The Myanmar Companies Law contains eight chapters:

1. Preliminary; 2. Constitution, incorporation and powers of companies; 3. shares and matters related to a company's capital; 4. Management, administration and governance, offers of securities to the public, grant of security by a company and maintenance of company account; 5. Winding up; 6. The registrar, registration office, registration of documents, powers of inspection and fees, and removal of companies from the register; 7. Proceedings, offences, regulations and transitional provisions; and 8. Miscellaneous.

Relevancy

- The law, promulgated on December 6, 2017, allows a foreign business person with a business abroad to start a business in Myanmar if they **are willing to** make investments in Myanmar, and has provided all the procedures an investor has to undergo in doing business in Myanmar.

2.5.4 Special Companies Act (1950)

Overview

Special Companies Act was enacted on November 10, 1950, contains 10 sections.

Relevancy

- State president may permit to establish special company by official notice. —Section – 4 (A)
- According to Myanmar Companies Law (2017), special Company must be registered as a special company with the register who carries out the duty of registering companies. — Section– 7

2.5.5 Environmental Conservation Law (2012)

Overview

The Environmental Conservation Law, enacted on March 30, 2012, contains 14 chapters—Title and definition, Objectives (eight objectives); formation of the Environmental Conservation Committee; Duties and powers related to the environmental conservation of the Ministry; Environmental emergency; Environmental quality standards; Environmental conservation; Management of urban environment;

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Conservation of natural resources and cultural heritage; Prior permission; Insurance; Prohibitions; Offences and penalties; and Miscellaneous.

Relevancy

- Regarding the conservation of natural resources and cultural heritage (Chapter 9), the relevant government departments and organizations shall, in accord with the guidance of the Union Government and the Committee, carry out the conservation, management, beneficial use, sustainable use and enhancement of regional cooperation of the following environmental natural resources:
 - (a) Forest resources
 - (b) Land resources
 - (c) Fresh water resources including underground water
 - (d) Mineral resources
 - (e) Agricultural resources
 - (f) Fisheries resources
 - (g) Marine resources
 - (h) Natural ecosystems
 - (i) Natural areas, wildlife, natural plants and biological diversity
 - (j) Other natural resources stipulated by the Union Government

Chapter XIII explains about Offences and Penalties.

Section 31: Whoever, without the prior permission, operates business, work-site or factory, workshop which is required to obtain the prior permission under this Law shall, on conviction, be punished with imprisonment for a term not exceeding three years, or with fine from a minimum of one hundred thousand kyats to a maximum of one million kyats, or with both.

Section 32: Whoever violates any prohibition contained in the rules, notifications, orders, directives and procedures issued under this Law shall, on conviction, be punished with imprisonment for a term not exceeding one year, or with fine, or with both.

Section 33: Whoever shall:

- (a) if convicted under section 32, be passed an order to compensate for damage due to such act or omission;
- (b) if ordered under sub-section (a) and fails to pay the compensation to be paid, be recovered in accord with the existing revenue laws.

Section 34: Whoever imports, exports, produces, stores, carries or trades any material prohibited by the Ministry due to its impact on environment shall on conviction, be punished with imprisonment for a term from a minimum of three years to a maximum of five years, or with fine from a minimum of one hundred thousand kyats to a maximum of two million kyats, or with both. Moreover, he shall incur the expenditure for the treatment and disposal of such material until the process that has no impact on the environment.

2.5.6 The Penal Code (1861)

Overview

The Penal Code, enacted on May 1, 1861 during the British rule, is still effective in Myanmar and has 511 sections under 23 chapters. Each chapter deals with offences in detail.

Chapters 1 – 12:

1. Introduction; 2. General explanations; 3. Punishments; 4. General exceptions; 5. Abetment; 5.A. Criminal conspiracy; 6. Offences against the State; 6.A. Offences relating to certain provisions contained in the Constitution and Acts of the Parliament; 6.B. Libel against foreign powers; 7. Offences relating to army, navy and air force; 8. Offences against the public tranquillity; 9. Offences by or relating to public servants; 9.A. Offences relating to elections; 10. Attempts of the lawful authority of public servants; 11. False evidence and offenses against public justice; 12. Offences relating to coin and government stamps.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Chapters 13 – 23:

13. Offences relating to weights and measures; 14. Offences affecting the public health, safety, convenience, decency and morals; 15. Offences relating to religion; 16. Offences affecting the human body; 17. Offences against property; 18. Offences relating to document to trade or property marks; 19. Criminal breach of contracts of service; 20. Offences relating to marriage; 21. Defamation; 22. Criminal intimidation, insult and annoyance; and 23. Attempts to commit offences.

Relevancy (Religion, Public Nuisance, public spring, atmosphere nauseous, poisonous substance, personal safety, wrongfully diverting water)

- Section 268 states the definition of “Public nuisance” in detail that contains guilty act for public nuisance, guilty act to public omission, causes of common injury, danger or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction danger or annoyance to persons.
- Section 269 prohibits any negligent act likely to spread infection of disease dangerous to life. If whoever commit it shall be punished with imprisonment up to six months, or with fine, or with both.
- Section 277 prohibits any making dirty act fouling water of public spring or reservoir. If whoever commit it shall be punished with imprisonment up to three months or with fine, or with both.
- Section 278 prohibits any making atmosphere noxious to health. If commits it shall be punished with fine.
- Section 284 prohibits any act on negligent conduct with respect to poisonous substance. If commit it, shall be punished with imprisonment up to six months or with fine or with both.
- There are four main religions in Myanmar and traditional spirit chapels as well. Section 295 of this code protects such places of worship from being defiled or prevents any action that may be considered an insult.
- Whoever destroys, damages or defiles any place of worship, or any object hold sacred by any class or persons, with the intention of the thereby insulting the religion of any class of person or with the knowledge that any class of persons is likely to consider such destruction, damage or defilement as an insult to their religion, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine, or with both.—Section 295
- Section 336 prohibits any act endangering life or personal safety of others. If commits it, shall be punished with imprisonment up to one year or with fine or with both.
- Section 337 prohibits any causing hurt by act endangering life or personal safety of others. If commits it, shall be punished with imprisonment up to two years or with fine or with both.
- Section 338 prohibits any causing grievous hurt by act endangering life or personal safety of others. If commits it, shall be punished with imprisonment up to five years, or with fine, or with both.
- Section 430 prohibits any act mischief by injury to work of irrigation or by wrongfully diverting water. If commits it, shall be with imprisonment up to five years, or with fine, or with both.

2.5.7 Prevention and Protection from the Danger of Chemicals and Related Substances Law (2013)

Overview

This law, promulgated on August 26, 2013, has 14 chapters. The main institutions are the Ministry of Industry and the Central Leading Board (Committee) to be formed under this law. Under the Central Leading Board, there are Supervisory and Inspection Boards.

The law deals with registration certificate, hazard control and decrease, invalidation and re-application of licence, administrative action and appeal, prohibition, offences and penalties, and miscellaneous.

Relevancy

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- This law prescribes the four objectives including protection of all living things and natural resources against the danger of chemicals and related substances. The other aims include systematic supervision in operating the chemicals and related substances business, conducting wide education and research, and bringing about sustainable development for the occupational safety, health and environmental conservation. —Section 3

2.5.8 Worksite-Use Explosive Substances Law (2018)

Overview

The Worksite-Use Explosive Substances Law was enacted on June 13, 2018, has nine chapters:

1. Title and definition; 2. Aims; 3. Application for and issue of permit; 4. Application for and issue of license; 5. Duties of licensees and those who have been permitted; 6. Functions of Chief Inspector; 7. Prohibitions; 8. Offences and penalties; and 9. Miscellaneous.

Relevancy

- The aims of the law are to be systematic in making, import, transportation, storage and use of worksite-use explosive substances, to be safe and secure at worksites where dynamite and related substances are use and to provide systematic supervision on the making and use of worksite-use explosive substances. —Section 3
- The worksite-use explosive substances are defined as dynamite, ammonium nitrate, explosives and related substances including any other substances that the ministry concerned has classified, with the approval of the Union Government, as worksite-use explosive substances by notifications issued from time to time. —Section 2 (e).

2.5.9 Export and Import Law (2012)

Overview

The Export and Import Law was promulgated September 17, 2012, replacing the Control of Imports and Exports Act of 1947.

It contains six chapters—1. Title and definition; 2. Objectives; 3. Supervising and administering in respect of the matters of export and import; 4. Prohibitions; 5. Offences and penalties and 6. Miscellaneous.

It aims to implement the economic principles of the State successfully, and to lay down the policies to export and import that will support the development of the State and that will be in conformity with the international trade standards.

Relevancy

- Export is defined as any goods out of the State by land, sea, air or any other means; Import as any goods into the State by land, sea, air or any other means; and Export and Import goods as any goods or any technology exporting out of or importing into the State by land, sea, air or any other means.—Section 2 (b), (c) and (d)

2.5.10 Foreign Exchange Management Law (2012)

Overview

The Foreign Exchange Management Law, enacted on August 10, 2012, replaced the Foreign Exchange Regulation Act, 1947. It contains 13 chapters:

1. Title and definition; 2. Powers and duties of the Central Bank; 3. Foreign exchange business; 4. Holding of foreign currency, opening and using of foreign currency account; 5. International payments and transfer in kyat; 6. Authorized person to deal in foreign exchange license; 7. Bringing foreign exchange and jewellery to internal and external; 8. Transfers and payments of current accounts; 9. Transfers and payments of capital accounts; 10. Administrative power of the Central Bank; 11. Prohibitions; 12. Offences and penalties; and 13. Miscellaneous.

Relevancy

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Foreign exchange business is defined as: (a) payments in foreign currency within the Union; (b) other payments in foreign exchange within the Union; (c) international payments and transfers in foreign exchange; and (d) purchases and sales of foreign currency and other foreign exchange within the Union.—Section 6

2.5.11 Myanmar Insurance Law (1993)

Overview

The Myanmar Insurance Law, enacted on July 23, 1993, replaced the Insurance Business Law, 1975. It contains nine chapters—1. Title and definition; 2. Establishment and aim; 3. Formation of the Board of Directors and Management; 4. Insurance business; 5. Powers of Myanmar Insurance; 6. Effecting insurance and granting of benefits; 7. Capital and profit allocation; 8. Accounts and audit; and 9. Miscellaneous.

Relevancy

- The insurance businesses include: life assurance; third party liability insurance; general liability insurance; fire insurance; marine cargo insurance; marine hull insurance; aviation insurance; engineering insurance; comprehensive motor insurance; oil and gas insurance; cash-in-transit insurance; cash-in-safe insurance; fidelity insurance; travelling insurance; bodily injury insurance; other classes of insurance; and insurance determined by the Ministry of Finance and Revenue.
- Myanmar insurance enterprise owner, whose business may cause damage to the life and property of the public or may cause pollution to environment, is required by section 16 of this law.

2.5.12 Union of Myanmar Public Health Law (1972)

Overview

The Union of Myanmar Public Health Law was promulgated on January 12, 1972 during the rule of the Revolutionary Council Government. It contains six chapters—1. Preamble; 2. Protection of public health; 3. Rights and responsibilities; 4. Provisions in the existing laws to be deemed as rules; 5. Provisions relating to penalties and taking action; and 6. Miscellaneous

Relevancy

- This law is concerned with protection of people's health by controlling the quality and cleanliness of food, drugs, environmental sanitation, epidemic diseases and regulation of private clinics.

2.5.13 Prevention and Control of Communicable Diseases Law (1995)

Overview

The Prevention and Control of Communicable Diseases Law was promulgated on March 20, 1995. and the Amendment Law, on January 27, 2011.

The law contains nine chapters—1. Title and definition; 2. Prevention; 3. Functions and duties of the Health Officer; 4. Environmental sanitation; 5. Reporting communicable disease; 6. Measures taken in respect of an outbreak of principal epidemic disease; 7. Quarantine; 8. Penalties; and 9. Miscellaneous.

Relevancy

- This law concerns eradication of harmful germs and prevention of communicable diseases between people or between people and animals under a plan therefor. This law sees to it that the general public cooperates with the health employees to maintain cleaning the environment (Section 81), repairing the occurrence of a communicable disease (Section 9 and 10), practical dealing with such diseases (Sections 11, 12 and 13). and imposing lockdown (Section 14).

2.5.14 Control of Smoking and Consumption of Tobacco Product Law (2006)

Overview

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

The Control of Smoking and Consumption of Tobacco Product Law was enacted on May 4, 2006, and contains nine chapters:

1. Title, commencement and definition; 2. Objectives; 3. Formation of the Central Board of the Control of Smoking and Consumption of Tobacco Product, and functions and duties thereof; 4. Non-smoking areas; 5. The functions and duties of the Ministry of Health; 6. Functions and duties of person-in-charge; 7. Actions taken by administrative means; 8. Offences and penalties; and 9. Miscellaneous.

Relevancy

- This law has five objectives including making the public aware of health hazards due to smoking and consumption of tobacco products, making them avoid smoking and consuming such products, and following the international convention on the control of smoking and consumption of tobacco products.

2.5.15 Occupational Safety and Health Law (2019)

Overview

The Occupational Safety and Health Law was promulgated on March 15, 2019, and contains 17 chapters. It broadly deals with relevant businesses, registration of them, duties of the employer and the employees, duties of producer, importer, assembler, dismantler, inspection and training, taking action through administrative means, appeal and prohibitions.

Relevancy

- This law has six objectives including—to effectively realize the measures of safety and health of workers in their occupation, and Chapter 6 of this law prescribes the duties of the employer and the employees.

2.5.16 Myanmar Fire Brigade Law (2015)

Overview

The Myanmar Fire Brigade Law was enacted on March 17, 2015 and contains 13 chapters. Formation of the Central Body on Fire Safety, whose chairman shall be the Union Minister for Home Affairs, the Fire Services Department, Auxiliary Fire Brigade and Reserve Fire Brigade are involved under this law.

Relevancy

- A fire brigade includes employees of the Fire Department, voluntary fire fighters, auxiliary fire brigade, and special fire brigades of factories.—Section 2
- Five objectives including extinguishing fire, preventing fire outbreaks, saving lives in case of fire outbreaks, other natural disasters, outbreaks of diseases, or any unexpected disasters.—Section 3
- Fire brigades shall be form at various levels—in States and Regions, districts, townships, village tracts and wards and for assigning their duties.

2.5.17 Minimum Wage Law (2013)

Overview

The Minimum Wage Law was promulgated on March 22, 2013, and contains 11 chapters. The law deals with formation of the National Committee, determination of the categories of work, particulars to be based on determining the minimum wage, and issue of notification which determines the minimum wage, rights of workers, inspection,

Relevancy

- Myanmar has fixed the minimum wage for workers. The National Committee formed by the President shall, considering the suggestions from all regions and seeking the approval of the Union Government, fix the minimum wage.—Section 10
- The proposed minimum wages for the different kinds of jobs in the special economic zone shall be fixed on approval of the National Committee.—Section 9

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- The first daily minimum wage was set in 2015 at 3,600 kyats, and it was raised to 4,800 kyats in 2018.

2.5.18 *Leave and Holidays Act (1951)*

Overview

This law was titled “The Leave and Holidays Act (1951), dated January 1, 1952. The Act, containing 18 sections, mandates a minimum of one day off (with pay) per week, and ten days of paid leave per year. In addition, employees are also entitled to six days of paid casual leave per year.

Relevancy

- This act prescribes the vacation, casual leave, earned leave, leave on medical certificate and maternity leave and public holidays that the Union Government notifies pursuant to Section 3 (1); and least **one work** holiday every week, according to Section 3 (3) and (4).

2.5.19 *Labor Organization Law (2011)*

Overview

The Labour Organization Law was enacted on October 11, 2011 and contains 14 chapters. It deals with establishment of labour organizations and their rights and responsibilities, registration, formation of the Executive Committee, establishing and expending of fund, duties of employer, duties and powers of Chief Registrar and Township Registrar, and lock-out and strike.

Relevancy

- Concerned with both employers and employees, this law allows the organization of labourers, and the registration thereof, negotiation between the employer and the labourers in case of complaints arising, and demands of rights by the labourers.
- When it comes to shutting down the business on other holidays, the labourers shall report the day to the negotiation board 14 days ahead, and the employer shall shut down the business on approval of the board.—Section 37
- If the labourers want to boycott the employer, they shall report the activity to the negotiation board 3 days ahead and the board shall negotiate between the labourers and the employer, failing which the boycott shall be allowed.—Section 38
- The employer shall recognize that the labour organization represents all his labourers.—Section 29

2.5.20 *Labor Dispute Settlement Law (2012)*

Overview

The Labour Dispute Settlement Law, enacted March 28, 2012, contains 60 sections under 10 chapters:

1. Title and definition; 2. Formation of the Workplace Coordinating Committee; 3. Formation of the Conciliation Body; 4. Formation of the Dispute Settlement Arbitration Body; 5. Formation of the Dispute Arbitration Council; 6. Settlement of dispute; 7. Confirmation, amendment and effectiveness of decision; 8. Prohibitions; 9. Penalties; and 10. Miscellaneous.

Relevancy

- This law mentions its objectives to settle the disputes between the employer and the labourers. The employer, if his or her business has employed at least 30 labourers, shall form the labour coordination committee.—Section 3
- State and regional governments shall have the labour dispute negotiation tribunal; the township authorities shall have the labour dispute negotiation board; and the ministries shall have labour dispute negotiation tribunal council.

2.5.21 *Land Acquisition Act (1894)*

Overview

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

The Land Acquisition Act, promulgated during the British era on March 1, 1894, has eight parts. There is an Amendment Law enacted on October 21, 1954.

The eight parts deal with: 1. Preliminary; 2. Acquisition; 3. Reference to court and procedure thereon; 4. Apportionment of compensation; 5. Payment (of compensation and deposit); 6. Temporary occupation of land; 7. Acquisition of land for companies; and 8. Miscellaneous.

Relevancy

- Part 2 (Acquisition) deals with phases in taking possession of a piece of land: preliminary enquiry, investigation for measuring the land, acquiring the land, fixation of compensation, paying of compensation, and confiscating the land.—Sections 4 to 17
- The President of the Union may authorize any officer of any company desiring to acquire land for its purposes to exercise the powers conferred by section 4. Some words in this section are to be construed accordingly.—Section 38 (1) and (2)

2.5.22 Land Acquisition, Resettlement and Rehabilitation Law (2019)

Overview

This law, with 71 sections, has 14 chapters, enacted on 19 August 2019.

1. Title, forced begin, correction and definitions; 2. Objective; 3. Formation the Central Committee and his duties; 4. Preliminary propose, inspection and pro-investigation; 5. Issuing the advertisement order for acknowledgement to confiscate land and objection application; 6. Land acquisition; 7. Right to choice the chance of whose land has been confiscated; 8. Compensation and indemnity; 9. Resettlement and rehabilitation; 10. Urgently acquisition; 11. Temporary occupation of land; 12. Retaking position of land, confiscated and handed over; 13. Offences and penalties; 14. Miscellaneous.

Although Myanmar Government intended to replace the land acquisition Act 1894 with the Land Acquisition, resettlement and rehabilitation law (2019), this law has not come into force yet.

When this law can be used, it is more probably justifying land issues in Myanmar.

Relevancy

This law sets out the followings:

- the groups entitled to compensation and access to resettlement and rehabilitation for land acquisition and livelihoods affected. —Section 39
- the processes, studies and consultations to be carried out as part of the acquisition and where relevant, the resettlement and rehabilitation processes. —Section 46

2.5.23 Farmland Law (2012)

Overview

The Farmland Law and the Vacant, Fallow and Virgin Land Management Law (See below), promulgated in 2012, concern land tenure. The relevant ministry is the Ministry of Agriculture and Irrigation.

The Farmland Law, enacted on March 30, 2012, has 13 chapters:

1. Title, enforcement and definitions; 2. Right for farming; 3. Rights related to permitted land; 3. Rights relating to permitted land; 4. Conditions in respect of the right to work farmland; 5. Formation of Farm Management Bodies; 6. Duties and power of the Central Farmland Management Body; 7. Taking action on breach of conditions; 8. Deciding land disputes in respect of the right for farming and appeal; 9. Compensation and indemnity; 10. Utilization of farmland; 11. Farmland administration; 12. Crime and penalties; and 13. Miscellaneous.

Relevancy

- Relating to the farmlands existed on the date on which this Law come into force, Township Administrative Body of the Farmland shall, with the approval of the relevant District Administrative Body of the Farmland, issue the certificate to use the farmland to the following person or organization after registration by paying registration fees to the Township Department in accord

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

with the stipulations. —Section 6

- This law prevents the tenancy of the farmers in the nation, who constitute the majority of the population. Under the law, the Union Government is to form the Central Land Management Committee.—Section 15
- The Committee is responsible for the forming of land management committees respectively in states and regions, districts, townships, wards or village tracts.—Section 16
- The Central Land Management Committee is responsible for managing for the payment of compensations for the farmland confiscated as is required by the nation.—Section 26
- In respect of application to alter originally cultivated crops to others: —Section 28
 - (a) The Central Administrative Body of the Farmland may permit to cultivate other crops in low land (paddy land) after scrutinizing in accord with the stipulations so as not to affect the sufficiency of rice which is the staple crop of the State;
 - (b) The relevant Region or State Administrative Body of the Farmland may, if it is to alter crops in the farmland except low land (paddy land), permit after scrutinizing in accord with the stipulations.
- When it comes for a ministry to using the farmland and otherwise for the long-term benefits of the nation, the ministry concerned may, taking the recommendation of the central farmland management committee and with the approval of the Union Government, proceed with the Project.—Section 29
- In respect of application to use the farmland by other means for the interests of the public: —Section 30
 - (a) The Central Administrative Body of the Farmland may permit to use the low land (paddy land) by other means with the recommendation of the Region or State Administrative Body of the Farmland;
 - (b) The relevant Region or State Government Organization may permit to use the farmland by other means except low land (paddy land) with the recommendation of the Region or State Administrative Body of the Farmland.
- The Central Administrative Body of the Farmland may, if the farmland is not put into effect as the stipulated manner within six months from the permitted day or if the business is not completed within the stipulated period after having permission to use the farmland by other means under Section 30, confiscate such farmland. —Section 31
- In confiscating the farmland for the Projects of the State interests, only the required minimum area shall be confiscated. The Project shall be implemented to complete as soon as possible within the prescribed period and when the Project is not carrying out, it shall be returned to the person or organization which has the original right to use the farmland.—Section 32
- The Union Government or the authority assigned by the Union Government for this purpose shall, except summons by other means, continue to keep not to damage pastures and communal land of the village. —Section 33
- In respect of vacant, fallow and virgin lands that are permitted to carry out or use for agriculture and livestock breeding businesses, when the cultivation and production of crops is stable, the Central Committee for the management of vacant, fallow and virgin lands shall alter and stipulate as the farmland and cause to involve in this Law. —Section 34

2.5.24 Vacant, Fallow and Virgin Land Management Law (2012)

Overview

The Vacant, Fallow and Virgin Land Management Law was enacted on March 30, 2012, has 10 chapters:

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1. Title and definition; 2. Formation of the Central Committee for Management of VFV²² Land; 3. The right to work and use VFV land; 4. Conditions regarding the right to work and use VFV land; 5. Insurance and land tax; 6. Rules to be followed by the person who has got permission to work and use VFV land; 7. Supervision; 8. Support to persons who have got permission to work and use VFV land; 9. Offences and penalties; and 10. Miscellaneous.

The law was amended in October 2018 compelling farmers to register the use of land which fell under the categories of vacant, fallow or virgin.

Relevancy

- This law aims at making use of the vacant land, fallow land and virgin land for a long-term benefit. The President of the nation is to form the Central Committee for Vacant, Fallow and Virgin Land Management.—Section 3
- Myanmar citizen investors and foreign investors authorized by the Myanmar Investment Law to use such kinds of land are to apply for a permit to do so (Section 5). and the Central Committee may, on approval of the Myanmar Investment Commission, allow the investment.

2.5.25 Protection of the Rights and Enhancing the interests of Farmers Law (2013)

Overview

The Protection of the Rights and Enhancement of the Interests of Farmers Law was enacted on October 8, 2013, and contains eight chapters:

1. Title and definition; 2. Objectives; 3. Formation of the Leading Body for Protection of Farmers' Rights and Enhancement of their Benefits and duties and functions thereof; 4. Protection of Farmers' Rights and Enhancement of their Benefits; 5. Loan and assistance; 6. Technology, inputs and assistance for production; 7. Carrying out to get reasonable prices and market for agricultural produce; and 8. Miscellaneous.

Relevancy

- The Leading Body shall coordinate and assist farmers in order to get the following rights: (a) right to select and cultivate crops they desire freely on their farm land without injuring cultivation of paddy, the staple food of the State; (b) right to get reasonable agricultural loan; (c) right to transport and sell agricultural produces freely; (d) right to insure agricultural produces; (e) right to establish farmer associations or organizations in accord with the existing laws.—Section 8
- The leading committee is to prevent unjust and unlawful grabbing of farmland and to help the farmers have the rights they deserve.—Section 9

2.5.26 Rural Area Development Law (2019)

Overview

The Rural Area Development Law was promulgated on December 27, 2019. It contains 13 chapters:

1. Title and definition; 2. Objectives; 3. Formation of the Central Supervisory Committee and its functions; 4. Formation of supervisory committees and their functions; 5. Functions and power of the department; 6. Responsibilities and rights of people living in rural areas; 7. Drinking water supply and environmental sanitation services; 8. Rural electrification service; 9. Construction of rural housing; 10. Establishing revolving fund; 11. Control of fund and auditing; 12. Offences and penalties; and 13. Miscellaneous.

The relevant department and ministry are the Department of Rural Development and the Ministry of Agriculture, Livestock and Irrigation respectively.

Relevancy

- This law deals with rural development and the socio-economic development of people in the rural areas. This law underlines the importance of the participation of the rural population in the programmes of the rural development department to get fresh water, clean environment,

²² VFV: Vacant, fallow and virgin

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

electricity, and housing facilities.

2.5.27 Protection and Safeguarding the Right of the Ethnic Nationalities Law (2015)

Overview

This law was promulgated on February 24, 2015, and contains nine chapters:

1. Title and definition; 2. Objectives; 3. Rights and privileges of ethnic groups; 4. Formation of the ministry and appointment of the minister; 5. Duties and power of the ministry. 6. Protection of the rights of ethnic groups; 7. Prohibitions; 8. Penalties; and 9. Miscellaneous.

The relevant ministry of the Ministry of Ethnic Affairs.

Relevancy

- Ethnic nationalities are defined as the ethnic people who have been living in Myanmar as their original land, exclusive of naturalized citizens and associate citizens.—Section 2 (a)
- This law is to help all ethnic nationalities (currently 135 ethnic races) to have equal rights, and to improve their underdeveloped socio-economic life that involves education, health, business, transportation, etc.
- Rights of the ethnic nationalities include freedom in maintaining their language, literature, culture, art, customs, and religion; the right to do business on the same footing as other nationalities, and to include their representatives in the ruling bodies to work for their affairs.
- The President has appointed the minister for ethnic affairs to manage all this.

2.5.28 Myanmar Immigration (Emergency Provisions) (Extension) Act (1949)

Overview

The Myanmar Immigration (Emergency Provisions) (Extension) Act was promulgated on April 6, 1949, and contains 16 sections. The primary act, enacted on June 14, 1947, was followed by six amendments—on April 27, 1948; on October 13, 1948; on April 6, 1949, on October 25, 1950; on October 19, 1955; and September 28, 1956.

Relevancy

- This act prescribes obligations of foreigners who are to enter Myanmar. The immigration permit includes a certificate or pass or any other document, issued to a foreigner under this Act or the rules made thereunder, for entry into or stay in Union of Burma.—Section 2 (g)
- No foreigner is allowed to come into or go out of the country through any other way than through the seaports, airports or road transportation gates officially recognized.—Section 6 (1)

2.5.29 Myanmar Port Authority Law (2015)

Overview

The Myanmar Port Authority Law was enacted on April 9, 2015, and contains 19 chapters as follows:

Chapters 1 – 9:

1. Title, application and definitions; 2. Objectives; 3. Determining the ports, wharfs and berth area; 4. Permission to operate for the development of the port industries; 5. Determining the port charges; 6. Formation of the Myanmar Port Authority; 7. Functions, duties and powers of the Myanmar Port Authority; 8. Formation of Administration Body; 9. Functions, duties and powers of the Administration Body.

Chapters 10 – 19:

10. Collection of port charges, retaining for the debts and recovery of such debts. 11. Financial duties and powers; 12. Pilot license and assigning duty as pilot; 13. Providing health service within a port limit; 14. Conservation of ports; 15. Construction and management of wharfs and shipyards; 16. Prohibitions; 17. Offences and penalties; 18. Awarding bonus; and 19. Miscellaneous.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Relevancy

- Any person shall not build and operate a wharf of any kind, shipyard, lock chamber or dock chamber or dockyard without an operation license within a port area in the country. —Section 74

However, the Section 89 of SEZ Law stated that, “Notwithstanding anything contained in any existing law, the matters relating to any provision of this Law shall be carried out in accordance with this Law”.

2.5.30 Ports Act (1908)

Overview

The Ports Act was enacted during the British era on December 18, 1908. It contains eight chapters—1. Preliminary; 2. Powers of the President of the Union; 3. Port officials and their powers and duties; 4. Rules for the safety of shipping and the conservation of ports; 5. Port dues, fees and other charges; 6. Hoisting signals; 7. Provisions with respect to penalties; and 8. Supplemental provisions.

Relevancy

- This act, which has been in effect at the ports in Yangon, Mawlamyaing, Kyauk Phyu, Sittwe, Patheingyi, Masei and Myeik since 1908 when it was enacted, prescribes obligations for pilots to listen to the port officers, for the port employees to clear the waterway of obstacles and to maintain security at the ports.

2.5.31 Myanmar Territorial Sea and Maritime Zones Law (2017)

Overview

The Myanmar Territorial Sea and Maritime Zones Law was enacted on July 17, 2017. It contains 11 chapters—1. Title and definition; 2. Objectives; 3. Territorial sea; 4. Contiguous zone; 5. Exclusive economic zone; 6. Continental shelf; 7. The right of hot pursuit; 8. Demarcation of sea boundary with neighbouring countries; 9. Prohibitions; 10. Offences and penalties; and 11. Miscellaneous.

Relevancy

- The law mentions three objectives including prevention of water and air pollution within Myanmar territorial sea and celestial area.— Section 3
- Myanmar’s territorial sea extends to 12 nautical miles of the coastline.—Section 4 Myanmar’s contiguous zone extends to 24 miles off the coastline.—Section 17 Myanmar’s exclusive economic zone extends to 200 miles off the coastline.—Section 19.
- This law prohibits any research, movement of ancient articles, extraction of resources in the contiguous zone, or exclusive economic zone, or offshore shallow water area without prior permission of the government.
- An action of a foreign ship that has polluted Myanmar’s territorial sea or its celestial area shall be regarded as an infringement of the rule of law, peace and security of the nation.— Section 8 (h)

2.5.32 Inland Water-going Vessel Law (2015)

Overview

The Inland Water-going Vessel Law was promulgated on May 19, 2015, and contains 10 chapters:

1. Title, definition and relevancy; 2. Measuring and inspection of vessels and issue of safety certificate for vessel; 3. Competency certificates of the skipper and the engine room overseer; 4. Construction of vessel; 5. Matters relating to protection against dangers in passengers and goods transportation of vessels; 6. Prevention against environmental pollution; 7. Investigation of accident and its course of happenings; 8. Permit for foreign vessels to enter the inland waterway; 9. Offences and penalties; and 10. Miscellaneous.

Relevancy

- This law, with 62 sections, is intended for safety in travelling by inland waterway.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Any accidental spilling or throwing away of oil, chemicals, or anything mixed with oil into the sea, which causes water pollution is prohibited. —Sections 33, 34 and 35
- The law explains the entry of foreign ships into Myanmar's territorial waters, warns the owner or the captain of the vessel to take prior permission of the Water Transport Department for entry, and states that the department shall do according to the bilateral agreement, if there is any, between the two countries. —Sections 41 and 42

2.5.33 Conservation of Water Resources and Rivers Law (2006)

Overview

The Conservation of Water Resources and Rivers Law was enacted on October 2, 2006, and contains seven chapters—1. Title and definition; 2. Aims; 3. Duties and powers of the Ministry of Transport; 4. Duties and powers of the Directorate of of Water Resources and River Systems; 5. Prohibitions; 6. Penalties and 7. Miscellaneous.

Relevancy

- The four objectives of this law include conservation of water resources and rivers for the benefits of the public, and prevention of damage to the natural environment.
- The law prohibits any action with the intention of damaging or changing the waterway, wasting the water resources, damaging a waterway control building or a port thereof, causing a craft to bump into the control building, building a dockyard or shipyard on a river bank without permission, building wharfs or pontoon bridges or landing stages or grooving for landing.

2.5.34 Vehicle Safety and Motor Vehicle Management Law (2020)

Overview

The Vehicle Safety and Motor Vehicle Management Law was legislated on May 26, 2020, and contains 15 chapters:

Chapters 1 – 7:

1. Title and definition; 2. Aims; 3. Formation and duties of National, Regions/States and Nay Pyi Taw Council Vehicle and Road Traffic Safety Councils; 4. Rights and duties of the Ministry; 5. Rights and duties of the department; 6. Registration of motor vehicle; 7. Driver and conductor licenses.

Chapters 8 – 15:

8. Business license; 9. Appeal; 10. Paying compensation; 11. Maintenance of discipline and taking action; 12. Establishment of fund, receipts, use, maintenance and management; 13. Prohibitions; 14. Penalties; and 15. Miscellaneous.

The relevant institutions are the Department of Road Transport and the Ministry of Transport and Communications.

Relevancy

- This law has eight objectives including registration of motor vehicles after due examination and issuing of driving licences to the drivers after a driving test.
- Registration means registration of a motor vehicle initially with the registrarion office in accordance with the rules.—Section 2 (h)
- Temporary registration means registration of an imported motor vehicle for use within a limited period in Myanmar.—Section 2 (i)
- Road transport directorate may allow driving under a regional or international license accepted by Myanmar in agreement with the international conventions and regional agreemnts. — Section 14 (d))
- Owners of motor vehicles are to register their vehicles according to the obligations. — Section 17

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- People may apply for driving license or conductor license according to the obligations. — Section 34 (a)

2.5.35 Myanmar Marine Fisheries Law (1990)

Overview

The Myanmar Marine Fisheries Law was legislated on April 25, 1990, and contains 13 chapters:

1. Title and definition; 2. Application for licence; 3. Payment of duties and fees; 4. Registration; 5. Determination of fishing ground; 6. Duties and rights of license holder; 7. Powers of the department and director-general; 8. Duties and powers of the inspector; 9. Duties of the skipper/captain of the vessel; 10. Appeal; 11. Prohibitions; 12. Offences and penalties; and 13. Miscellaneous.

The relevant institutions are the Department of Fisheries and the Ministry of Livestock and Fisheries.

Relevancy

- Fishing grounds shall be determined as required by the Department and fishing rights shall be granted to citizens. But preference shall be given to citizens in the fishing grounds between the baselines and the coast, as declared in the Territorial Sea Maritime zones Law. — Section 13
- Fishing Ground means the fishery waters in the Myanmar Marine Fisheries Waters or place specified by the Department for the purpose of fishery. This expression also includes Myanmar Marine Fisheries Waters or place, where fishery can be carried out. — Section 2 (m)

2.5.36 Forest Law (2018)

Overview

The Forest Law was enacted on September 20, 2018, and contains 13 chapters:

1. Title and definition; 2. Objectives; 3. Prescription of reserved forest and Protected forest outside reserved forest; 4. Management of forestry affairs; 5. Establishment of forest plantation; 6. Permit to extract forest produce; 7. Moving of forest produce; 8. Management of drifting timber and ownerless timber; 9. Establishment of timber-based factory; 10. Search, arrest and taking action through administrative means; 11. Appeal; 12. Offences and penalties; and 13. Miscellaneous.

The relevant institutions are the Department of Forest and the Ministry of Natural Resources and Environmental Conservation.

Relevancy

- This law focuses on the protection of forests, preservation of the natural environment and resources, as a way to realise the policies thereon following the international protocols on risk reduction during the time of climatic changes. It points out raising of forest plantations, extraction and transportation of forest products according to the law.

2.5.37 Protection and Safeguarding of Biodiversity and Natural Conservation Areas Law (2018)

Overview

The Protection and Safeguarding of Biodiversity and Natural Conservation Areas Law was passed on May 21, 2018. It contains 13 chapters:

1. Title and definition; 2. Objectives; 3. Formation of the committee and functions and duties thereof; 4. Designation of protected areas and establishment of zoological gardens and botanical gardens; 5. Protected wildlife animals and wild plants; 6. Hunting; 7. Right to establish zoological garden and botanical garden; 8. Registration; 9. Taking administrative action; 10. Appeal; 11. Offences and penalties; 12. Exemptions; and 13. Miscellaneous.

The relevant institutions are the Department of Forest and the Ministry of Natural Resources and Environmental Conservation.

Relevancy

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- This law is to protect the biodiversity, wild life and natural vegetation. It has seven objectives including following the international agreements on the protection of wild life, natural vegetation, ecosystem and migratory birds; and controlling the trading in wild life, natural vegetation, their parts and their by-products. Existence of ecosystem and diversity of wild life is prevalent in Myanmar.

2.5.38 Protection and Conservation of Cultural Heritage Regions Law (2019)

Overview

The Protection and Conservation of Cultural Heritage Regions Law was enacted on February 28, 2019, and contains 13 chapters:

1. Title and definition; 2. Objectives; 3. Formation of national-level committee and its functions; 4. Formation of Region/State conservation committees and regional conservation committees; 5. Determining cultural heritage region; 6. Protection and conservation of cultural heritage region; 7. Functions of the ministry; 8. Functions of the Region/State conservation committees and regional conservation committees; 9. Application for prior permission, scrutiny and issue; 10. Prohibitions; 11. Offences and penalties; 12. Establishment, maintenance and management of the Cultural Heritage Management Fund; and 13. Miscellaneous.

The relevant institutions are the Department of Archaeology and National Museum and the Ministry of Religious Affairs and Culture.

Relevancy

- This law is to protect and conserve the cultural heritage such as buildings and sites that should be valued, and which are at least 100 years old. The eight objectives of the law contains to protect the heritage from being destroyed; to protect it in accordance to cooperate with international, local and foreign organizations working on conservation of heritage.

2.5.39 Protection and Conservation of Antique Structures Law (2015)

Overview

The Protection and Conservation of Antique Structures (or Monuments) Law was legislated on August 26, 2015, and contains 10 chapters:

1. Title and definition; 2. Objectives; 3. Definition of an ancient monument; 4. Protection, preservation, transfer and receipt of ancient monuments; 5. Observing ancient monuments; 6. Notifying the presence of an ancient monument; 7. Applying for permission, scrutiny and approval; 8. Prohibitions; 9. Offences and penalties; and 10. Miscellaneous.

Relevancy

- This law is to protect and conserve the geological sites that are under or above ground and are at least 100 years old, building sites have old buildings on them, and buildings classified as antique structures by the Ministry of Culture by its notifications. This law prohibits any action that will change the origin any way or reduce the cultural value of the antique structures.

2.5.40 Protection and Conservation of Antique Objects Law (2015)

Overview

The Protection and Conservation of Antique Objects Law was enacted on July 22, 2015, and has nine chapters:

1. Title and definition; 2. Objectives; 3. Specification of an ancient object; 4. Protection, preservation, submission and acceptance of antique objects; 5. Inspection of an ancient building; 6. Informing about the presence of an ancient object; 7. Applying for permission of antique object business; 8. Offences and penalties; and 9. Miscellaneous.

Relevancy

- Antique objects are defined as objects on the ground or under the water that are at least 100 years old, including fossils and objects people used to use. — Section 2 (g)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- This law has five objectives including: to protect and conserve the antique objects in accordance with the international convention accepted by Myanmar and the regional agreements.—Chapter 2
- There are 20 definition of an antique object. — Chapter 3

2.5.41 Social Security Law (2012)

Overview

The Social Security Law was enacted on August 31, 2012, and contains 12 chapters:

1. Title, effectiveness and definitions; 2. Objectives; 3. Establishment of the Social Security Board and functions thereof; 4. Formation of social security offices, hospitals, clinics and appointing staff; 5. Social security system and benefits; 6. Applicability to employment injury benefit insurance system of employment injury benefit fund and benefits; 7. Provisions relating to both Social Security Fund and Employment Injury Benefit Fund; 8. Establishing and maintaining the Social Security Fund; 9. Contribution and subsidization from the Union Consolidated Fund; 10. Taking administrative action, settlement of disputes and appeal; 11. Offences and penalties; and 12. Miscellaneous provisions.

Relevancy

- This law defines “worker” as a person who is employed permanently or temporarily in any establishment and who earns a living with wage obtained by using physical or mental capacity. In such expression, it also includes apprentices and trainees whether they obtain the wage or not. However, it does not include family members of the employer who live together and depend upon the employer.—Section 2 (a)
- Only workers who have been registered and insured with the Social Security Board are entitled to enjoyment of the social security benefits.—Section 2 (c)

2.5.42 Employment and Skill Development Law (2013)

Overview

The Employment and Skill Development Law was enacted on August 30, 2013, and contains 10 chapters:

1. Title and definitions; 2. Seeking employment and employee; 3. Signing Employment Agreement; 4. Forming Employment and Skill Development Teams and their duties and responsibilities; 5. Employee skill development and doing training program; 6. Registration and founding of the Training School and Skill Assessment Departments; 7. Conducting the skill competition; 8. Founding and using Employee Skill Development Fund; 9. Offence and penalties; and 10. Miscellaneous.

Relevancy

- The Employment Agreement shall be made between the employer and the employee within 30 days of appointment. The law prescribes 21 points to be included in the agreement.
- The Union Government will form the Central Body for Employment and Skill Development, including Union Ministers and chairmen of relevant organizations as members. The Central Body will lay down policies, form employment and skill development team, and its duties and responsibilities.—Sections 6 to 10
- The skill development team is responsible for carrying out skill norms such as classification, assessment and acknowledgement.—Section 11
- For establishing a training school, the employer or the service provider shall apply through the relevant committees to the skill development team to acquire the registration certificate in accord with the stipulations.—Section 16 (A)
- The registered skill assessment department (under the founder of the Training School) is to issue skill recognition certificate to the persons who passed the skill assessment with the approval of the skill development team.—Section 22 (e)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

2.5.43 Workmen's Compensation Act (1923)

Overview

The Workmen's Compensation Act was enacted during the British Era as an Indian Act in 1923. It was amended one time during the British Era on July 1, 1924, and three times in the post-independence period: on March 24, 1955, on April 2, 1957, and on May 11, 2005.

It contains four chapters: 1. Preliminary; 2. Workmen's compensation; 3. Commissioners; and 4. Rules.

Relevancy

- This law defines "dependent" as any of the following relatives of a deceased workman—a widow, a minor legitimate son and unmarried legitimate daughter, or a widowed mother and, if wholly or in part dependent on the earnings of a workman at the time of his death—a widower, a parent other than a widowed mother, a minor legitimate son, an unmarried legitimate daughter, a daughter legitimate or illegitimate if married and a minor if widowed, a minor brother, an unmarried or widowed sister, a widowed daughter-in-law, a minor son of a deceased son, a minor child of a deceased daughter where no parent of child is alive, or where no parent of the workman is alive, a paternal grandparent.—Chapter 1
- Accidents and deaths liable and not liable to compensation, duties of the President of the Union and procedures to follow in case of an injury or on the death of a workman are mentioned.—Chapter 2
- Appointment of the commissioner and his duties and functions are dealt with.—Chapter 3
- The power of the President of the Union to make rules, and schedules in details are mentioned.—Chapter 4

2.5.44 Electricity Law (2014)

Overview

This law contains 74 sections and has 15 chapters:

1. Description of name and meaning; 2. Objectives; 3. Formation of the commission and duties of the commission; Permit issues and their responsibilities; 4. Electrical business license; 5. Quality and standard specifications; 6. Inspection of electrical work and electrical equipment; 7. Power system development planning and regulation; 8. Electrical standards and test methods; 9. Electricity rates and service charges; 10. The right of action of the person who can issue the permits; 11. Prohibitions; 12. Crimes and punishments; 13. Damages, compensation; 14. Appeal; 15. General; etc.

Relevancy

The Ministry, with the consent of the Union Government, may issue permits to those who want to invest and operate from domestic and abroad in connection with electricity-related works.— Section – 8 (b)

Chapter 5 explains the process of implementation for electrical business license in detail.

2.5.45 Myanmar Merchant Shipping Act (1923)

Overview

This Act, with 296 sections under nine parts, enacted on 1st May, 1923, was followed by four amendments: 1.4.1989, 18.6.1989, 20.10.1999, 7.2.2007.

9 parts as follow:

1. Introductory; 2. Master and Seamen; 3. Passenger Ships; 4. Unberthed Passenger Ships and Pilgrim Ships; 5. Navigation; 6. Special Shipping inquiries and Courts; 7. Wreck and Salvage; 8. Legal Proceedings; 9. Supplemental; etc.

Relevancy

"Foreign going ship" means a ship, not being a near coastal voyage ship, employed in trading between any port in the Union of Myanmar and any other port or place. — Section - 2 (2)

Merchant ships determined by the Department of Marine Administration. —Section - 2 (12)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

2.5.46 Sea-Custom Act (1878)

Overview

The Sea-Custom Act was enacted on 1st April, 1878, was followed by four amendments on 21.9.1959, 18.6.1989, 17.3.2015, 6.12.2018.

This law, with 215 sections, has 18 chapters as follow: -

1. Preliminary; 2. Appointment and Powers of Officer, etc; 3. Appointment of Ports, Wharves, Custom-Houses, Warehouses, and Boarding and Landing Stations; 4. Prohibitions and Restrictions of Importation and Exportations; 5. Levy of, and Exemption from, Customs duties; 6. Drawback; 7. Arrival and Departure of Conveyance; 8. General Provisions Affecting Conveyance in Port; 9. Of Discharge of Cargo and Entry Inwards; 10. Of Clearance of Goods for home consumptions of Goods; 11. Warehousing; 12. Transshipment; 13. Exportation or Shipment and Re-landing; 14. Spirit; 15. Coasting Trade; 16. Offences and Penalties; 17. Procedure relating to offences, appeals, etc; 18. Miscellaneous; etc.

Relevancy

No goods specified in the permission list shall be brought, whether by land or sea, into the Union of Myanmar. —Section - 18

The competent custom official at any custom port may at any time deport at his discretion, one or more officers of customs to board any conveyance in or arriving at such port. —Section - 67

2.5.47 Telecommunications Law (2013)

Overview

This law, with 89 sections, has 19 chapters, was enacted on 8 October 2013, amendment on August 29, 2017.

1. Title; Definition; 2. aims; 3. Telecommunication service business license; 4. Licensing of telecommunications equipment; 5. Duties of License; 6. Management of frequency and satellite orbital position; 7. Communication number designation and electronic address designation; 8. Technical standards; 9. User protection; 10. Connect and use and interact; 11. Prohibition of anti-competitive practices; 12. Inspection and supervision; 13. Installation of network maintenance and modification; 14. Resolution of disputes; 15. Fulfilling basic communication needs regardless of location for the benefit of the public; 16. Administrative action; 17. Formation of the appellate tribunal, assignment, hearing and determination; 18. Offences and penalties; 19. Miscellaneous; etc.

Relevancy

This law has five aims, including providing protection to the establishment and operation of telecommunications services and users in accordance with the law. —Section 4 (d)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Rules and Guidelines

Some important rules and guidelines of the respective laws are highlighted as follows:

2.5.48 Myanmar Special Economic Zone Rules (2015)

- Rule 20: The Management Committee concerned shall form the one-stop service department comprising over eleven departments including the Immigration and National Registration Department, Investment and Companies Administration Department (or) Companies Establishment and Management Department (or) Organization.
- Rule 23: The Committee shall perform for the convenience of the investors, 10 items of duty including: (a) issuing permits, licenses, and permission required to do business in the special economic zone; (b) registering of companies and related work thereto; (c) helping foreigners and their families get visas and stay in Myanmar; and (d) issuing work permits for foreigners.
- Rules 39 to 46: The marking of boundaries and land use and the procedures to get permit for land use, to sell the land use permit, to mortgage, rent, exchange, or give the land to somebody else are detailed.
- Rule 90: A business person or an investor, if they work with Myanmar currency within or outside of the special economic zone, may open bank accounts with the authorized dealer bank that has a permit to exchange money.
- Rule 91: They may send or transfer foreign currencies in accordance with the management law and rules.
- Rules 92 to 96: Insurance companies owned by Myanmar nationals, foreigners, or joint ventures may, under the permit from the Myanmar insurance supervision board, do insurance business within the special economic zone.
- Rules 126 & 169: The investors in the free zone to report to the management committee when they have to import goods, but they do not need to have an import license, and neither do they need to have an export license for their products.
- Rules 209 to 218: The rules deal with the employment affairs such as employment of workers, minimum wage, salaries, holidays, redundancy payments and compensations, regarding the duties of the management committee, and employment of skilled Myanmar citizens, and setting of disputes.

2.5.49 Environmental Conservations Rules (2014)

These rules are issued by the Ministry of Natural Resources and Environmental Conservation.

- Rule 2 (d): Environmental impact assessment is defined as the assessment of a project, business, service or an undertaking to know whether it is likely to cause significant bad effects on the physical situations, on people or other living things, on social life or on the business of people, in order to help make a decision on carrying it out.
- Rule 2 (f): The preliminary examination is defined as the examination to know whether an environmental impact assessment should necessarily be carried out, which requires issuing a report with documentation.
- Chapter 10: The Ministry of Natural Resources and Environmental Conservation shall assign the duties of conserving the natural resources and cultural heritage to the environmental conservation department, which may cooperate with other departments and organizations; and the ministry may coordinate with international organizations in order to get technologies and skills.
- Rules 51 to 61: The ministry shall specify the items of assessment, and assign the duties of assessment techniques to the department.
- Rules 51 to 53: The ministry may specify the items of preliminary examination.
- Rules 54 and 55: The person who is going to carry out a project, a business, service or an undertaking shall submit the programme of environmental impact assessment and preliminary

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

examination to the ministry, and seek the prior approval thereof.

Rules 56 to 61: The environmental assessment shall be carried out by a qualified third party, which may be a person or an organization, approved or selected by the ministry; and the ministry may approve the report on the environmental impact assessment.

Rules 62 to 68: The ministry shall notify the business sites and the types of business that require prior permission to work on.

People wishing to invest in a project need to seek the prior approval of the ministry regarding the impacts of the Project on the environment.

2.5.50 Minimum Wage Rules (2013)

There are 48 rules that detail the procedures of fixing the minimum wage. The national committee is to notify the minimum wage, considering the suggestions given by all the regions and doing fieldwork if necessary. The rules describe the duties and rights of the employer and the employees.

2.5.51 Labour Dispute Settlement Rules (2012)

These rules explain the procedures of forming a labour organization and the registration thereof; and detail the duties and rights of the labour coordination committee, labour dispute negotiation tribunal, labour dispute negotiation board, and labour dispute negotiation tribunal council.

2.5.52 Myanmar Port Authority Rules (2016)

The rules detail the duties of Myanmar Port Authority such as taking care of the ports, managing the dangerous goods, and loading and unloading of goods.

However, the Section 89 of SEZ Law stated that, "Notwithstanding anything contained in any existing law, the matters relating to any provision of this Law shall be carried out in accordance with this Law".

2.5.53 Permanent Residency of a Foreigner Rules (2014)

Rule 2 (c): Permanent residence permit is defined as a permit issued to a foreigner so that he or she can live in Myanmar during the time permitted.

Rules 3 to 8: A person may apply for a permanent residence permit as an expert, a business person, a person related to a Myanmar citizen.

2.5.54 Farmland Rules (2012)

Rules 64 to 68: Help payments of compensations to farmland owners for the farmland confiscated for the benefits of the Nation.

Rules 69 to 94: explain using the farmland.

Section 78 states that for the sake of long-term national interests of the state, the Union ministry or Nay Pyi Taw Council or the regional or state government that wants to use the agricultural land in another way for the Project implementation:

- (a) It shall be submitted to the Union Government with the opinion of the Central Farmland Management Committee.
- (b) When the approval of the Union Government is obtained, the Project can be implemented.

Rules 95 to 99: explain management of farmland.

Section 96 states that the relevant ministry that will implement the Project for the long-term national interest of the state must submit to the Central Farmland Management Committee to be able to seize at least the amount actually needed for the Project to be implemented.

2.5.55 Labour Organization Rules (2012)

There are 43 rules and one of them states that a labour organization shall have 80 members at least, have a constitution and depend on its own fund. Rule 30 states that employers may have organization

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

of employers.

2.5.56 Vehicle Safety and Motor Vehicle Management Rules (2022)

The rules describe the obligations for all kinds of motor vehicles, motorcycles, slow vehicles like trishaws, horse carts, and bullock carts to be registered; for all drivers and conductors to be registered and be put to a test. The rules also describe parking areas and stands for vehicles; limit the weight of cargo and prescribe the kinds of cargo; impose rules for cyclists and pedestrians and prescribe lanes for them; assign the duties of traffic police; and fix road signs. The rules prohibit drink-driving and conducting after drinking too much alcohol, and carrying too many passengers or too much cargo, which may result in the driver or conductor losing their license.

2.5.57 Conservation of Water Resources and Rivers Rules (2013)

These rules point out ways to conserve water resources and waterways, improve waterways and navigation, make drains, and use the water from the rivers.

2.5.58 Electricity Rules (2015)

There are 102 rules under 10 chapters. Chapter 3 of Electricity Rules explains about the types of permits that can be issued.

The Union has the right to manage large scale electric power exploration, building manufacturing transmission distribution and the Minister of Electricity has been given the power to issue permits for electricity-related activities such as trade and exchange. — Rules - 13

2.5.59 Notification No. 1/2017 of Insurance Business Regulatory Board

The Insurance Business Regulatory Board of Myanmar explains in the notification No. 1/2017 to set up representative office for insurance business, including foreign companies in SEZ.

2.5.60 Environmental Impact Assessment Procedure (2015)

The procedure, issued by the Ministry of Natural Resources and Environmental Conservation (former environmental conservation and forestry ministry) has 10 chapters with 13 paragraphs. Paragraph 2 (c) defines a project that requires preliminary examination as a project that the ministry considered may have fewer bad effects or may not have significant bad effects on the environment.

The procedure includes scrutiny by the ministry of the proposal on the environmental impact assessment submitted by the Project proposer; submission to the ministry of the report on the preliminary examination or on the environmental impact assessment carried out by the Project proposer himself or herself or by the third party or a person ; and scrutiny of the report and issue rules on the assessment; or it may turn down the report and uniform the Project proposer of the rejection.

Chapter 6 describes the way to lodge an appeal in case of the rejection of the report. Chapters 7, 8, 9 explains the ways for the Project proposer to submit to the ministry his or her report on the environmental management if necessary; for the ministry to consider the environmental management before its approval; for the Project proposer to keep a close watch on the Project implementation under the supervision of the ministry.

Chapter 10 explains the right of the ministry in strategic environmental impact assessment of projects related to the whole nation.

Chapter 11 describes the power of the ministry to take action against the implementing organization including taking administrative actions and levying fines if the organization should breach the rules described in the prior permit. Appendices provide : (a) kinds of projects that require assessment; (b) diagram showing the procedure of environmental impact assessment; (c) fines and other administrative actions.

2.5.61 National Environmental Quality (Emission) Guidelines (2015)

These guidelines, issued on 29 December 2015 by the the Ministry of Natural Resources and Environmental Conservation (former environmental conservation and forestry ministry), aim at controlling the noises, vibration, emission of gasses, and letting out waste water, as a way to protect the public health

CHAPTER 2: Overview of the Policy, Legal and Institutional Framework
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

and ecosystem.

Air Emissions

Parameter	Averaging Period	Guideline Value ($\mu\text{g}/\text{m}^3$)
Nitrogen dioxide	1-year	40
	1-hour	200
Ozone	8-hour daily maximum	100
Particulate matter PM ₁₀ ^a	1-year	20
	24-hour	50
Particulate matter PM _{2.5} ^b	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter

Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (general application)

Parameter	Unit	Guideline Value
5-day Biochemical oxygen demand	mg/l	50
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical oxygen demand	mg/l	250
Chlorine (total residual)	mg/l	0.2
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	20
Heavy metals (total)	mg/l	10
Iron	mg/l	3.5
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and grease	mg/l	10
pH	S.U. ^a	6-9
Phenols	mg/l	0.5
Selenium	mg/l	0.1

CHAPTER 2: Overview of the Policy, Legal and Institutional Framework

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Parameter	Unit	Guideline Value
Silver	mg/l	0.5
Sulphide	mg/l	1
Temperature increase	°C	<3 ^b
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

^a Standard unit

^b At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge.

Site Runoff and Wastewater Discharges (construction phase)

Parameter	Unit	Guideline Value
Biological oxygen demand	mg/l	30
Chemical oxygen demand	mg/l	125
Oil and grease	mg/l	10
pH	S.U. ^a	6-9
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50

Noise Levels

Receptor	One Hour LAeq (dBA) ^a	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for Public Holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for Public Holidays)
Residential, institutional, educational	55	45
Industrial, commercial	70	70

^a Equivalent continuous sound level in decibels

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Ports, harbours and terminals

This guideline applies to commercial ports, harbors and terminals for cargo and passenger transfer, and covers all aspects of onshore operations including cargo handling, chemical and petroleum storage and handling, embarking and disembarking of passengers, ship support services (e.g., electricity, fuel), waste and wastewater; and waterside operations including ship berthing, maintenance dredging, and vessel repair and maintenance (i.e., in dry dock). Given the nature of port operations there are few stationary effluent discharges (e.g., wastewater and storm water). Discrete point source sanitary wastewater and storm water should achieve the following source effluent levels and general air emissions guidelines shall apply.

Table 2-2: Effluent levels

Parameter	Unit	Maximum Concentration
Biological Oxygen demand	mg/l	30
Chemical Oxygen demand	mg/l	125
Oil and grease	mg/l	10
pH	S.U. ^a (Standard unit)	6-9
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50

2.6 Government Agencies and their regulatory / administrative functions related to the Project

The following table summarizes regulatory and administrative bodies involved either completely or partially in parallel with EIA process while commissioning proposed Project in each phase. The Project Proponent is obliged to closely coordinate with the following administrative framework, but not limited to, for successful implementation of the Project. The processes and functions including project permits, approvals and authorizations among administrative departments of Myanmar are briefly specified in the following table (2-3).

Table 2-3: Ministry and Government Bodies and their relationship with the Project

Ministry / Commission / Committee	Coordination Department	Key Regulatory / Administrative function (including permits and approvals) for the Project
Central Body relating to Kyauk Phyu Special Economic Zone		<ul style="list-style-type: none"> ▪ stipulating the policies for the successful implementation of the Special Economic Zones in accordance with the provisions under Myanmar Special Economic Zone Law and giving instructions as necessary ▪ Deciding whether the development Project is approved or denied within thirty days from the date of submission by the Central Working Body ▪ Providing comments on the feasibility study report ▪ scrutinizing and approving the development plan of Special Economic Zone submitted by the Management Committee ▪ supervising the functions of the Management Committees, carrying out inspections from

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Ministry / Commission / Committee	Coordination Department	Key Regulatory / Administrative function (including permits and approvals) for the Project
		time to time, and coordinating with the relevant governmental departments and governmental organizations <ul style="list-style-type: none"> determining the taxes and revenues, rental fees and land use premiums to be levied under this Law with the approval of the Union Government and giving exemptions and reliefs thereof
Central Working Body relating to Kyauk Phyu Special Economic Zone		<ul style="list-style-type: none"> coordinating with the relevant organizations in order to undertake the investment businesses which will be done in the respective Special Economic Zone with the approval of the Central Body in accordance with the stipulations checking and submitting the Project proposal to the Central Body within thirty days from the date of submission of the Management Committee
Kyauk Phyu Special Economic Zone Management Committee		<ul style="list-style-type: none"> Managing the Project Coordination with CITIC Consortium Myanmar Port Investment Limited Company and all other stakeholders including Government Departments Issuing SEZ Permit, Construction Permit, Operation Permit, Foreign Worker Permit and Import/Export Licenses Having supervising power for environmental matter in SEZ.
Ministry of Natural Resources and Environmental Conservation	Environmental Conservation Department	<ul style="list-style-type: none"> Overseeing, reviewing and exercising the decree in relationship with environmental conservation law, rules, EIA procedures, National Environmental Quality (Emission) guidelines and other relevant environmental related laws and rules Issuing Environmental Compliance Certificate
Ministry of Investment and Foreign Economic Relations	Directorate of Investment and Company Administration (DICA)	<ul style="list-style-type: none"> Regulator for company registration and compliance
Ministry of Planning and Finance	Customs Department	<ul style="list-style-type: none"> Customs clearance for importation and exportation of goods by sea and land as well
	Insurance Business Regulatory Board	<ul style="list-style-type: none"> Issuing provisional permit to overseas insurance companies which meet with the set criteria on application to operate in Special Economic Zones
	Internal Revenue Department	<ul style="list-style-type: none"> Conducting efficient tax administration activities other than customs duty
Central Bank	Foreign Exchange Management Department	<ul style="list-style-type: none"> Foreign exchange control and financing related to the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Ministry / Commission / Committee	Coordination Department	Key Regulatory / Administrative function (including permits and approvals) for the Project
Ministry of Electric Power	Department of Power Transmission and System Control	<ul style="list-style-type: none"> ▪ Supervising and regulating transmission and distribution and utilization of electric power ▪ Supervising and regulating installation, maintaining and using the measuring and protective equipment of electric power and electrical equipment
Ministry of Construction	Department of Building	<ul style="list-style-type: none"> ▪ Granting building and construction permits ▪ Supervising and regulating construction company and quality controlling
Ministry of Labour	Department of Labour	<ul style="list-style-type: none"> ▪ Employment of workers according to existing labour laws ▪ Labour registration
	Department of Labour Relations	<ul style="list-style-type: none"> ▪ Conflict resolution between employers and employees
	Factories and General Labour Laws Inspection Department	<ul style="list-style-type: none"> ▪ Ensuring workers' rights and protection granted under the various labour laws ▪ Ensuring providing wages and salaries accurately and in a timely manner ▪ Fixing working hour of workers in factories and establishments ▪ Ensuring occupational health and safety of workers
	Social Security Board	<ul style="list-style-type: none"> ▪ Providing social services for the workers ▪ Administering social security programs including benefits and contributions
Ministry of Immigration and Population	Department of Immigration	<ul style="list-style-type: none"> ▪ Registering foreign workers and technicians employed
Ministry of Transport and Communications	Department of Marine Administration	<ul style="list-style-type: none"> ▪ Permission to carry out works in the continental shelf ▪ Registration of vessel ▪ Issuing vessel safety certificate ▪ Issuing ship safety equipment certificate ▪ Issuing cargo ship safety radio certificate ▪ Issuing lifesaving appliance certificate ▪ Issuing transport service license of vessels for the permit to ply ▪ Issuing load line certificate ▪ Issuing safety construction certificate ▪ Issuing safety management certificate ▪ Issuing International Sewage Pollution Prevention Certificate ▪ Issuing tonnage Certificate ▪ Issuing International Oil Pollution Prevention Certificate

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Ministry / Commission / Committee	Coordination Department	Key Regulatory / Administrative function (including permits and approvals) for the Project
	Directorate of Water Resources and Improvement of River Systems	<ul style="list-style-type: none"> ▪ Issuing Stockpile Permit (within a bank boundary/ waterfront boundary) ▪ Issuing sand dredging/ excavation Permit (within a bank boundary/ waterfront boundary) ▪ Issuing In-water Works Permit (Bridge, water lines, jetty construction, drainage, underground structures) ▪ Issuing water use permit ▪ Issuing well permit (boreholes)
	Myanmar Port Authority	<ul style="list-style-type: none"> ▪ Issuing permission to cause navigation obstruction ▪ Issuing permission to construct buoy, moor, anchor or embed other material at the bank or shore area ▪ Issuing permission for pilot exemption for vessel/ cargo > 500 t ▪ Issuing permission to enter/exit port ▪ Issuing permission for anchorage <p>However, the Section 89 of SEZ Law stated that, "Notwithstanding anything contained in any existing law, the matters relating to any provision of this Law shall be carried out in accordance with this Law".</p>
	Road Transport Administration Department	<ul style="list-style-type: none"> • Supervising and implementation of the development of road transport operations • Inspection and registering vehicles in accordance with the law • Issuing driver's license • Controlling air and noise pollution caused by vehicles • Inspection and supervising for the safe movement of vehicles and road safety • Managing safe transportation of dangerous goods
	Posts and Telecommunications Department	<ul style="list-style-type: none"> ▪ Managing systematic implementation of telecommunications operations
Ministry of Agriculture, Livestock and Irrigation	Department of Fishery	<ul style="list-style-type: none"> ▪ Issuing permission to erect, construct, place, maintain or use an obstruction (dam, bank, weir) ▪ Approval for drainage obstruction
	Department of Agriculture Land Management and Statistics	<ul style="list-style-type: none"> ▪ Managing permission to use the farmland, rights of person who has the right to use the farmland, terms and conditions to be complied by the person who has the right to use the farmland, utilization and administration of farmland
Ministry of Home Affairs	General Administration Department	<ul style="list-style-type: none"> ▪ Providing and supporting the coordination efforts across regional and state level relating the Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Ministry / Commission / Committee	Coordination Department	Key Regulatory / Administrative function (including permits and approvals) for the Project
		<ul style="list-style-type: none"> ▪ Land acquisition, resettlement, rehabilitation and compensation
Rakhine State Government	State Government Office	<ul style="list-style-type: none"> ▪ Monitoring the progress of the Project ▪ Facilitating coordination works among state and union level of different ministries
	District level and Township level relevant Government Departments and Offices	<ul style="list-style-type: none"> ▪ Monitoring and supervising implementation of project whether it is in compliance with existing laws, rules and regulations ▪ Providing necessary assistance for the smooth implementation of the Project

2.7 Requirement of Environmental Conservation Department

The Environmental Conservation Department made the following remarks for the implementation Kyauk Phyu Special Economic Zone Deep Sea Port of the Project.

- 1) A separate EIA report needs to be prepared for each component, namely, Made Island DSP, Yanbye Island DSP and a road and bridge construction. The preparation of EIA report must be in line with the following aspects:
 - a) According to the article 45 of EIA procedures, the Project Proponent shall submit details of a licensed Third Person or Organization to carry out the EIA investigation to the Ministry of Natural Resources and Environmental Conservation for approval.
 - b) After getting approval for the licensed Third Person or Organization, according to the article 53 of EIA procedures, the Project Proponent shall submit the completed Scoping Report and ToR to the Ministry of Natural Resources and Environmental Conservation for review and approval.
 - c) Based on the approved scoping report, according to the article 63 of EIA procedures, the Project Proponent shall submit the Environmental Impact Assessment Report to the Ministry of Natural Resources and Environmental Conservation for review and approval.
- 2) For the Project implementation, the opinions and suggestions of the community living nearby the Project shall be gathered and taken into account.
- 3) The Environmental related policies, Environmental Conservation Law and Rules enacted by the Government must be complied with.

The Project Proponent commits to comply with all the above-mentioned remarks made by Environmental Conservation Department, Ministry of Natural Resources and Environmental Conservation.

2.8 Status of Transaction Documents for the Project

The Shareholders' Agreement between the Investor and KPSEZ MC was signed on 18th January 2020, while the Company signed the Deed of Adherence on 5th November 2020. The Concession Agreement between the Company (Kyauk Phyu Special Economic Zone Deep Sea Port Co., Ltd.) and KPSEZ MC (as the Contracting Authority) was signed on 5th November 2020.

2.9 Institutional Framework

Presentation of the actual body which is responsible for every activity related to EIA is described in the table below:

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

No.	Activities	Responsible body
1	EIA studies	MSR Consortium
2	Mitigation measures	Project Proponent
3	Monitoring and inspection	Environmental Conservation Department, Project Proponent, Contracting Authority (KPSEZ MC), and Local Community
4	Land Compensation	Contracting Authority (KPSEZ MC)

2.10 Permissions of Relevant Ministries

The Project is to be implemented under the Special Economic Zone Law and therefore the necessary permissions shall be obtained from the Central Body and the Kyauk Phyu SEZ Management Committee, while they will coordinate with other ministries and government departments to procure other necessary permissions for the Project, if required under the existing laws.

2.11 The Project Environmental and Social Management System

In order to achieve the Project vision of generating sustainable economic growth and prosperity for KP SEZ and Rakhine State, with professional and leading port infrastructures and services whilst respecting environment and people’s well-being, the Project Proponent is committed to develop and operate the KPSEZ DSP following integrated “People, Prosperity, Planet” principles which reflect sustainability, environmental and social considerations. The Project Proponent’s corporate environmental and social policies are based on these three key principles.

2.11.1 Project Environmental Policy

The Project Environmental policies are as follows:

- To conserve and protect the environment;
- To develop the relevant plans and procedures in prioritizing environmental sustainability;
- To comply with all applicable Myanmar Environmental laws, rules, regulations, standards and guidelines throughout the Project life cycle;
- To conduct a detailed and thorough environmental and social impact assessment and implement feasible, reasonable, and effective environmental protection measures, Environmental Management Plans and Monitoring Plans;
- To utilize energy and natural resources wisely and efficiently;
- To practice 3Rs (Reduce, Reuse and Recycle) Principle whenever possible and practical;
- To develop and improve operations and technologies to minimize waste and other pollution in line with emission guidelines and standards; and
- To adopt Green Port Concept.

2.11.2 Project Social Policy

The Project social policies are as follows:

- To follow all the applicable social – related laws, rules, standards and guidelines;
- To understand and respect cultural and tradition of local people;
- To encourage, invite and increase local content by engaging local supply, subcontracting services and employment, so to create more business opportunities for the local companies and communities;
- To provide a right platform for job creation, better conditions for women in the workplace, and a brighter future for the young;
- To establish open and transparent communications with local government and community;
- To provide training and employ more local people to participate in the Project construction and operation;
- To allocate budget to carry out corporate social responsibilities and public welfare programs;
- To make sure that the Project is free from incidents;

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- To set up a management system that provides a framework for safety and health management;
- To set up, practice and maintain the procedures for Health and Safety management to provide safe and healthy work conditions for employees;
- To promote decent work, fair treatment, non-discrimination and equal opportunity for all employees;
- To set up and maintain a community grievance redress mechanism to address the grievances of all stakeholders including the local community;
- To provide due consideration to persons in vulnerable positions and situations that are affected or potentially affected by the Project activities;
- To enhance equitable access to development benefits; and
- To enhance the impression of Myanmar's local products: **Made in Myanmar.**

2.12 International Conventions, Treaties and Agreements

Myanmar has signed several international treaties related to the environment and social factors which may have implications for the Project. These include:

Environmental Related:

- United Nations Framework Convention on Climate Change (UNFCCC);
- Kyoto Protocol to the United Nations Framework Convention on Climate Change;
- Montreal Protocol on Substances that Deplete the Ozone Layer;
- Vienna Convention for the Protection of the Ozone Layer;
- London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer;
- Copenhagen Amendment to Montreal Protocol on Substances that deplete the Ozone Layer;
- United Nations Convention on Biological Diversity (CBD);
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- International Tropical Timber Agreement (ITTA);
- Plant Protection Agreement for the Asia and Pacific Region;
- Ramsar Convention on Wetlands, 1982 (a.k.a Convention on Wetlands of International Importance especially as Waterfowl Habitat);
- ASEAN Agreement on the Conservation of Nature and Natural Resources: Cartagena Protocol on Biosafety
- Stockholm Convention on Persistent Organic Pollutants, 2001
- International Convention for the Prevention of Pollution from Ships (MARPOL)
- International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC)
- International Convention on Civil Liability for Bunker Oil Pollution Damage (2001)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

Social Related

- United Nations Declaration on the Rights of Indigenous Peoples
- UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972 (World Heritage Convention)
- Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) 1979
- International Covenant on Economic, Social and Cultural Rights (ICESCR)

2.13 International Best Practice

Where gaps in local legislation exist, the project will be implemented according to international best industry practice, including, IFC's Environmental, Health and Safety (EHS) guidelines for Ports, Harbours and Terminals.

CHAPTER 2: Overview of the Policy, Legal and Institutional Framework
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

International Finance Corporation (IFC)'s Environmental, Health and Safety (EHS) guidelines for Ports, Harbours and Terminals cover the following aspects:

1. Industry specific Impacts and Management
 - a. Environment
 - b. Occupational Health and Safety
 - c. Community Health and Safety
2. Performance Indicators Monitoring
 - a. Environment
 - b. Occupational Health and Safety

Chapter 3: Project Description and Alternatives

Chapter 3. Project Description and Alternatives

3.1 Summary

The Yanbye Island Port Terminal of the Project is to be developed nearshore of Yanbye Island (north-eastern). The Project location is at 19° 22' 49.623" N and 93° 37' 25.912" E which is about 10 nautical km south east of Kyauk Phyu township. The Yanbye Island Port Terminal of the Project is designed into 4 berths multipurpose terminal with total quay length of 1600 m length which is to be constructed after completion of Made Island Port Terminal. The Project footprint includes 243 ha. for terminal areas and 96 ha. (approx.) for new navigational areas. As the Project is in its commissioning or start-up phases, preliminary engineering, surveys, and necessary assessments are in progress; thus, detailed blueprints and engineering designs of each individual structure is under development. The implementation schedule to each particular segment of Yanbye Island Port Terminal of the Project is unknown at this start-up phase. The Project setting and description is subject to change with respect to the outcomes and assessments which are in progress in the start-up or commissioning phase. The Project Proponent shall notify ECD (MONREC) in case of major changes in size, scope, location, layout, technology, risk associated with foreseeable adverse impacts, production methods or pollution prevention / mitigation measures of the Project, or an expansion or second phase development is proposed. Under project information provided and determinants described in the Project proposal report delivered by Project Proponent, 4 different alternatives (i.e., location, orientation, design, and No project.) have been considered by applying Strength, Weakness, Opportunity, and Threat (SWOT) It is observed that proposed project opted ideal alternative for location, orientation and design. But because of these advantages, considerable extent and impacts exhibit for the social environment where the Project is to be implemented. Preliminary findings revealed without having these social and environmental impacts successfully mitigated and addressed, there is highly likely that the fate for Project development could lead to no Project alternative.

3.2 Introduction

This section provides brief information on the proposed Project, Yanbye Island Port Terminal of the Project, including the Project description, related works and activities, and a general overview of the applicable alternatives. The Project summary and pertinent sub-projects under the Yanbye Island Port Terminal of the Project scheme presented in this chapter, is to establish the characteristics of the Project for the purpose of scoping the environmental and social impact assessment for proposed Project. The statements and information are the excerpt of (i) Concept Proposal, (ii) Project Proposal Report, and (iii) additional information provided in Request for Information (RFI) delivered by Project Proponent, CITIC Consortium Myanmar Port Investment Limited and HATCH.

3.3 Objectives and Rationale of the Project

For the economic development and prosperity of the country, Deep Sea Ports play an important role and the proposed DSP could be the catalyst to the creation of new 2-way regional and international trading routes. The DSP development is a key component of the integrated approach by the Myanmar Government, incorporating a new Industrial Park (IP). The KP SEZ integrated development will be one of the most strategically important components of Myanmar's future growth and prosperity. By implementing the DSP Project, the following objectives can be achieved.

- 1) Opening up major global markets across Southeast Asia, China, and India with new direct sea routes to East Asia, Africa and America, Middle East and Europe; and
- 2) Generating sustainable economic growth & prosperity for KPSEZ & Rakhine state and Myanmar with professional and leading port services, whilst respecting environment & people's well-being.

3.4 Project Dimension and Details

The Yanbye Island Port Terminal of the Project will be developed in the last phase, Phase 4 of KPSEZ DSP. In combination with Made Island Port Terminal of the Project, the whole KPSEZ DSPs is designed for throughput (i.e., volume of material handled) and general cargo including bulk cargo at 2,640,000 TEU/year and 5,360,000 T/year respectively. In terms of capacity, the DSPs aims to handle container

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

and general cargo including bulk up to 2,800,000 TEU/year and 5,200,000 T/year.

The Yanbye Island Port Terminal of the Project has a proposed peak annual container capacity of 2.72 million TEUs and a proposed peak cargo capacity of 2.6 million tons annually. To accommodate four berths, the quay at Yanbye Island Port Terminal of the Project is proposed to be 1600 m long and 600 m wide, comprising one multi-purpose berth and three container berths. The Project footprint comprises 96 ha. for terminal areas and 243 ha. (approx.) for new navigational areas.

The Project comprises the construction and operation of a multipurpose terminal to be developed on Yanbye Island. Construction works and activities involves complex civil, harbor, and navigational engineering elements for maximizing flexibility of terminal usage based on berth design, terminal pavement, utility system design, and terminal building design. For terminal operation, it involves operative elements for maximizing flexibility of terminal usage based on terminal equipment, IT system, flexible storage area design and terminal automation. Thus, it needs intricate and extensive engineering and preliminary surveys in commissioning or startup phase to ensure terminal design capacity is not compromised because of any discrepancy exists among construction and operation.

As the Project is in its commissioning or start-up phases, preliminary engineering, surveys, and necessary assessments are being in progress. Thus, the Project design and description are subject to change. With small changes to Project design and scope may have impacts and interactions to the environment proportionately, the Project Proponent, Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd. shall notify ECD of the final layout prior to construction as well as a statement on whether or not these changes affect the findings or commitments of the EIA / EMP.

As per Article 95 of the Myanmar EIA Procedure, the Project Proponent will notify ECD (MONREC) in case of major changes in size, scope, location, layout, technology, risk associated with foreseeable adverse Impacts, production methods or pollution prevention/ mitigation measures of the Project, or an expansion or second phase development is proposed. The Project Proponent shall provide supporting documentation of such changes within the timeframe as may be prescribed.

3.5 Project Location

The Yanbye Island Port Terminal of the Project is to be developed nearshore of Yanbye Island (north-eastern). The Project location is at 19° 22' 49.623" N and 93° 37' 25.912" E which is about ten (10) nautical Km south east of Kyauk Phyu township. The four (4) berth multipurpose Yanbye Island Port Terminal of the Project is to be constructed on 96 ha. for the main island terminal and another 243 ha. for the new navigational area.

This area includes the total sea area on the frontline of Yanbye Island (north-eastern). This will be referred to as the "Project Area" or "Project Site" throughout this scoping report. Aerial imagery photos of Project location and layout is presented in figure (3-1). The coordinates of Project footprint are described table 3-1 below.

Table 3-1: Coordinates of Project Area

Boundary Points	Coordinates	Land Use / Territorial Footprint
1	19°22'44.16"N 93°36'57.71"E	96 ha. Island Terminal Area
2	19°22'37.39"N 93°37'51.60"E	
3*	19°23'3.58"N 93°37'0.21"E	
4*	19°22'56.56"N 93°37'54.83"E	
3*	19°23'3.58"N 93°37'0.21"E	243 ha. Shipping Navigational Area
4*	19°22'56.56"N 93°37'54.83"E	
5	19°22'59.51"N 93°37'59.60"E	
6	19°23'7.07"N 93°36'56.57"E	

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Boundary Points	Coordinates	Land Use / Territorial Footprint
7	19°23'24.78"N 19°23'24.78"N	
8	19°23'30.35"N 93°37'36.67"E	
9	19°24'18.85"N 93°36'53.24"E	
10	19°23'49.02"N 93°37'3.20"E	

(*) overlapped boundary line among terminal structure and shipping navigational area

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

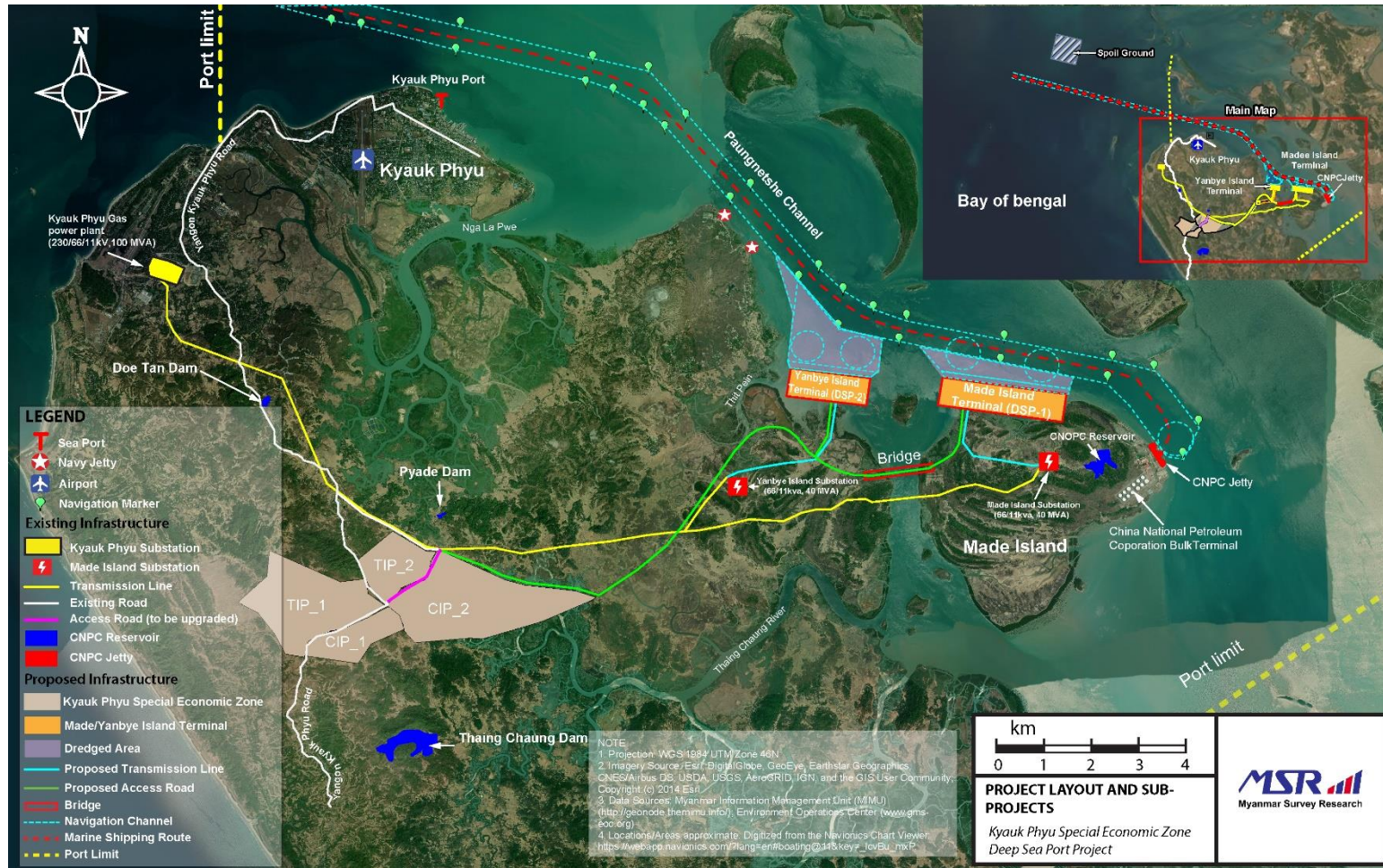


Figure 3-1: Project layout

MSR CONSORTIUM



Independent
Engineers

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

3.6 Project Description

The Yanbye Island Port Terminal of the Project is one of the components of KPSEZ DSP Project. The terminal is designed as multi-purpose island terminal, comprising one (1) multi-purpose terminal and three (3) container terminals. These four (4) berths capacity terminal is to be constructed as the last phase, phase 4 to handle peak annual container capacity of 2.72 million TEUs and a proposed peak cargo capacity of 2.6 million tons annually.

The Yanbye terminal will be located in shallow water between -3m CD and -6m CD, requiring dredging and land reclamation to construct the terminal area. Construction of the Yanbye Island Port Terminal of the Project is subject to the Company meeting criteria in the Concession Agreement.

It is reported that construction activities for the proposed Project will include site preparation, civil and earthworks, and the construction and installation of the following components and activities: heavy container yards, quay structures, temporary construction jetties, apron area, reefer yards, general cargo yards, shoreline protection, temporary coffer dam and diversion dikes, transmission line tie-ins, site roads, blasting, dredging and land reclamation, disposal at sea of dredged material, shipping traffic, traffic management facilities, water treatment plants, and refueling stations.

Construction methods and sequencing for Yanbye Island is expected to follow a similar approach to that for the Made Island Port Terminal of the Project, and will improve on lessons learned from the execution phase of Made Island. General layout map of Yanbye Island Port Terminal of the Project is described in Figure 3-2.



Figure 3-2: Project Layout of Yanbye Island Port Terminal of the Project (Source: CITIC)

3.7 Scope of Project and Salient features

The following table (Table 3-2) presents the Project works and activities that make up the Project scope for Yanbye Island Port Terminal of the Project. With the total Project footprint area is anticipated to be implemented on an estimated area of 339 ha., it includes both onshore and off-shore territory land use to accommodate required project works and activities. The approximate and estimated area distribution for Project Works and Activities are provided and will be constructed on terminal platform.

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table 3-2: Project Components and Activities (source: CITIC)

Project Works and Activities	Yanbye Island Port Terminal of the Project
Total footprint	96 ha
Container Terminals	3
Multi-purpose Terminals	1
Service Terminal	-
Heavy Container Yards	6 37. (ha)
Max Annual Container Capacity (m TEU)	2.72
Annual cargo capacity (m tons)	2.6
Quay Structure - Gravity Structure (e.g., Caisson)	1,600m length
Berths	4
Temporary Construction Jetties	1
Quay Apron Area	12 ha
Reefer Yard	1.2 ha
Empty Yard	8.6 ha
General Cargo Yard	5.1 ha
66 kV transmission line (Port sub-stations to existing sub-stations)	2,965 m
Bridge (length to be confirmed)	
New Access Road (1.3 km)	2-lane
Shoreline Protection / Revetment / rip rap	2800 m
Marine Works (estimated no. of floating navigational aids with anchors)	20 channel markers
Temporary Cofferdam / diversion dikes / flood trench	4400 m
Site roads	17.5 (ha)
Green area	2.6 (ha)
CFS and custom inspection stand	6.1 (ha)
CFS and custom inspection stand	6.1 (ha)
Storage warehouse/maintenance workshop	2
Fire Station	1
Water Treatment Plant	1
Sewage Treatment Plant	1
Water Treatment Plant	1
Marine Supply Base	-
Oil Storage Tank	-
Refueling Station	1
Waste Transfer Station	1
Office Buildings	1
Apartment Buildings	3
Dining hall	1
Apron Office	1
HVAC System	1
Truck Parking Lot	33
Car Parking Lot	33
In / Out Gate Complex and Gate Office	1
Security Kiosk	1
Electricity Substations	4
Expected water consumption	3000 m ³ /d
water line (xx dm)	X m
Peak Workforce - Construction	1,083
Peak Workforce - Operations	1,400
Physical Activities	
Land Reclamation	96 ha
Dredging (side slope of approach channel, turning basin) (estimated affected plan area) & estimated Dredged volume	243 ha est. 22 Mm ³
Blasting (as needed)	
Pile driving (linear meters @15m spacing assumed behind quay wall for crane rail beam), excluding bridges, roads and infrastructure outside of	est. Appr 107 no off piles

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Project Works and Activities	Yanbye Island Port Terminal of the Project
terminal areas	
Civil and earthworks (clearing, stripping, grading, contouring and excavation): access roads, transmission line	TBC
Disposal at Sea (Dredged/Spoil Material)	est. 15.4 Mm ³
Assume that 70% of material to be spoiled, with 30% to be reused for reclamation	
Shipping traffic – Construction (average over period) (route from Kyauk Phyu harbor outer anchorage / pilotage station to the Project site and CNOPC jetty)	TBD
Shipping traffic - Operations (average over vessel sizes) (same route as above in construction)	TBD
Water pipeline installation	

3.8 Site Access and Site Roads

Currently, Yanbye Island Port Terminal of the Project site is only accessible by sea. CITIC Consortium proposed a new 15 km long access road that will be constructed as part of KPSEZ DSP Project scheme to connect Project site and National Highway 2.

By road, the Project will be accessed on National Highway 2 (NH2) from Kyauk Phyu, traveling for 18.6 km south-west where it will adjoin the proposed new 13.6 km (26 m width), four lane road to the DSP, including a bridge crossing of the Kabalah Oceanic Trench to reach Made Island Port Terminal of the Project. The proposed access road from the main road to Yanbye Island Port Terminal of the Project will be 14 m wide, two-lane road, 1.3 km long. (CITIC Consortium)

By sea, the Project site is accessible due to the Project location adjacent to the Rakhine state coastal waterway and maritime shipping route. A regional airport is located in Kyauk Phyu, approximately 31 km north-west of the site.

Site roads within the terminal area will cover an area of approximately 17.5 ha on Yanbye Island.

3.9 Yanbye Island Port Terminal of the Project

Yanbye Island Port Terminal of the Project is also designed for general and bulk (dry) cargoes, with progression towards containerization in future phases. The total terminal area for the development is estimated at 96 ha for the Yanbye offshore Terminal. The location of the marine terminals is ideally situated, being sheltered from the open sea and more extreme storm surge and tsunami conditions due to the proximity of surrounding islands.

Yanbye terminal will be located in shallower water between -3m CD and -6m CD, and will require dredging and land reclamation to construct the terminal area. Construction of the Yanbye Island Port Terminal of the Project is subject to the Company meeting criteria in the Concession Agreement. Construction methods and sequencing for Yanbye Island is expected to follow a similar approach to that for the Made Island Port Terminal of the Project, and will improve on lessons learned from the execution phase of Made Island.

Berth structures and bulkheads are likely to be constructed by placing pre-fabricated modularized concrete caissons to form the quay line, although it is possible alternative structures will be considered in the Project design phases. The general terminal land area will be formed by reclaiming land by hydraulic fill behind berms and cofferdams. The sequencing of the marine works will start with cofferdams to outline the future reclaimed terminal areas, dredging of the new navigational areas, filling the coffered ponds through hydraulic placement of suitable fill, then constructing the caisson foundations under water, floating and placing the caissons to position and filling the last meters behind the new caisson.

Guidance for reclamation activities will follow international practice for the assessment, management and reclamation of land close to sensitive ecosystems (OSPAR 2008). As is typically required for reclaimed land, soil improvement will be required with options including pre-loading, dynamic compaction and/or vibro-compaction. Earthworks for the upland civil works and structures would follow after soil treatment has been completed. Final dredging would be required to remove cofferdam and temporary structures.

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Depending on the suitability of the dredged material, it is assumed the Project will be in a deficit material balance, meaning material must be imported from other sources (possibly a borrow source offshore and inside the Bay of Bengal). This material is required as fill to reclaim the terminal areas.

As the rear supports to the large container ship-to-shore cranes will require a high performance, fairly rigid foundation, it is likely that a pile supported ground beam will be constructed inland of the quay coping, at an estimated offset of 30 m. The ground beam could consist of a continuous concrete beam, supported by piles driven or cast in-situ after the reclamation has provided a construction platform for earthworks to continue.

Once constructed, the quay will provide space for one multi-purpose berth and three container berths. Yanbye Island Port Terminal of the Project will be designed for a peak annual container capacity of 2.72 million TEUs and a proposed peak cargo capacity of 2.6million tons annually.

The marine service berth will be supported by Yanbye Island Port Terminal of the Project's service and supply berth, a grocery supply and refrigeration house, oils supply system and oil storage tank, water supply system and water storage tank, warehouse and stock yard, required ground for ash transportation, mechanism facilities and vehicles, equipment maintenance machinery, storage and logistics supplies. A cross-section of the handling process of Yanbye Island terminal is shown in figure (3-4) below.

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

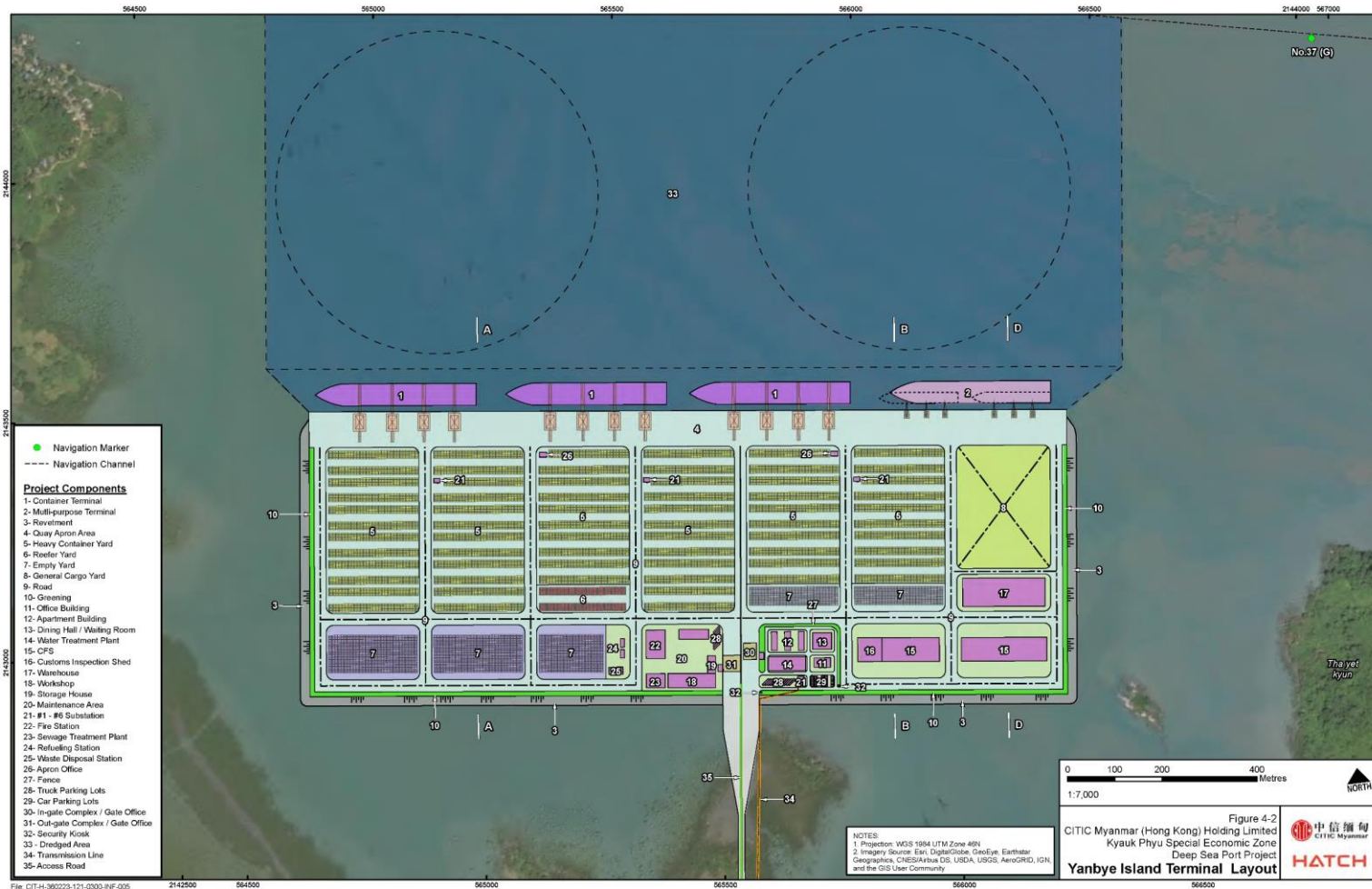


Figure 3-3: Yanbye Island Port Terminal of the Project Layout

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

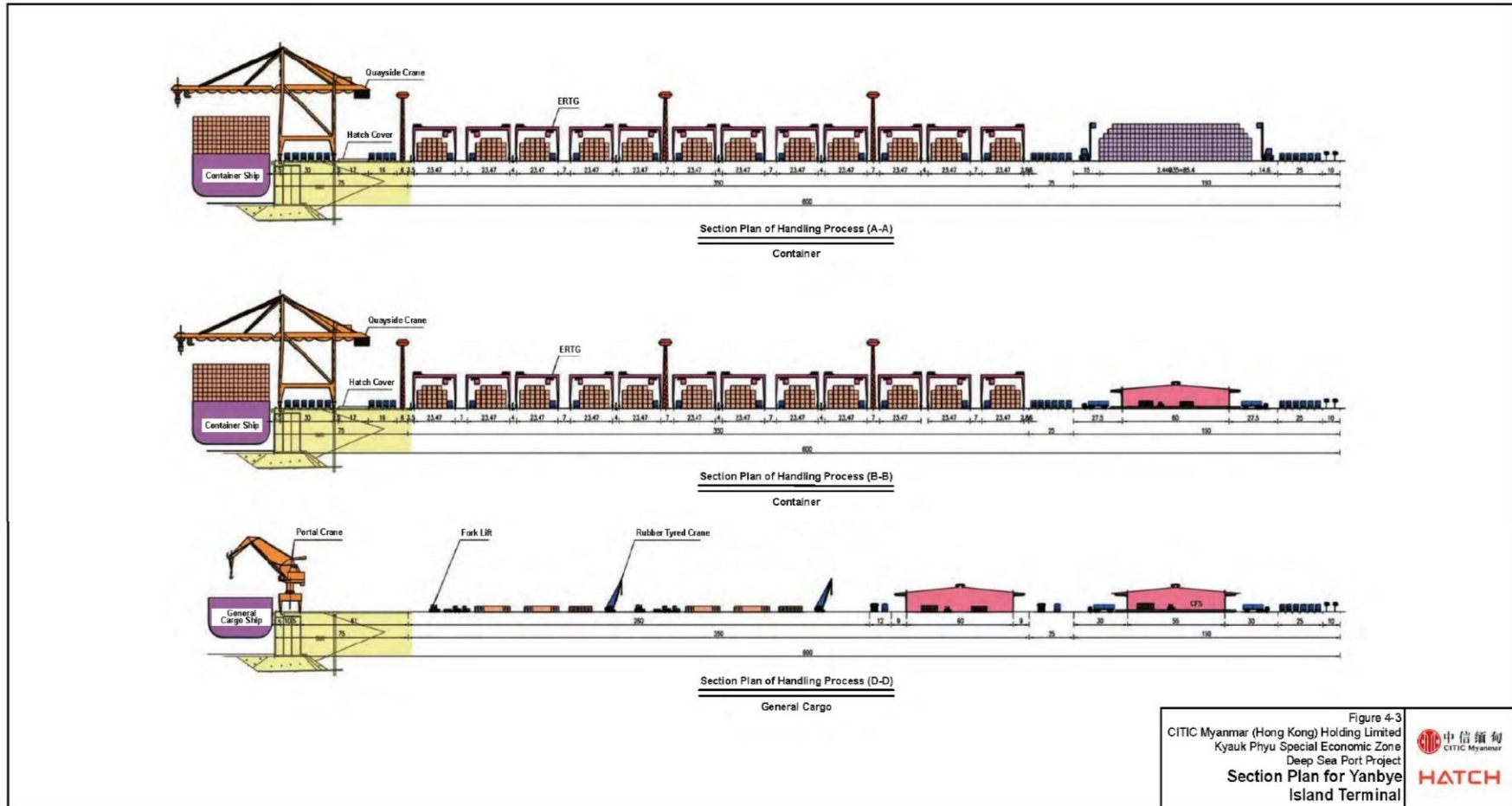


Figure 3-4: Section Plan for Handling Process of Yanbye Island Terminal (See Enlarged Figure in Appendix 3)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

3.10 Navigation and Shipping

3.10.1 Shipping Channel

An existing navigational approach channel designed for 300,000 DWT vessels that service the Myanmar-China Crude Oil Pipeline Project (owned by South-East Asia Oil Pipeline Company, a Joint Venture between CNPC and MOGE) terminal, lies approximately 200 to 400 m north of the Project. The existing approach channel was designed for 300,000DWT oil tanker transport vessels. The design breadth of the external channel is 320m, while the design breadth of the Moon and Made Island channel is 360m. The length of the existing approach channel is 38km with a bottom elevation of -22.8m.

The shipping route for Project vessel traffic is shown in Figure 3-5 and extends from the Kyauk Phyu harbour outer anchorage and pilotage station to the Project site and east to the SEAOP terminal jetty.

The depth of the existing approach channel is deeper than the required depth for the container design vessel and could potentially support two-way traffic for 8000 TEU design vessels. One-way rules may however be enforced for the case when a large crude tanker is using the channel. Should additional width be required in future, the water areas of the channel should be able to accommodate deeper and wider channel dimensions. Detailed modelling of the channel hydrodynamics and full bridge navigation simulation studies will confirm whether any further upgrades to the navigation channel will be required due to increased vessel traffic over the life of the port.

The quay line of Yanbye Island Port Terminal of the Project is 830m away from the boundary of the approach channel. A berthing area of 90m width and turning circle of 750 m diameter is proposed to be located in front of this terminal.

It is currently assumed that navigation aids in the existing approach channel are adequate for low vessel traffic accommodation. However, it is further assumed that the Company will install new aids in the areas of the turning basin and approach path for Yanbye Island Port Terminal of the Project. The aids to navigation for the new terminals will comprise both basin and channel buoys and likely also berth alignment systems figures below.

Four anchorage areas are planned near the Island Terminals and will be utilized as anti- typhoon or waiting areas for berthing. Three anchorage areas are planned for outer waters and will be utilized for inspection and quarantine purposes, and as a waiting area for dangerous cargo and emergency shelter during storms (Figure 3-5). A tugboat will escort ships from the pilotage station to the Project site, but is not required during the outbound, empty journey.

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

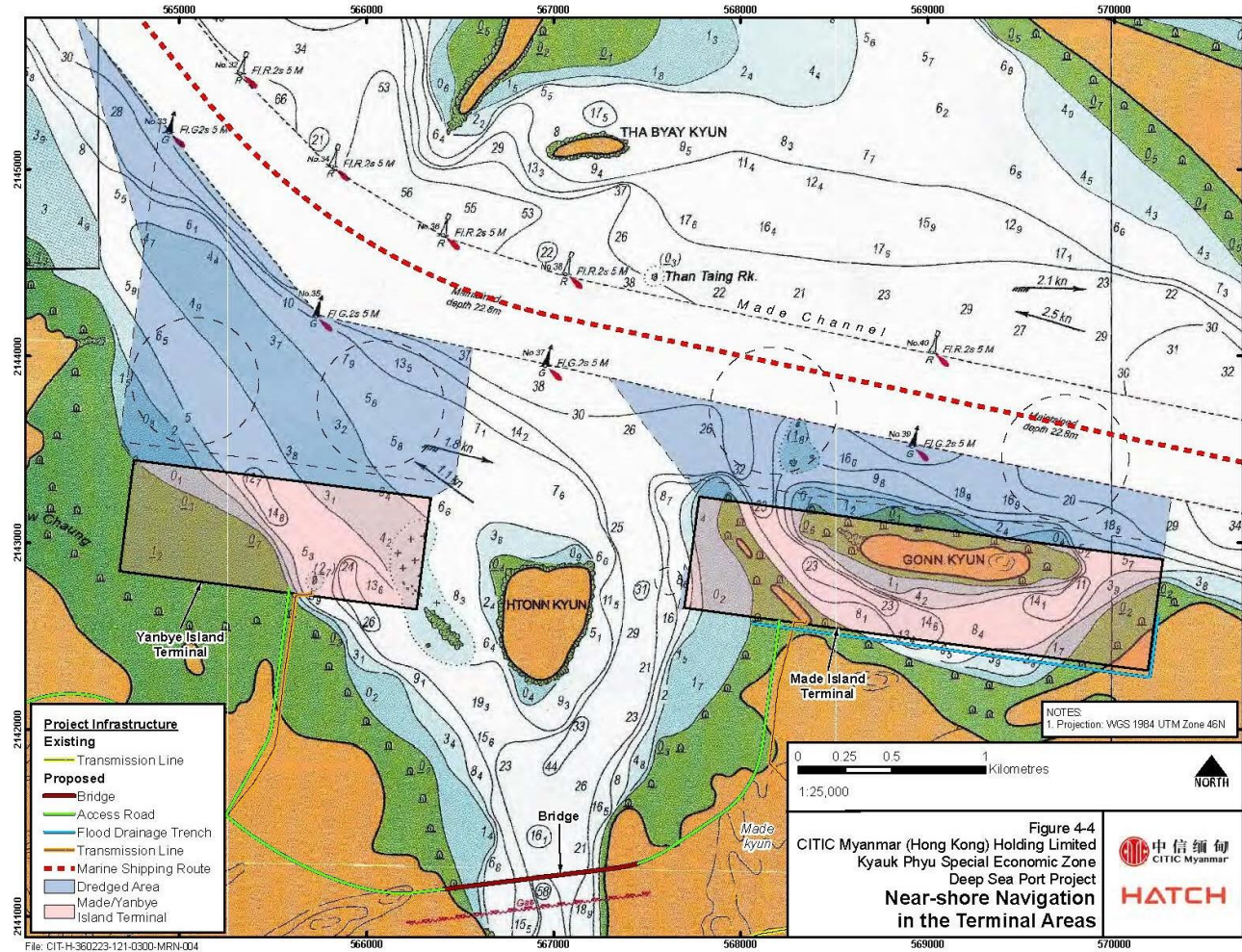


Figure 3-5: Near-shore Navigation in the Terminal Areas (See Enlarged Figure in Appendix 4)

MSR CONSORTIUM



Independent
 Engineers

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

It is estimated that during the construction phase, shipping traffic will consist of a minimum of one vessel per day (two in-bound / out-bound trips to and from the terminal site). Movements of construction vessels within the construction areas of the future port will be required in addition to the traffic related arrivals and departures for deliveries and vessels providing logistics support from nearby areas.

3.10.2 Design Vessel

The Project proposes to use bulk and general cargo vessels of 40,000 DWT to handle a forecasted volume of up to 8M tons annually of bulk and general cargo at peak operations. Bulk cargo carriers of 100, 000 DWT will be used to transport up to 4.6 M TEUs of containers annually at peak operations. Dimensions of design vessels are provided in Table 3-3 and throughput forecasts are provided in Table 3-4.

Table 3-3: Dimensions of Design Vessels

Vessel Type	Capacity	LOA	Beam	Draft
Container Vessel	6,000 TEU	280	41.8	-13.8
Container Vessel	8,000 TEU	340	43.2	-14.5
Container Vessel (Reserved maximum)	18,000 TEU	400	59.0	-16.5
General and Bulk Cargo Carrier	20,000 Ton	166	24.8	-10.0
General Cargo Carrier	40,000 Ton	209	30.0	-12.5
Bulk Cargo Carrier	100,000 Ton	255	39.0	-15.3

Other large-scale marine construction craft will consist of the following vessels:

- Semi-submersible barge
- Grab dredger
- Trailer suction hopper dredger
- Cutter suction dredger
- Dredge hoppers
- Split hull barges
- Pile driving barge
- Mud barge
- Reef blasting ship
- Crane vessel
- Levelling ship
- Belt conveyor ship
- Tugboat
- Anchor boat
- Flatbed barge
- Surveying ship
- Compaction ship
- Traffic boats

The Projected throughput forecast provided by the Myanmar Government in the RFP document for bulk and general cargo for the Project is shown in Table 3-4.

Table 3-4: Estimates of Container Throughput Forecast for KP DSP

Year	Bulk and general cargo (Tons)	Containers (TEU)
2027	1 300 000	620 000
2028	1 560 000	720 000
2029	1 860 000	830 000
2030	2 190 000	960 000

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Year	Bulk and general cargo (Tons)	Containers (TEU)
2031	2 560 000	1 100 000
2032	2 970 000	1 270 000
2033	3 420 000	1 460 000
2034	3 900 000	1 660 000
2035	4 400 000	1 900 000
2036	4 930 000	2 170 000
2037	5 480 000	2 470 000
2038	6 020 000	2 810 000
2039	6 570 000	3 200 000
2040	7 090 000	2 630 000
2041	7 590 000	4 100 000
2042	8 040 000	4 640 000

The volume of container traffic is projected to grow by an average of 14.2% per year from 285,545 TEUs in 2027 to reach 4.64 million TEUs in 2042, accounting for about 46.8% of total Myanmar throughput.

3.11 Marine Infrastructure

3.11.1 Approach Channel

Since the depth of existing approach channel at -22.8m CD is deeper than the required depth of design vessels, the approach channel width can be enlarged by using the side slope of the channel.

According to the PIANC Guideline, the existing approach channel is adequate for two-way traffic for the combination of 8000TEU container vessel and 6000TEU container vessel under full loaded draft. The section of existing channel is shown as below:

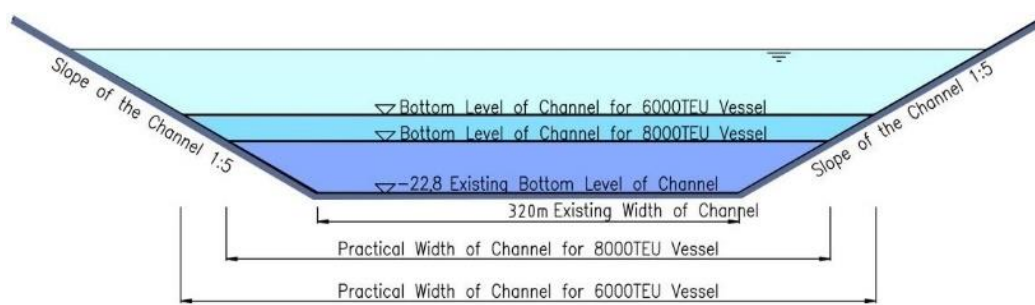


Figure 3-6: Section of existing approach channel

In the phase of design and construction, further analysis and study on the passing capacity of existing channel for two-way traffic of larger vessels will be carried out.

3.11.2 Dredging

There is large quantity of dredging, which may involve destruction of the reef in the Yanbye Island Port Terminal of the Projects. Effective measures will taken to reduce impacts on the environment of water area and around the site, reduce the cost and expedite the progress of construction.

Appropriate arrangement of the berthing area, turning basin and approach path will minimize dredging works.

The dredged materials should be analyzed by investigation to ascertain if it is suitable to be reused. As much as possible, suitable dredging materials should be used for the reclamation in order to reduce the environmental impact due to disposal and it helps to lower the cost of reclamation.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

For unsuitable dredging materials, an offshore disposal area should be proposed. The location of offshore disposal area will be determined by the results of numerical simulation of tide, current and sand movement according to the local hydrological conditions. After complying with the environmental requirements, the proposed offshore disposal area will be submitted to the local authorities for approval.

3.11.3 *Revetments / Shore Protection*

It is proposed that the revetments/ shore protection, temporary cofferdam and diversion dykes are of rubble mound structure.

This is a complex decision due to the complex geological and topographical conditions, and shortage of construction materials. The choice of dyke core material and the type of armoured structure, will consider factors such as prevailing geological, topographical and hydrological conditions, along with service load, and handling requirements. These factors will inform technical, economic analysis and wave cross- section physical model tests to finalize the best option.

3.11.4 *Berth*

i) Layout of Quay Line

Yanbye Island Port Terminal of the Project has a berth length of 1600m. From west to east, one multi-purpose berths and 3 container berths are arranged. The breadth of the Yanbye terminal is 600m.

ii) Harbour Basin

The existing approach channel boundary is 400-600m away from the proposed quay line. A berthing area of 90m width with turning circle diameter of 680m is located in front of the proposed port.

iii) Quay structure

Based on the functional requirements of the initial and future phase of the Project, the quay structure will meet the structural requirements of both container terminal and bulk and general cargo terminal.

Currently no more detailed hydrological and geological information can be obtained. Based on the experience in Crude Oil Terminal Project, the geology of the Project site is relatively complex with large variations of bed rock and the existence of mudstones whose structural strength will decline significantly when it is soaked. Hence, the gravity caisson structure is proposed for the quay structure. As for the service berth, concrete block structure is proposed.

In the design phase, the quay structure should be finalized by comparison of the gravity caisson structure (Figure 3-7) and pile structure (Figure 3-8) using technical and economic analysis. The following aspects will also be taken account: 1) meteorological, hydrological, topographical and geological conditions 2) handling equipment and service load situation 3) local material and construction condition.

Typically, the following design analysis will be carried out to optimize the quay structure and ancillary facilities:

- ◆ External load calculations shall be performed
- ◆ Structural modelling calculations of the quay wall
- ◆ Perform calculations to establish overall structure stability, stability against sliding and overturning of gravity quay
- ◆ Calculate ground stress and foundation bearing capacity
- ◆ Calculate maximum force and bearing capacity calculation of pile foundation
- ◆ Internal forces and reinforcement calculation of each element
- ◆ Ship mooring simulation study.

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

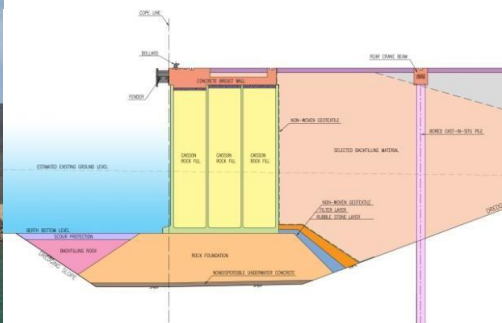


Figure 3-7: Gravity caisson

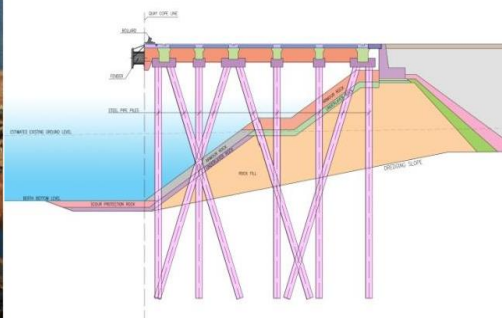


Figure 3-8: Pile structure

3.11.5 Aids to Navigation

The existing approach channel has been equipped with sufficient aids to navigation system. Only aids to navigation for the turning basin and approach path are arranged. According to the proposed layout plan, two new light beacons will be constructed on Yanbye Island Port Terminal of the Project. Solar power supply will be used for all navigation aids.

3.11.6 Anchorage

Three anchorage areas are planned for outer water area and four anchorage areas are planned beside the port areas. The details are mentioned in Table 3-5.

Table 3-5: Planned Anchorage Areas

Location	Name	Depth (m)	Characteristics
Outer water area	No.1 anchorage	-16.5	Inspection and Quarantine
	No.2 anchorage	-16.5	Emergency, wind shelter and anti-typhoon
	No.3 anchorage	-25.3	Especially for dangerous cargo carrier and oil tanker
North of Yanbye Island	No.4 anchorage	-16.5	Anti-typhoon and waiting area for berthing
North of Yanbye Island	No.5 anchorage	-16.5	Anti-typhoon and waiting area for berthing
North of Made Island	No.6 anchorage	-16.5	Anti-typhoon and waiting area for berthing
North of Made Island	No. 7 anchorage	-16.5	Anti-typhoon and waiting area for berthing

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

(a) Port Terminal Layout

For the master plan of KP DSP, the General Layout of Yanbye Island Port Terminal of the Project, please refer to Figure 3-1: Project location and Layout and Figure 3-2: Project Layout of Yanbye Island Port Terminal of the Project.

(b) Port Apron Area

The layout of port apron area should be arranged in accordance with the standards for a modern, large and professional operated container terminal. The width of port apron area includes:

- a. Distance between the sea-side rail and the quay line
- b. Rail span of portal crane or container quay crane
- c. Storage area of hatchway cover
- d. Roads for apron area
- e. Safe distance and the places occupied by high mast lamp posts, etc.

To ensure the handling efficiency of the apron area, six lanes should be catered for in the rail span of container quayside with a width of 30m approximately; the roads in the apron area will have four lanes. Hence, the total width of port apron area will be 75m. Figure 3-9 shows section of container terminal and figure 3-10 shows section of multi-purpose terminal stack yard.

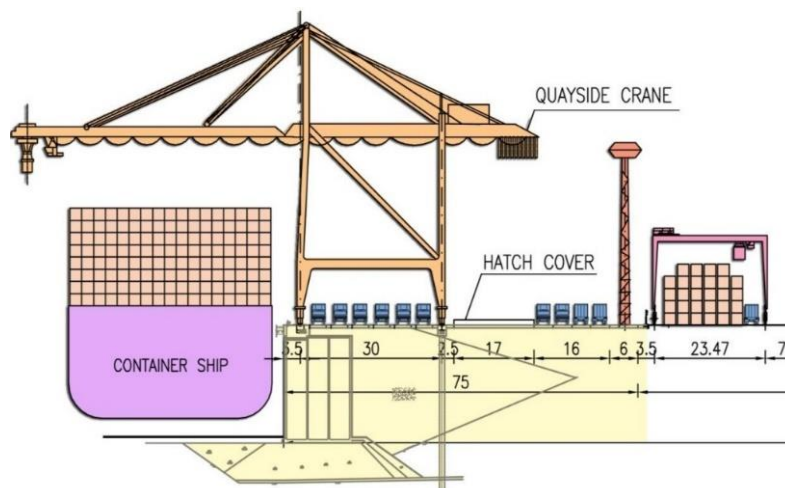


Figure 3-9: Section of Container Terminal

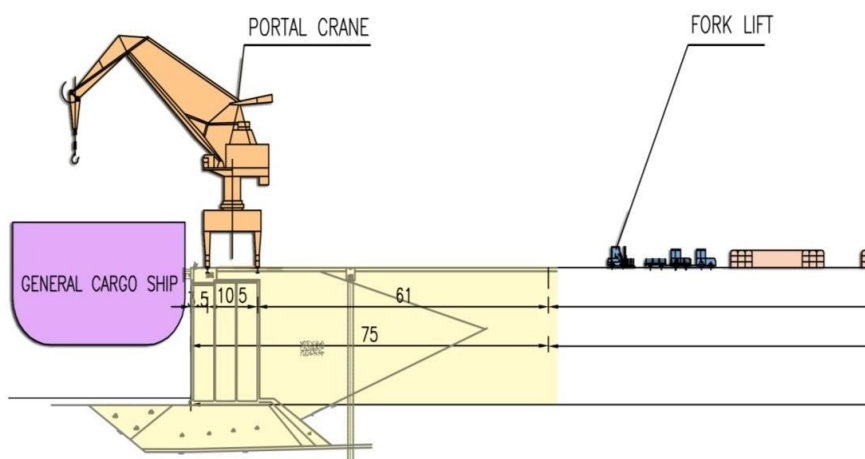


Figure 3-10: Section of Multi-Purpose Terminal

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

(c) Stack yard

RTG and RMG are usually adopted for the modern, large and professional operated container yard because of their high efficiency. The container yard will be equipped with E-RTG option, subject to local resource supply conditions.

The layout of stacking yard will be planned to meet stacking capacity and high efficiency expectations, as well as allowing the transformation of the general cargo yard to container yard in the future, in a cost-effective manner and without affecting existing port operation.

The stacking yard will be divided into two parts: the front stacking yard of 350m width which will cater for mainly the heavy container yard (Figure 3-11), the reefer container yard and the general cargo yard (Figure 3-13); the back stacking yard of 115m width will cater for the empty container yard (Figure 3-12), CFS, etc.

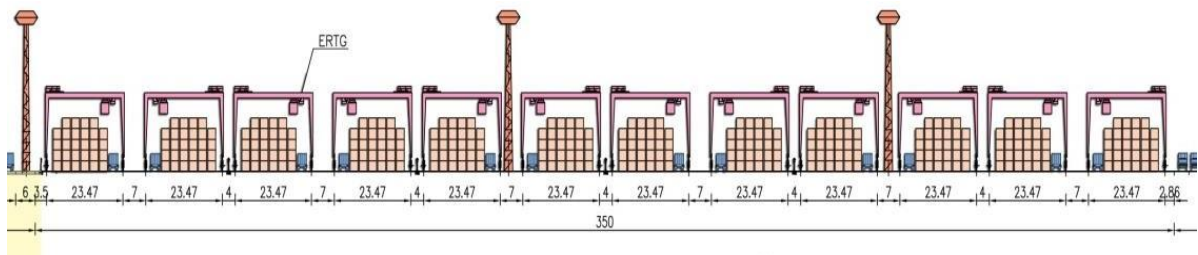


Figure 3-11: Section of Heavy Container Yard

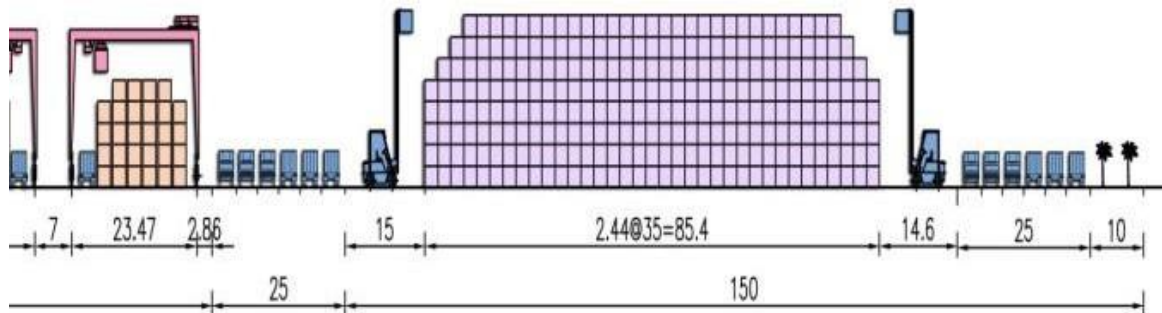


Figure 3-12: Section of Empty Container Yard

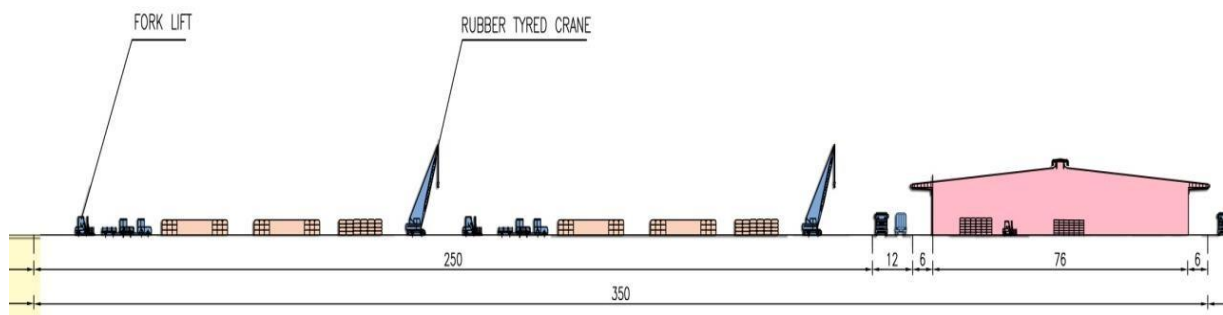


Figure 3-13: Section of General and Bulk Cargo Yard

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

(d) Roads and Gates

The roads inside the port will be a ring road with six lanes for two-way traffic and a width of 25m based on current traffic usage. The in-gate and out-gate will be located adjacent to each other and both will have a waiting area for the vehicles in the queue. Road traffic signs will be installed to ensure safety and promote traffic circulation and to meet the operational requirements and local driving habits. The sketch of gate is shown in Photo Plate 3-1.



Photo plate 3-1: Sketch of Gate

3.11.7 Dredging and Land Reclamation

As noted in Sec 4.3.1 guidance for reclamation activities will follow best international practice for the reclamation of land close to sensitive ecosystems (OSPAR 2008, Doorn *et al.* 2007). The Project is expected to include significant dredging at 22 Mm³ for Yanbye Island to create navigation areas for the harbor basin, turning circles and berths. This material, if suitable can be used as fill for land reclamation.

The typical construction sequence for these types of berths is:

1. After creating the cofferdams (or bund walls) for the receiving of suitable dredged material, dredging will commence to form the required depth turning basis and navigation areas in front of the berths.
2. Dredging of the required areas will likely be done using a combination of trailing suction hopper dredgers (for removing fines and sandy deposits), cutter suction dredger (for softer rock) and in shallower waters, bucket excavator or grab on barges might be required.
3. Replacement of shallow areas and silt with dredged material and possibly crushed rock in certain areas to improve the in-situ founding conditions before receiving dredged materials.
4. Placement of prefabricated caisson structures on prepared placed rock foundations.
5. Spoiling at approved offshore locations for dredged material that is not suitable for reclamation will require dump barges to sail from the Project site to the approved dump sites.
6. Piling for rear crane rails.
7. Soil improvement methods for the reclaimed material through deep foundation improvement or application of high energy methods from the surface is likely required.
8. Provide the final layers to the underside of engineered layers through bulk filling with imported materials.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Bathymetric and geophysical surveys in addition to geotechnical investigations will be required prior to construction, to determine the seabed condition of the Project area and to determine dredging dimensions and finalize dredging volumes. Based on preliminary data received from CITIC, the required channel dimensions for safe passage of the design vessels are proposed as follows (Table 3-6):

Table 3-6: Draft Requirements for Shipping Vessels

Channel	Design Ship (DWT)	Berth Pocket Width	Terminal Basin Width	Depth	Radius	Type of Cargo
Made Island Harbor Basin	Cargo vessel 40,000 DWT Cargo Carrier 100, 000 DWT	90m	Varies 330 - 520m along length of quay	-18.2	750	Bulk, Container, General Cargo

To achieve these dimensions, dredging will be carried out with a trailing suction hopper dredges or cutter suction dredges in areas shown in Figure 3-5. The preliminary estimated dredge volumes (according to the existing conceptual plan) based on information provided by CITIC for basin approach channel for the Yanbye Island Port Terminal of the Project, is 22 Mm³ and 35,000 m³ for the service berth.

Given that the island terminal is located in the direction of river discharge, maintenance dredging will also be required and must take into account peak rainfall when high sediment loads are deposited annually during the raining season (May to October).

With all marine sediments there is a potential of historical contamination. Sediment quality and disposal alternatives will be assessed as part of an alternatives means assessment for the Project. Disposal of unsuitable dredging material will be required, either at an off- shore disposal site provided by the Myanmar Port Authority or on-land. It is likely that, given the scale of dredging required for Project Components, potential disposal-at-sea sites could be several nautical miles offshore into the Bay of Bengal. The Concession Agreement includes a requirement that the distance to ship dredged material is limited to within ten (10) nautical miles of the quay line. A preferred location will be identified during the EIA and permitting review process.

3.11.8 Breakwater/Revetments

It is assumed a breakwater is not currently needed for the Project owing to its protected location, however this will be reviewed as part of the early concept optimization studies. Shoreline protection (revetments), diversion dykes and temporary cofferdams will be incorporated into the preliminary design of the Project plan to assist with working in the dry and to provide shoreline armor for protection from scouring, erosion and sedimentation

3.12 Terminal Infrastructure and Facilities

3.12.1 Reclamation / Land Transformation

The total land area of Yanbye Island Port Terminal of the Project is about 96 ha. The amount of reclamation work will be extensive. Hence, suitable dredging materials will be used for reclamation in order to be eco-friendly, reduce the construction cost and satisfy environmental requirements. In addition, there is a shortfall of material needed for reclamation. It will need to be sourced, selected and purchased after going through proper economic and environmental assessment.

Suitable methods of ground treatment should be chosen after taking into consideration the characteristics of backfill materials, the layers of undisturbed soil, the requirements for foundation stability and settlement and construction methods using surcharge preloading or vacuum preloading, etc. The foundation shall meet the requirements of bearing capacity and settlement criteria after treatment.

CHAPTER 3: Project Description and Alternatives

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

3.12.2 Power Supply

Power supply to support port operations will be provided by constructing transformer step-down stations and 5.6 km of 66 kV transmission line to tie-in to the existing 40 MVA sub-stations on Yanbye Island, which connects to the existing Kyauk Phyu Gas Power Plant. Construction of the required step-downs and transmission line is the responsibility of the Project Proponent.

Table 3-7: Power supply and distribution facility

	External Substation	Substations in Terminal	Power Supply & Distribution
Yanbye Island Port Terminal of the Project	Yanbye island 66/11kV substation	4 substations: SS11~SS14	From Yanbye island 66/11kV substation to SS11, SS12, SS13: 6x11000KVA Loop From SS11 to SS14: 2x high voltage loop

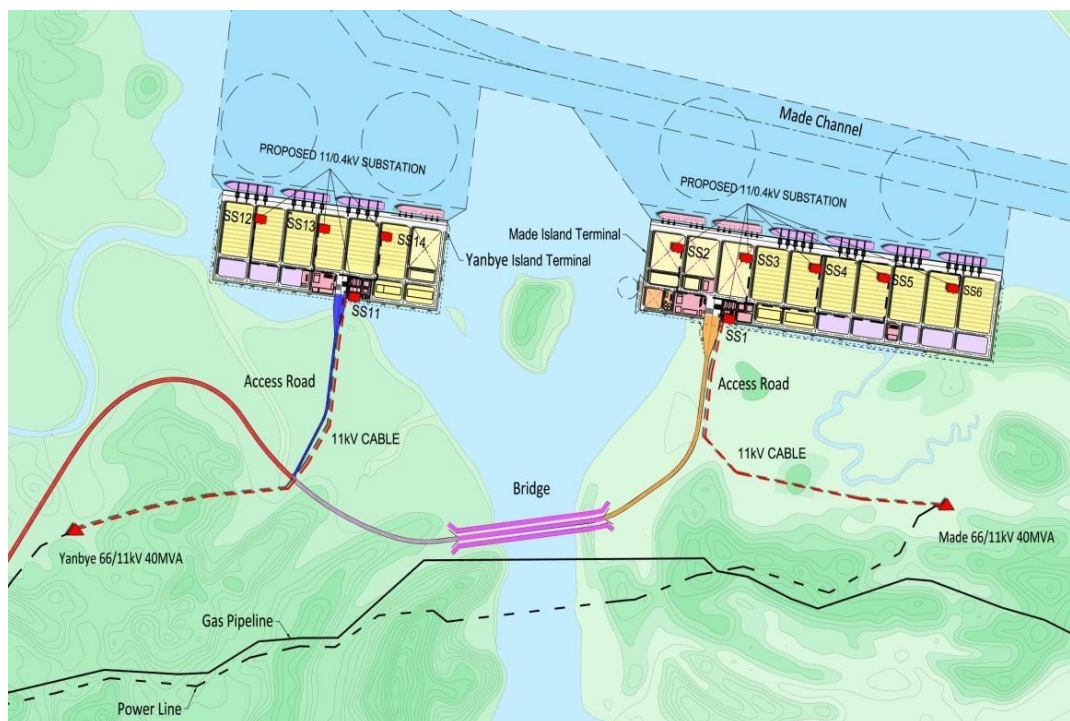


Figure 3-14: 11/0.4kV Substations at Port Sites

Other Power Facilities include:

Emergency Power: One low voltage emergency diesel generator will be installed in the substation SS1 and SS11.

Lighting: High mast lights will be installed on the stacking yards. Street lights will be installed on the side of roads. Lighting intelligently control system will be installed.

Earthing and Lightning Protection: The outdoor earthing system of low-voltage distribution system will be designed as TN-C-S. The indoor earthing system of low-voltage distribution system and street lighting will be designed as TN-S. The total earth resistance should not be more than one (1) ohm.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

3.12.3 Telecommunication

Telecommunication infrastructure including land line communication, internet service and cellular phone systems will be provided by a third-party Project Proponent. The mobile network is anticipated to cover the northern part of Yanbye Island.

A communication switch centre (Figure 3-15) will be constructed at Yanbye Island Port Terminal of the Project and the centre will be connected to the Myanmar national telecommunication network.

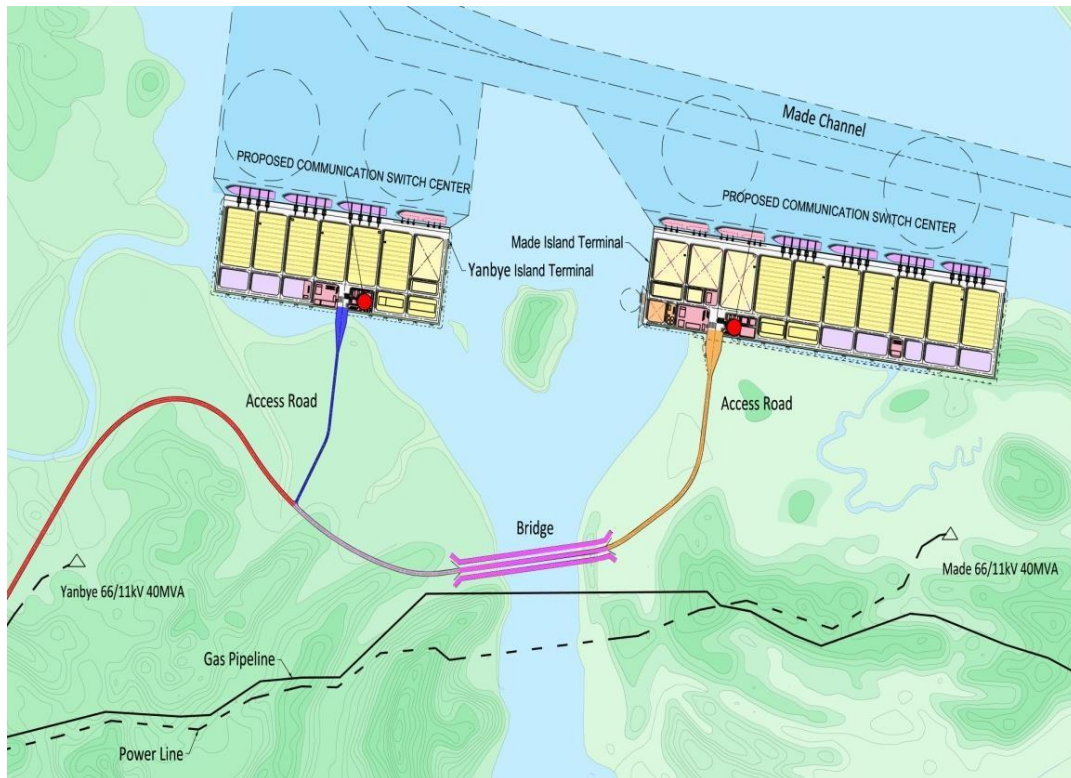


Figure 3-15: Communication switch center at Port Sites

The communication system consists of the following:

- PABX system will be installed for Yanbye Island Port Terminal of the Project to meet the land line telephone communication requirements of the whole terminal.
- Mobile communication: One cellular phone base station will be installed at Yanbye Island Port Terminal of the Project separately.
- Coastal radio station: One coastal radio station for short/long distance ship and AIS system is proposed in Yanbye Island Port Terminal of the Project for use of the Terminals.
- Wireless dispatching communication system: 800MHz Tetra digital trunking communication system is proposed, which provide radio communication for the all the port vehicles, cranes and operational personnel.
- CCTV: Separate CCTV system will be constructed for Yanbye Island Port Terminal of the Project.

3.12.4 Water Supply

Four water supply reservoirs (Doe tan Dam, Pya de Dam, Thaing Chaung Dam and the CNOPC reservoir) have been identified as potential sources of freshwater for the Project (Figure 3-16). The closest water source is the reservoir built by SEAOP, which has an estimated annual volume of 800,000 m³. An agreement with SEAOP to use this water will be required. The total water demand for the Project is

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

estimated at 3,000 m³ / day for Yanbye Island Port Terminal of the Project. Construction of the required water pipelines from the reservoirs to the terminals is the responsibility of the Project Proponent. The alignment of the water pipelines has yet to be finalized.

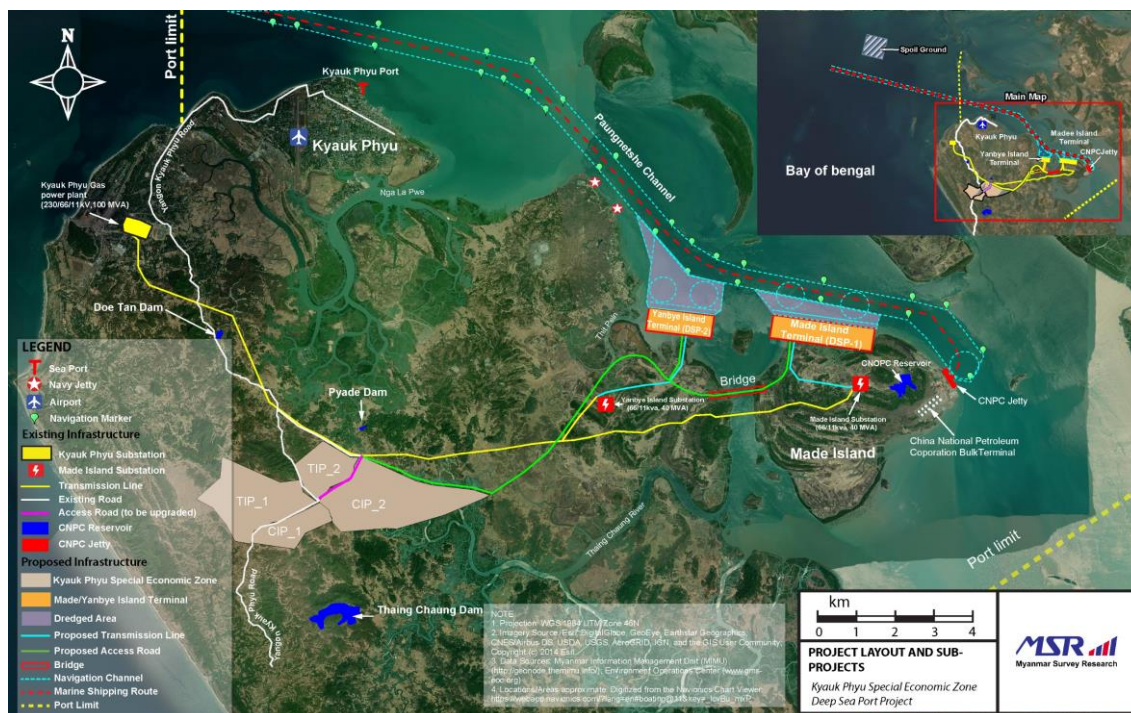


Figure 3-16: Communication switch center at Port Site

The capacity of water treatment plant in Yanbye Island Port Terminal of the Project considers the water requirement of marine supply base. The quality criterion of treated water shall comply with the Myanmar Sanitary Standard for Potable Water.

Minimizing the destruction of natural vegetation is a key consideration during the construction of water pipelines. Once construction is completed, reinstatement works such as grass-planting, tree-planting, etc. shall be carried out expeditiously.

The water supply system of the port consists of the following :

1. Combined supply system for domestic water and water supplied to ship
2. Independent fire-fighting water supply system
3. The water supply pipe network is arranged in a ring main system within the whole port and the water supply hydrants are arranged along the quay side, and
4. Emergency water storage

3.12.5 Stormwater Management

The Flood Drainage Trench functions to collect rainwater around the land-side perimeter of the Yanbye Island Port Terminal of the Project and direct it to the water treatment plant. Once rainwater meets Emission Limit Values under the National Environmental Quality (Emission) Guidelines, it will be discharged into the river. Clean, non-contact rainwater will be collected and discharged into the Thanzit River directly.

Non-contact (stormwater) water will be diverted from interacting with exposed working surfaces and site activities through the installation of temporary diversion ditches, berms, etc. diverting water away from the site. Contact water on-site (e.g., concrete wash water) will be directed to settling pond/tank, through a series of BMPs (e.g., check dams) and be treated if required (e.g., a temporary water treatment system for construction could be limited to pH, TSS, turbidity and hydrocarbons) before release to the environment. An oil-grit water separator is a low-cost practical treatment solution with discharge to the ocean, if water quality objectives are met.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

The sewage and drainage will be discharged separately. The initial rainwater will be collected by the drainage trench around the RTG maintenance plant and maintenance area and then channelled to the facilities of the port for the treatment in Yanbye Island Port Terminal of the Project.

3.12.6 Water Treatment Plant

One water treatment plant, with the design capacity of 3,000 m³/d will be located in Yanbye Island Port Terminal of the Project. The quality criterion of treated water shall comply with the Myanmar Sanitary standard for potable water (Environmental Conservation Law Chapter 7 (13-15); National Environmental Quality (Emission) Guidelines). The water treatment plant will supply water to the firefighting station, the marine drilling platform and marine supply vessels.

3.12.7 Sewage Treatment Plant

A sewage treatment plant will be constructed at the marine terminals. The capacity of the domestic and production sewage treatment station is 15t/h for Yanbye Island Port Terminal of the Project. All sewage water will be treated to discharge standards and effluent monitored before being discharged to the sea. Vessel sewage will be received on approved notice and treated by a licensed third party. The sewage in the terminal mainly comes from the domestic sewage, the oily production sewage produced by the RTG maintenance plant, the workshop and the vessels.

3.12.8 Transfer Waste Station

A waste transfer station will be constructed on Yanbye Island Port Terminal of the Project. Waste will be separated into domestic and toxic/hazardous, then stored for final disposal at an approved, off-site landfill.

(i) Domestic Garbage

The household garbage in the port will be collected and separated. One waste disposal station will be constructed in the Yanbye Island Port Terminal of the Project where garbage will be transported to the designated area identified by the government and then treated to meet the environmental protection requirements.

(ii) Toxic or Hazardous Garbage

The toxic or hazardous garbage generated in the port must not be taken into the household garbage disposal station. The management and treatment schemes should be established through consultation with the local environmental protection department and authority approval to be sought. The documents of solid waste handling and disposal should be kept updated, traceable and be monitored strictly.

3.12.9 Refueling Yard

Construction of the refueling station at the Yanbye Island Port Terminal of the Project will be part of early construction works; hydrocarbons will be captured through a secondary containment berm installed around the area and will be stored and treated. Petroleum contaminated soil will be stored and disposed of at an approved contaminated waste disposal facility.

3.12.10 Firefighting

The water to be used for fire-fighting will be supplied by the water treatment plant. The quantity and supporting facility will meet the local fire-fighting requirements.

One fire station will be located in the Yanbye Island Port Terminal of the Project. The service radius of each fire-fighting station is about 2500 meters to meet the five minutes' response time requirements (i. e. fire truck can reach the furthest point of the area of responsibility within five minutes). The entire road in the port can meet the requirements of fire engines.

3.12.11 Borrow Sources

Material borrow sources will be required to meet land reclamation needs for Project construction. Pits will be sourced for sand gravel-based materials with low fine contents (silt and clay). Sorting, sieving and grizzling may be carried out to produce the required type of sand and gravels from the borrow pit

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

materials. Occasionally, washing of soil might be required to separate fine content from the sand and gravel. The output from the borrow pits, in addition to sand and gravel, will be rejected materials that may vary from assorted boulders and cobbles to silt and clays. Generally, cobbles and boulders can be used for other applications but permanent disposal should be found for the storage of silt and clay materials. Noise and dust are generally produced from borrow pit areas. On the occasions that washing of granular materials might be necessary, a settlement pond will be required for the separation of the fine contents from the water prior to discharge of water

Neither the location nor the required borrow volume is known at this time. A material balance will be developed to inform Project engineering.

3.12.12 Ancillary facilities

Ancillary facilities the Project requires includes: office buildings, apartment buildings, dining hall, waiting room, customs inspection stand, container freight station (CFS), apron office, roads fire stations, administrative facilities, storage and laydown areas, car and truck parking, in and out gate offices and security kiosks.

The ancillary areas for production and office usage are located on each side of the gates. Depending on the functions, size and port operation requirements, a complete facility comprising the following can be built:

The auxiliary and utilities need to satisfy the requirements of the initial phase of the Project and leave open the possibility of further requirements in future phases. The main facilities are listed as follows:

- a. **Office Building:**
The office building will be a multi-functional centre where custom certificate handling, harbour management, conference, commercial affairs and etc. will be held. The facilities will include business hall, monitoring room, central control room, visitor showroom, record office, toilet, canteen and etc.
- b. **Dormitory Building**
The workers and port officers of the terminal can be housed in the dormitory building.
- c. **Gate**
The gates will include roads for inlet and outlet, security booth for security guards gate office and etc. Equipment such as electronic poles, cameras, traffic lights, fog-proof lights will be installed. Weighbridges will be installed in several lanes with an inspection bridge overhead. The gate office will have the facilities for monitoring, office space, restroom, toilet, etc.
- d. **Container Freight Station (CFS)**
CFS is the warehouse to load the cargos into containers or unload the cargo from the containers. The warehouse is equipped with electric engines, valve control room and etc. Near the warehouse, there is a control center with restroom, control office, toilet and pantry area, etc.
- e. **Custom Inspection Centre**
The custom inspection center will cater to services involving maritime affairs, production dispatching, inspection, warehouse and etc. It will be equipped with office space, power distribution room, pantry area, toilet, etc.
- f. **Warehouse**
The general cargo warehouse provides storage for transportation facilities, transportation pipes, fire-fighting equipment and office space for management staff. It has ancillary facilities like power distribution room and dispatching center, etc.
- g. **Workshop**
The maintenance workshop is the area for inspection and maintenance of the equipment. The workshop will be equipped with overhead cranes and sufficient artificial lights. Separate gates for entrance and exit will be provided.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

3.12.13 Marine supply base

Because the Bay of Bengal is rich in oil and gas resources, the marine supply base needs to have the following functions in order to provide good service and support to the offshore exploration and other offshore activities around the Kyauk Phyu region:

- ◆ Service and supply berth
- ◆ Grocery supply and refrigeration house
- ◆ Oil supply system and oil storage tank
- ◆ Water supply system and water storage tank
- ◆ Warehouse and stock yard
- ◆ Required ground for ash transportation
- ◆ Mechanism facilities and vehicles
- ◆ Equipment maintenance
- ◆ Storage and logistics, etc.

It's proposed to develop the marine supply base in the south-west corner of the terminal based on the following:

- ◆ Sufficient berth length and water depth on the west side of the terminal
- ◆ Using constructed service berth as the berth for marine supply ships
- ◆ Avoiding the use of deep-water shoreline and stack yard and eliminating the effects on the container terminal operation.

The service berth for working boats can be also used by vessels serving the marine supply base.

- ◆ Fuel oil supply facilities and a dedicated place for ash transportation will be provided within the marine supply base area.
- ◆ The storage house and material stock ground will be also provided within the general cargo yard that serves the multi- purpose berth.
- ◆ The refrigerator house will be located in the reefer container yard.
- ◆ Potable water will be supplied by the water treatment plant for the marine drilling platform and marine supply vessels.
- ◆ The use of vehicles and equipment needed for maintenance and handling within the marine supply base will be coordinated by the port.
- ◆ The storage and logistic system will also be included in the whole operating system of the port.

3.12.14 Pavement/ LANDING FACILITY / CONSTRUCTION JETTY

Based on the experiences of similar port projects, the following pavement of road and yard structure is proposed:

1. Cast-in-situ concrete pavement is recommended for the roads, parking lots, RTG maintenance area, etc. in port, to improve integrity and driving comfort.
2. Empty container yard and general cargo yard will adopt interlocking block pavement.
3. Heavy container yard and reefer container yard will adopt cast-in-situ concrete beams (for the container support foundation) and precast concrete interlocking block pavement (for the areas between container support foundations).
4. E-RTG runways will adopt cast-in-situ concrete runway beam.

The concrete pre-casting facility and construction jetty of Crude Oil Terminal will be rented for construction of Phase 1 of Yanbye Island Port Terminal of the Project. In future stages, a new pre-casting facility and construction jetty will be built.

3.13 Operational Requirements

3.13.1 Handling Technology

For the section plan of port handling technology, please refers to Attachment 1 "Drawings – DRAWING NO. ZT-0008 Section Plan".

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

i) Handling Technology on the Quay

The container quay cranes, equipped with a single trolley that can handle two 20ft containers or one 40ft / 45ft container, have been well established in the industry and there is a wealth of manufacturers' experience. (Photo Plate 3-2).

This equipment has low energy consumption, high efficiency, and is widely used in the international container terminal. Hence, this equipment is proposed to be adopted to load and unload container in this Project. Typically, the rail span of container quay crane is 30m, outreach is 65m and 70m, safely working load under the spreader is 65t and it is sufficient to accommodate a large-scale container vessel. 18 sets of container cranes for Yanbye Island Port Terminal of the Project are proposed for this Project.

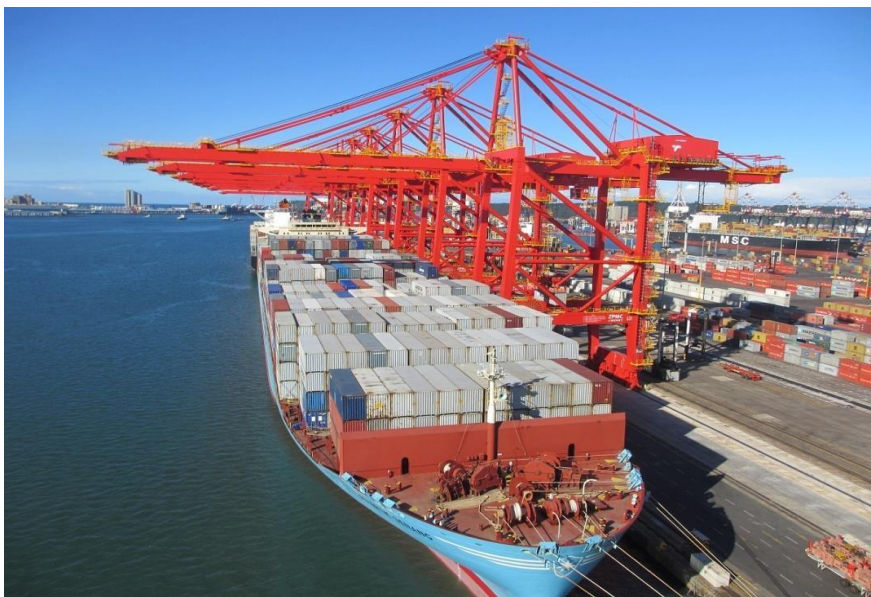


Photo plate 3-2: Container Quay Crane

The portal cranes are proposed to be adopted to load and unload bulk and general cargo ships in this Project due to their adaptability. The rail span is 10.5m, maximum radius is 40m, lifting capacity is 25t and 40t. 12 sets of portal cranes in Yanbye Island Port Terminal of the Project are proposed for this Project (Photo Plate 3-3).



Photo plate 3-3: Container Quay Crane

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

ii) Handling Technology in Stacking Yard

Subject to local energy supply, the electric powered E-RTGs, which have the advantages of being eco-friendly, energy saving and requiring less maintenance, are proposed to be adopted in loaded container yard. The lifting capacity under the spreader is 41t. The stacking height is five (5) layers (Photo Plate 3-4).

For the empty container yard, the empty container stackers are proposed to be adopted with rated capacity of eight (8)t and stacking height of eight (8) layers.



Photo plate 3-4: E-RTG

In the bulk and general cargo yard, it is proposed that mobile cranes and fork lifts are adopted for handling operations.

iii) Horizontal Transportation

The container semi-trailers are proposed to be adopted for the horizontal transportation of containers. The tractors are proposed to be adopted for the horizontal transportation of bulk and general cargo.

3.13.2 IT System

The terminal operation system (CTOS) is a key part integrating the system in the container handling chain. To meet these requirements of terminal development, the consortium intends to implement a state-of-the-art CTOS, which will use the following matured and advanced information technologies:

- Assigned multi-layer system architecture
- Load equalization
- Large-scale relational DB
- GPS
- News queue
- Wireless data terminal
- Smart truck gate
- Truck pooling

It will be capable of facilitating terminal planning, quayside and yard operations, internal and external communication links and terminal administration. The main functions of CTOS are as follows:

- Ship loading/unloading management

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- Stacking yard management
- Gate management
- CFS management
- Bill management
- Electronic Data of interchange (EDI) exchange system
- Customer management
- Office automatic (OA)

3.13.3 Infrastructures (sub-projects) Summary

Lists of infrastructure facilities proposed for Yanbye Island Port Terminal of the Project is shown in Table 3-8 as follows:

Table 3-8: Facilities of Yanbye Island Port Terminal of the Project

No	Name	Unit	Amount	
1	Designed throughput	Container	1000TEU/year	2,000
		General and bulk cargo	1000T/year	2,680
2	Designed capacity of terminal	Container	1000TEU/year	2,100
		General and bulk cargo	1000T/year	2,600
3	Berth length	Multi-purpose berth	m	400
		Container berth	m	1,200
4	Number of berth	Multi-purpose berth	Nos.	1
		Container berth	Nos.	3
5	Quay apron area	ha	12	
	Heavy container yard	ha	37.8	
	Reefer container yard	ha	1.2	
	Empty container yard	ha	8.6	
	CFS and custom inspection area	ha	6.1	
	General cargo yard	ha	5.1	
	Auxiliary area of production	ha	3.0	
	Auxiliary area of Life & work	ha	2.1	
	Road	ha	17.5	
	Green area	ha	2.6	
	Total and area	ha	96	
6	Power load	KVA	34,700	
7	Water consumption	m3/d	3,000	
8	Total number of staffs	Person	1,083	

3.14 Workforce and Accommodation

The entire KPSEZ DSP Project is expected to provide approximately 1,900 direct employment opportunities at peak construction phase, and approximately 2,900 direct employment opportunities by the end of the Concession operating period. For Yanbye Island Deep Sea Port Project, 1,083 direct employment opportunities at peak construction phase, and approximately 1,400 direct employment opportunities at peak operation phase are estimated. Foreign workers will be housed on-site in the residential apartment buildings while local workers may live off-site in local communities.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

3.15 Construction Materials and Resources

The Project is in the early start-up phase (commissioning). Final project engineering and design report is in its infancy stage. Therefore, quantity surveying for materials and bills of quantity for resources utilization/estimate in spreadsheets/ reports for construction and operation is unknown at this stage.

Full material balance and bills of quantity for each of the individual activities and works of the Project and sub-projects of Yanbye Island Port Terminal of the Project, will be developed by Project Proponent from project engineering, procurement units, contractors and sub-contracts. This will be fully reported during the periodic environmental monitoring to ECD and concerned authorities.

3.16 Project Phases

In accordance with the Concession Agreement, the four phases of KPSEZ DSP Project are;

1. Commissioning and Startup Phase
2. Construction Phase
3. Operation Phase, and
4. Transfer Phase.

The Project Proponent is required to undertake the KPSEZ DSP EIA covering the following phases:

1. Pre-Construction Phase
2. Construction Phase
3. Operation Phase, And
4. Transfer Phase.

3.16.1 Commissioning and Startup Phase

Commissioning and start-up activities will be undertaken at various stages following completion of the Marine Port Terminals. Commissioning ensures that infrastructure, equipment and supporting systems are functioning efficiently and safely, meeting the requirements of a green field port.

The minimum stages will be dry and wet commissioning, and to receive trial vessels to test the complete systems. All utilities and connecting services must be live and functioning in individual domains prior to being combined for the staged commissioning. A full commissioning specification will be developed in the engineering stages of the Project.

3.16.2 Construction Phase Activities

Construction activities will include site preparation, civil and earthworks, and the construction and installation of Project components. Operations and maintenance of treatment facilities and site infrastructure will also be required during this phase. Construction of the Yanbye Island Port Terminal of the Project is sequenced as the final phase, phase 4 of KPSEZ DSP, and includes the construction of a superstructure and supporting auxiliary infrastructure:

- Marine Supply Base Facilities
- A Sewage Treatment Plant
- A Water Treatment Plant
- A Water Supply Station
- A Fire Fighting Station
- A Garbage Collection Station
- Power Supply
- Telecommunication Facilities
- A Gas Station
- Workforce accommodations and other supporting infrastructure.

The Project implementation and phasing orders are further elaborated below.

Phase 4

For Phase 4, berth No.7 to berth No.10 will be constructed. The total design annual capacity of the Project (4 Phases) is 6.97 million TEU of container and 7.8 million tons of bulk and general cargo. With

CHAPTER 3: Project Description and Alternatives

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

the increase of container throughput, the three (3) multi-purpose berths at Made and Yanbye Island Port Terminal of the Project will be transformed to container berths in sequence. As a result, the design annual container capacity of Made and Yanbye Island Port Terminal of the Project will reach the targeted capacity of 7.00 million TEU. Figures 3-17 and 3-18 show layouts of Phases 4 A and 4 B.

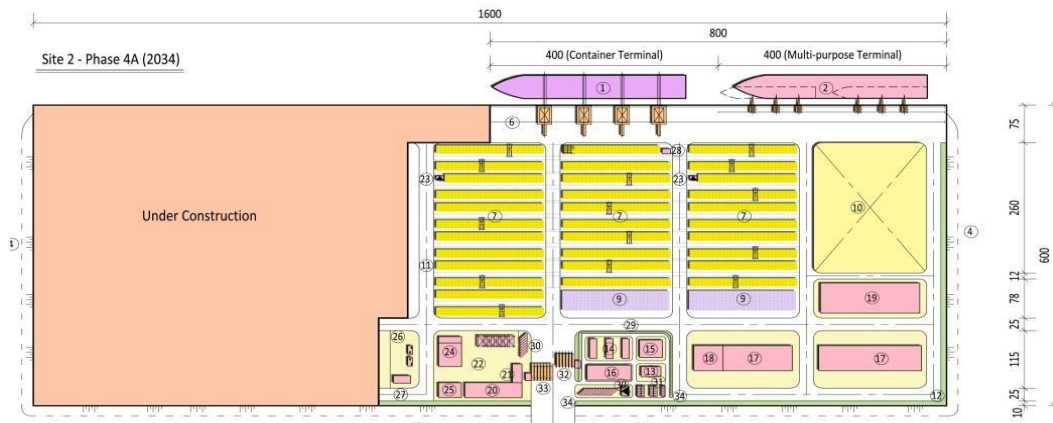


Figure 3-17: Layout of Phase 4A (Enlarged Figure in Appendix 5)



Figure 3-18: Layout of Phase 4B (Enlarged Figure in Appendix 6)

The construction and reclamation of berths No. 2 and No 3 and the installation of their supporting infrastructure will occur during Phase 4B. General types of construction activities at the terminal sites include:

- Staging of materials
- Site establishment and pre-construction preparation activities such as geotechnical assessment, ground improvement, excavation and fill placement, surveying, drilling and mapping soil horizons, site grading, dredging and blasting, clearing and grubbing, and salvage and storage of dredged material
- Commencement of civil work and installation of foundations, underground services, utilities and buildings and offloading facility to inter-connect with the access road and tie-in to the state grid line and local water supplies
- Quay foundation gravity structure (e.g., caisson) through prefabricated modules that are placed in location
- Construction of temporary jetties, most likely to be rubble mound and mass filled in water shallower than one (1)m and then transitioning into a piled jetty with precast planks, in combination with dredging to receive the construction barges to deliver initial plant and materials
- Construction of on-site roads
- Installation of perimeter fencing and onshore access/security gates
- Construction of the building for the offloading storage facility

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

- Dredging of overburden and blasting of rock materials to accommodate construction of the marine structures
- Construction of berths and marine service berth
- Unloading of materials and equipment at Terminal Terminals from trucks and barges
- Construction of the water supply system, including intake, treatment, and distribution
- Installation of stormwater management, erosion prevention, and sediment control measures
- Construction of produce precast concrete materials in an offsite casting yard during Phase 1
- Construction of customs areas, storage and administrative facilities and warehouses
- Removal of construction facilities and infrastructure where not required in the future
- Site cleanup and landscaping of land-based facilities and interim reclamation of construction

3.16.3 Operations Phase

The operation phase of the Terminal Ports is expected to last 75 years with the following key activities occurring:

- Worker accommodation
- Storage and offloading of bulk and general cargo for export, transitioning into container cargo in later stages of operations
- Ongoing maintenance of the terminal facilities
- Maintenance dredging (as needed)
- Wastewater, stormwater, and process water treatment and disposal in accordance with applicable legislation
- Operation and maintenance of utilities including power, water and sewage treatment facilities
- Waste management disposal and recycling in accordance with applicable legislation, including for contaminated soil.

3.16.4 Transfer Phase

The Project will be transferred to the Myanmar government following the end of the concession period.

3.17 Project Schedule

The Project is a Public Private Partnership (PPP) Project under design, build, finance, operation, maintenance and transfer (DBFOT) system. According to the Special Economic Zone Law (2014), the land lease term is permitted a 50-year period and extendable up to additional 25 years.

The DSP Project development will cover six (6) main Project activities, namely, Start Up Works, Feasibility Study, Design Development, Construction, Operation and Transfer. The detailed work for each activity is described in table 3-9.

Table 3-9: Detailed Work for Project Activities

Start Up Works	Feasibility	Design	Construction	Operation	Transfer
<ul style="list-style-type: none"> • Preliminary Geology & Topography Survey (PGTS) • Environmental and Social Assessment (ESIA) 	<ul style="list-style-type: none"> • Concept Plan Optimization • Feasibility Study 	<ul style="list-style-type: none"> • Preliminary Design • Detailed Design 	Procurement <ul style="list-style-type: none"> • Contractors, materials, equipment, etc. Construction and Control <ul style="list-style-type: none"> • QA/QC Control • HSE Management • Progress Control • Cost Control • Information Management Completion & Commissioning	<ul style="list-style-type: none"> • Engage with experience and professional operation team • Development of Operation Plan • Operation Implementation 	<ul style="list-style-type: none"> • Upon the end of concession period, the DSP Project facilities will be transferred to Myanmar

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Yanbye Island Port Terminal of the Project will be developed if the Made Island Port Terminal of the Project is successfully developed. Detailed information about Project phases and schedule is not available at this time.

3.17.1 Maintenance

One maintenance workshop with an open area will be constructed on both the east and west side of Yanbye Island to provide equipment maintenance. In addition, several maintenance sites for regular services and repairs will be located near the boundary of the terminal.

3.18 Detail Information of the Project Proponent’s Contact Person

Project Proponent	Kyaukphyu Special Economic Zone Deep Seaport Co Ltd (Its major shareholder, CITIC Consortium Myanmar Port Investment Limited, has been authorized to conduct ESIA work)
Project Proponent’s address for correspondence	No.(B-02-01), Golden City Business Center, Yankin Road, Yankin Township, Yangon, Myanmar.
Contacts of Project Proponent	1. Mr. Zhu Xuyang (For English), Phone No.: +95-9-259927723 Email: zhuxy20@citic.com 2. U Yan Aung (For Burmese) Phone No: +95-9-699286688 Email: fuqh@citic.com
Fax	+95-1-9376067
Website	http://www.citicmyanmar.com

3.19 Project Cost

Based on the information in the RFP of KPSEZ DSP Development, the Capital Expenditure (CAPEX) division estimates the entire Project cost, including Made Island Port Terminal, Yanbye Island Port Terminal and the 15 Km access road, is approximately \$7.2B and cost estimation of the first phase of the Project is approximately \$1.3B.

3.20 Project Alternatives

Consideration of all possible alternatives, in relation to the aspects and dimensions of the Project and its interactions are fundamental requirements when planning any project. In this context, applicable and possible alternatives are discussed to avoid or reduce adverse environmental and social impacts and maximize or enhance project benefits. Alternatives that have been considered for the Project include:

1. Location Alternative
2. Orientation Alternative
3. Design Alternative
4. No Project Alternative

3.20.1 Location Alternative

Under the KP SEZ Master Plan, two locations have been identified and earmarked for the terminal development in the RFP of KPSEZ DSP Development in 2014. The demarcation of Yanbye Island Port Terminal of the Project was designated by KPSEZ-MC.

The proposed location is advantageous due to its ease of access (below figure). Yanbye Island’s boundary offers several other locations using similar dimensions and size. From an environmental perspective, the local ecosystem will be transformed, some of which will be irreversible. Potentially, this could produce environmental problems and disputes with the community. The integrity of the engineering of the Project is important considerations for the sustainability and economic viability of the Project. Figures 3-19 aerial photo of proposed project location on Yanbye Island (local and district scales).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)



Figure 3-19: Aerial photo of Proposed Project Location on Yanbye Island (Local Scale)

Taking ease of location selection into elevated district scale, the constraint for location, land acquisition for Project is further diminished since proposed location requires multiples land and territory in combination for full Yanbye Island Port Terminal of the Project for designed dimension and capacity.

The west of coast of Yanbye north of Kyauk Phyu district is exposed to Bay of Bengal which proffers unparalleled advantage that is having lesser environmental burdens and minimal socioeconomic conflicts with local communities but the development in the bayfront consists of hefty economic costs for breakwaters and revetments; and worst, it presents unforeseeable threats to terminal operational under weather anomalies which persist through out Project lifecycle. In contrast, having unrestrained design and no Project dimension constraint are unique opportunities and offers to link National Highway 2 (NH2) from established internal community access roads and roadways in those areas located on the western shoreline of Yanbye (Yanbye) island. The proposed location for Yanbye Island Port Terminal of the Project consists of pros and cons.

Weighing to lesser costs posed by certain natural disaster risks and channel basin morphological changes annually, proposed location could be considered ideal for the Project development. However, multidisciplinary feasibility studies and assessments are strongly recommended prior to the Project being located at the proposed location; and start-up and commissioning works are completed along with SWOT analysis comprehensively performed to seek compromises on underlying and predictable environmental and socioeconomic burdens.

3.20.2 Orientation Alternative

Assuming that the proposed Project location and Project size dimensions remained unchanged, the Project orientation becomes one important aspect to maximize project benefits and minimize environmental costs.

The orientation in this context indicates the layout arrangement of Project on specific location, 19°22'49.99" N and 93°37'26.17" E. The 96 ha. Extent terminal footprint is rectangular shape with E – W directional Project orientation corresponding to the Thanzit river, the major coastal navigation route of Toungup – Sittwe coastal waterway (Figure 3-20).

It is assumed that the justification for terminal footprint on a complex territorial divide is to eliminate navigation blockades to the route of Thanzit river and local fishing grounds, by the presence of the Project.

With the Yanbye Island Port Terminal of the Project's dimensions and site of Yanbye Island smaller than those of Made Island Port Terminal of the Project, it has an intrinsic advantage over Made Island Port Terminal of the Project. Any directional and bearing adjustments made to the current orientation

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

could impact the new navigational area for shipping maneuvering and cause additional territorial constraints that cannot be further compromised without impacting optimal multipurpose terminal operation. As a result, the Project's dimensions and size may have to be downsized to account for any orientational and positional adjustments made.

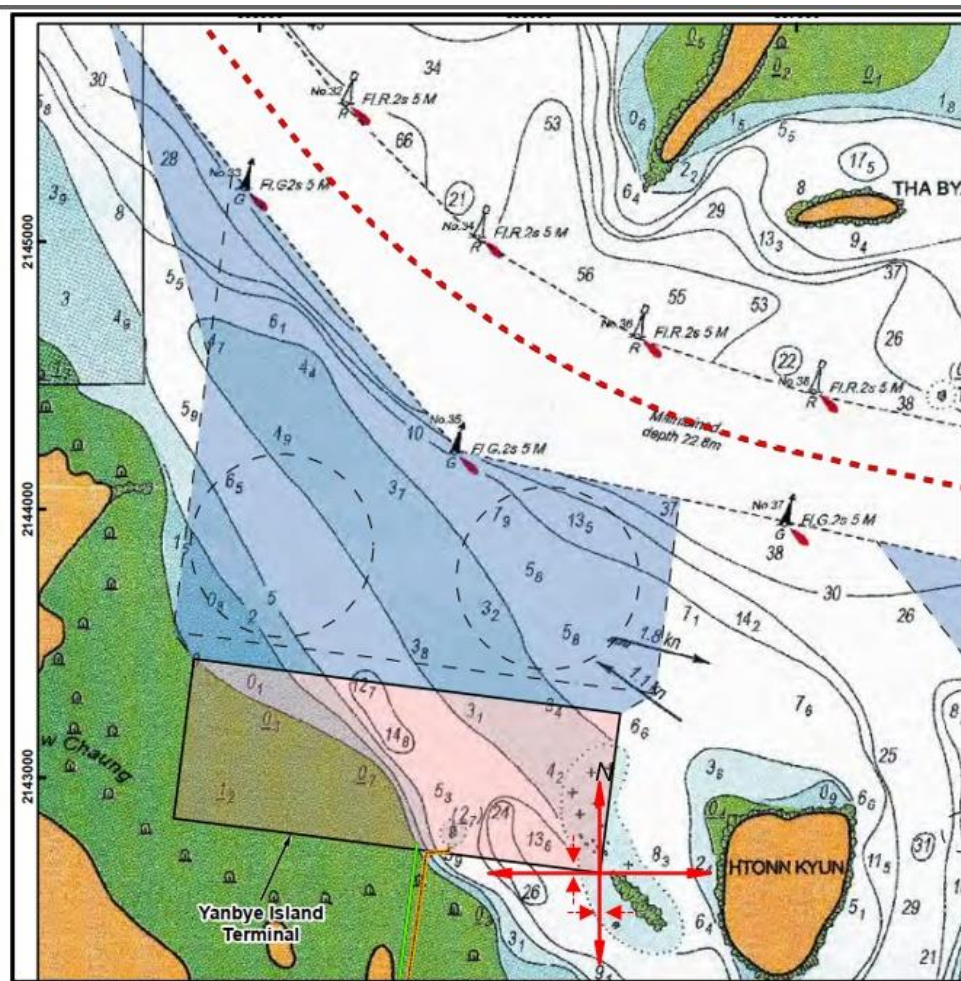


Figure 3-20: Proposed Project Orientation (Modified from CITIC Source)

3.20.3 Design Alternative

According to the concession agreement and Project proposal report, the Yanbye Island Port Terminal of the Project is designed to meet quote: **“the requirements of a multipurpose terminal and a green field port”**. According to UNCTAD²³, it defines a multi-purpose terminal as a “complex of infrastructure, equipment and services which offers a combined and flexible response to the servicing demand of certain types of vessels and cargo”.

With the statement described in the Project description in includes all activities and works of UNCTAD’s definition, proposed Yanbye Island Port Terminal of the Project satisfies all the criteria of a Generation 5 multi-purpose terminal which Project Proponent aims to develop through international guidance and best practice outlined in the Project proposal report and concession agreement. Thus, under the scop of multipurpose terminal and design description sense, there is no comparable port and terminal generation alternative as the Project Proponent choices latest generation ports and terminals configuration. The evolution path of 5th generation port is referenced and stated in the Figure 3-21.

²³ <https://unctad.org/>

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

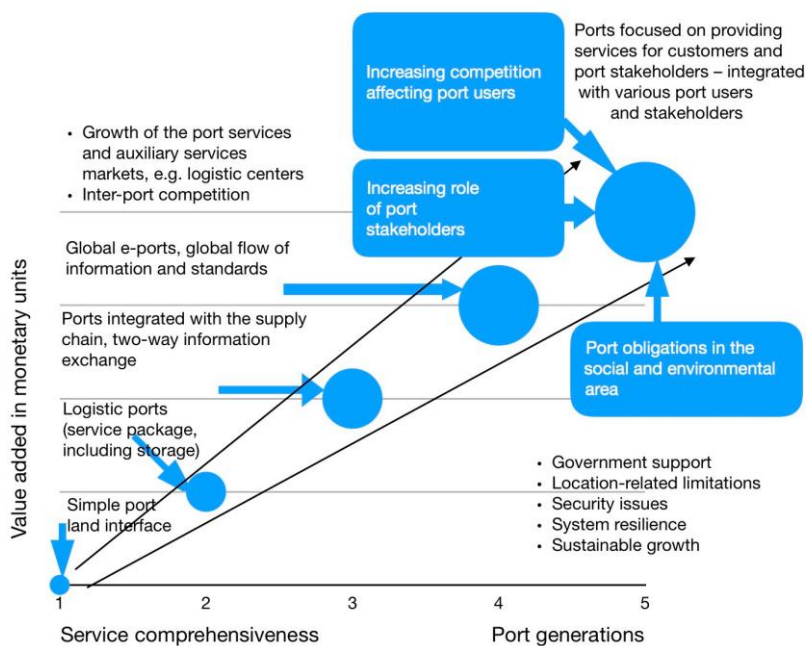


Figure 3-21: Evolution path of generation five ports (source: P. Lee and J. Lam²⁴)

There are several alternative available and applicable alternatives with respect to the subject of green-field port. The green concept relies on three components: energy conservation, environmental, protection and environmental care (ESPO²⁵). With no material and mass balance have not been developed at startup or commissioning phases, the green concept under design alternative could is not known at this scoping stage; but the Project Proponent deliberates adopting green concepts by informing project engineering while developing design.

According to the Project proposal, a 3.5 (ha) wide green area is being integrated into the terminal’s footprint, which is equivalent to 2.33% of the terminal’s footprint and 1.17% of the total Project footprint. This could be further increased through adopting innovative technology and advanced design which partially covers the 5th generation port.

In addition, the ongoing start-up and commissioning activities being undertaken by Project Proponent through the facilitation of Project Management Committee make certain the green concepts and environmental conservation efforts are integrated and supportive to design alternative in all regard. In addition, the ongoing start-up and commissioning activities being undertaken by the Project Proponent through the facilitation of the Project management committee, makes certain that green concepts and environmental conservation efforts will be integrated and supportive of design alternatives.

In compliance with Article 95 of the Myanmar EIA Procedure, the Project Proponent will notify ECD (MONREC) in case of major changes in size, scope, location, layout, technology, risk associated with foreseeable adverse Impacts, production methods or pollution prevention/ mitigation measures of the Project, or an expansion or second phase development is proposed.

3.2.0.4 No Project Action Alternative

The previous three alternatives discussed earlier are contingent to “Project action”, which can comprise both positive and negative impacts with environmental, social, and economic consequences. In contrast, with the no Project action alternative, the following Project driven impacts and benefits will be prevented:

²⁴ P. Lee, J. Lam, Container Port Competition and Competitiveness Analysis: Asian Major Ports, (in:) C. Lee oraz Q. Meng, Handbook of Ocean Container Transport Logistics – Making Global Supply Chain Effective, International Series in Operations Research & Management Science, Springer, New York.

²⁵ <https://www.espo.be/>

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Environmental Related-

1. Neither short-term or long-term environmental changes will occur if the Project does not proceed, thereby excluding Project associated direct, indirect, residual, cumulative, and transboundary impacts.

Social Related-

1. Disturbance in livelihood of the community near the Project area during construction (e.g., temporary/permanent loss of land, interest conflicts, resource sharing, inconvenience of movements, no longer commuting time, etc.) Disturbance of livelihoods of nearby communities during construction (e.g., temporary/ permanent loss of land, interest conflicts, resource sharing, inconvenience of movements, no longer commuting time, etc.)
2. Fishing activities and coastal water transport (freight, regular passenger boat as well as maritime etc.) would not be disturbed and would maintain the current level of traffic volume in short term.
3. Direct and indirect vocation and employment opportunities linked to Project development.

Economic Related

1. Disturbance of livelihoods of nearby communities during construction (e.g., temporary /permanent loss of land or loss of jobs).
2. Economic development or gross domestic production from local to national level.

The “No Project Option” was also considered to avoid negative impacts to environmental and social aspects. However, by leaving the proposed area without any development will result in the local community and the government (State and Union) losing the opportunities to benefit from the development Project.

While ports are vital for economic development, construction, operation, the associated maritime traffic, handling of goods, and road transport take a heavy toll on the environment through air and water pollution and on the livelihoods and other social aspects of local people. Adverse effects of port development for EIA have been compiled by several organizations including the World Bank, the Asian Development Bank and the International Association of Ports and Harbours.

The ESIA process shall determine these significant impacts of the Project. To ensure the Project benefits to far out-weigh the negative impacts and to enable to avoid the “No Project Option”, it is crucial to commit and implement all proposed mitigation measures which shall be addressed in ESIA Report.

Chapter 4: Description of the Surrounding Environment

Chapter 4. Description of the Surrounding Environment

4.1 Summary

The location where proposed Project set to be developed involves complex territorial use of both land and water bodies. Therefore, it is important to investigate and consider all valid Valued Environmental Components (VECs) and Project Affected Persons (PAPs) along with any conceivable Project activities and works envisaged across Project Lifecycle and phases. Therefore, setting Project location for EIA study limits being one of the important measures prior all potential impacts will be performed for comprehensively assessment. Studied limits for all major compartments of the environment are identified based on-site visits, preliminary baseline data collection, public consultation, subject matter workshops undertaken during August ~ November 2022. Moreover, months long literature review was undertaken to examine underlying environmental and social issues that exists inside study area which is Kyauk Phyu Township and beyond. Through peer reviews and iterative revisions findings and observation for the description for surrounding environment is being reported for all wide-ranging subjects of allied to ESIA to identified potential impacts associated to Project development in various phases. Preliminary baseline data collection had been collected in some components of ESIA; these activities will be accomplished in full compliance to the feedback to this scoping report and scoping opinions which is to be provided by Environmental Conservation Department. There are number of risks and disasters related to climate change and seasonal weather anomalies are identified which need to be anticipated even in the engineering stage of the Project by the Project Proponent for future provisions and Project sustainability. Otherwise, the Project development could become the centre of grievances and socio-economic disputes that are obvious concerns and interests of Made and Kyauk Phyu residents.

4.2 Introduction

This section of the scoping report presents the prevailing conditions of environmental and socioeconomic settings in the proximity of the Project site.

The Project encompasses many earth and environmental sciences and the study limits for the ESIA depends upon the synthesis of the complexity of the environmental and social aspects under investigation. This investigation must consider all valid Value Environmental Components (VECs) and Project Affected Persons (PAPs) along with Project activities and works.

Therefore, information described in this chapter is the combination of

- Multidisciplinary baseline data collection results of scoping surveys, including preliminary environmental data, survey data, workshop data and literature reviews
- Data from the Project Proposal Report prepared by HATCH
- Primary and secondary data relating to the Project surrounds and regional context

The proposed Yanbye Island Port Terminal of the Project is to be constructed on Yanbye Island (North), making the area the focal point for environmental and socioeconomic study. The study scope definition will then be further be extended and study limits established.

4.3 Setting Project Location and EIA Study Limits

The Yanbye Island Port Terminal of the Project comprises a combination of coastal territorial of Yanbye Island (North) which is in-between approach channel of Thansit river and the island. This accommodates the main terminal and the new navigational area.

Under the KPSEZ DSP Project scheme, it comprises the Made Island port located at 19° 22' 40.695" N and 93° 39' 24.646" E, Yanbye Island port located at 19° 22' 49.623" N and 93° 37' 25.912" E, and a transport and connection infrastructure (one bridge and 15 km road) between the DSP and an Industrial Park (IP) at the KPSEZ (Figure 4-1).

This is the focal Project location, its impact area or area of influence as the Project extends from Yanbye Island (north) and the maritime territorial adjacent to incorporate a total Project footprint of 339 ha. The project location area in region is also described in Figure 4-2.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

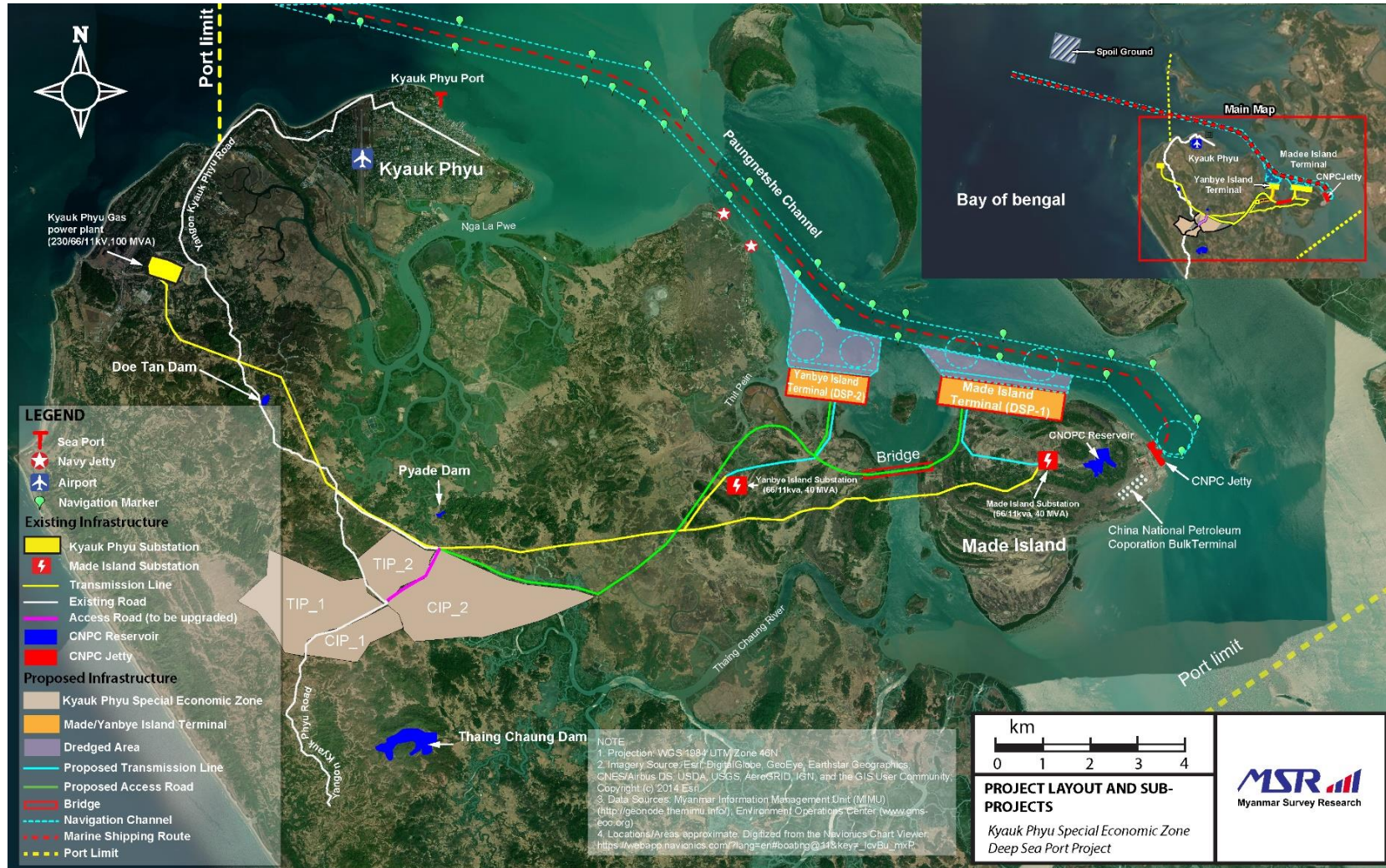
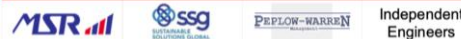


Figure 4-1: Project location and layout

MSR CONSORTIUM



CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

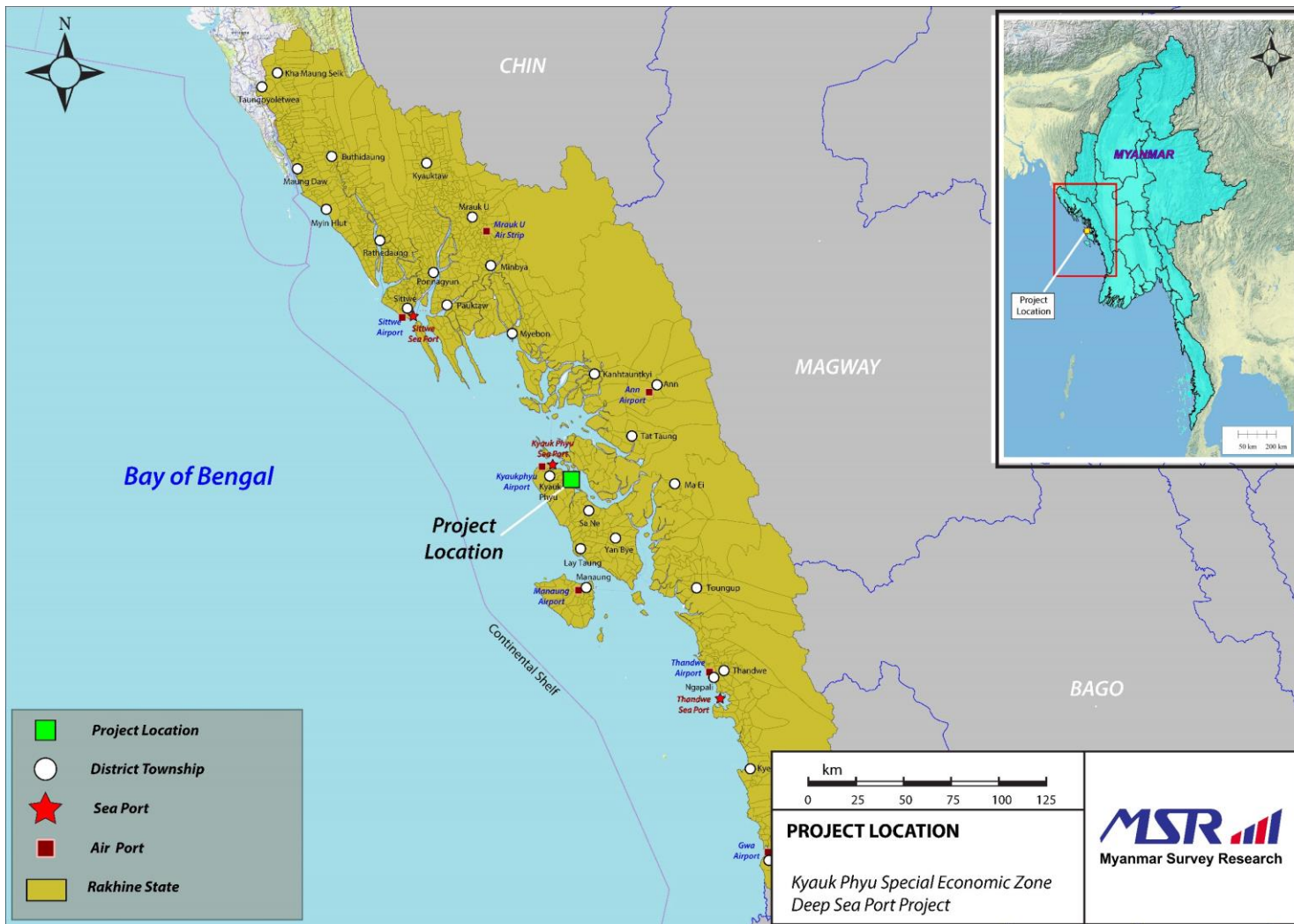


Figure 4-2: Project Location Area (Enlarged Figure in Appendix 7)

MSR CONSORTIUM



Independent
 Engineers

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

The setting EIA (scoping) study limit is based on surveys (both qualitative and quantitative), field trips and preliminary environmental baseline data collection. This was undertaken to address the major branches of EIA disciplines (i.e., Physical, Biological and Social environment). In addition, an in-depth review of the Project design proposal reports, available literature and accessible scientific reports was undertaken. The impact assessment will be undertaken in the next step by emphasizing EIA (scoping) study limits which are in full compliance with ECD's scoping opinions, procedures and guidelines. The study limits of each individual component of EIA subjects and justifications are presented below.

4.3.1 Physical Environment

The study limit for Yanbye Island Port Terminal of the Project, the scope of EIA (scoping) for which Area of Influence (Aol) for primary and secondary study limit is considered to be 1.5 Km and three (3) Km radial distance respectively, to that of proposed Project centre.

The study limit was determined by the Project size, major Project activities, and works involved in all phases and the stages of the Project schedule and the EIA cycle of the Project. The rationale for this being a two (2) km radius area extent as the primary Aol for the study setting limit for physical environment. This is strongly influenced by the nature of the chemicals being exposed to the receiving environmental compartments from pollution sources of intermittent occurrence inside the Project footprint. They can generally disperse up to two (2) Km radially with their initial properties and characteristics remaining unchanged. Within this primary Aol boundary, the concentration of pollutants decreases as an increase in distance travelled occurs due to remedial chain reactions exhibited to its tolerance limit

There are certain limits for the dispersion and fate of chemicals from effluent/discharge/emission in (i) stimulatory, (ii) inhibition, and (iii) toxic thresholds. The permissible limit of emission/effluent/discharge is set between the end limit of the stimulatory threshold by concerned authorities and scientists.

When identifying Project driven environmental impacts, the dispersion and fate of the emission/ effluent/ discharge is one of the determining factors of impact trajectory. Eventually, they are subjected to further transformation into other matters and compounds from their precursors under the influences of physiochemical processes and variable environmental factors.

This mechanism happens instantaneously inside primary Aol in conjunction with redox reactions exerted by means of remediation potentials of the host ecosystem. With the exception of certain persistent chemicals or contaminants class, this paradigm applies to most of the toxic/harmful pollutants and chemicals as they disperse and transport through gas and liquid. Thus, baseline environmental quality and data collections are undertaken within the envelope of primary Aol; and an additional one (1) Km radial extension from the Project centre to that of the primary Aol margin is widely applied as the provisional spatial reserve or the secondary Aol. Comparative assessment is extensively performed among two datasets obtained from the results of initial environmental baseline surveys versus those of periodical monitoring results in investigation cycle. The following figures: location of baseline air and noise data collection inside Project Aol (Figure 4-3), location of baseline air and noise data collection for elevated impact assessment (Figure 4-4), location of baseline water quality data collection inside Project Aol and its proximity (Figure 4-5), location of baseline water quality data collection for elevated impacts assessment (Figure 4-6), location of baseline soil quality data collection inside Project Aol (Figure 4-7), location of baseline quality data collection for elevated impacts assessment (Figure 4-8), and location of baseline sediment quality data collection inside Project footprint (Figure 4-9) are described below.

Residual impacts are likely to be present even if all potential impacts identified are mitigated and managed through a comprehensive management plan and sub-plans. Thus, it requires study limit be further extended in correlation with the other projects of KPSEZ DSP (i.e., Yanbye and Access Road) development. Subsequent, study limit expansion is referred to in the listed components of KPSEZ DSPs. Those impacts of elevated types (i.e., residual, cumulative, and transboundary) need special consideration and influencing factors inclusion. They are to be evaluated inferentially; and assessment will be performed through all of the study limits or Aol of projects nearby combined. The study limits for baseline environmental data collection and distribution of sampling locations for environmental quality are illustrated in terms of Project specific and either cumulative or transboundary impact potential according to the order of major branches of the physical environment below:

- (i) Ambient Air
- (ii) Ambient Noise: noise or sound

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- (iii) Water: Surface and sub-surface.
 - (iv) Soil
 - (v) Sediment, and
 - (vi) Resource Management.
- (i) Ambient Air and (ii) Noise

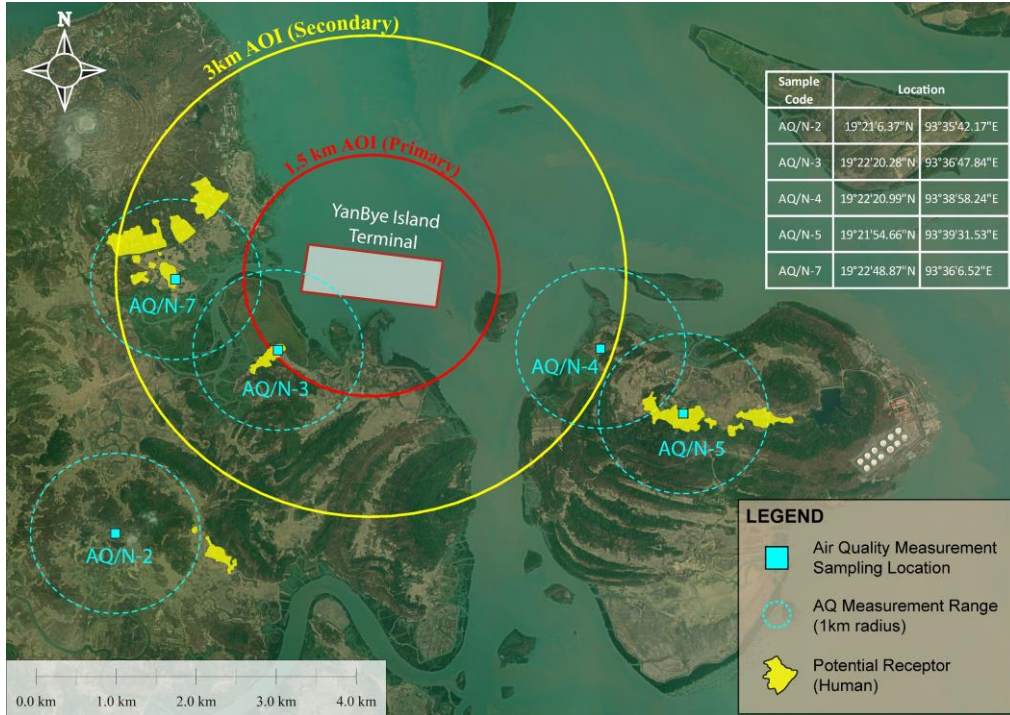


Figure 4-3: Location of Baseline air and noise data collection inside Project AOI

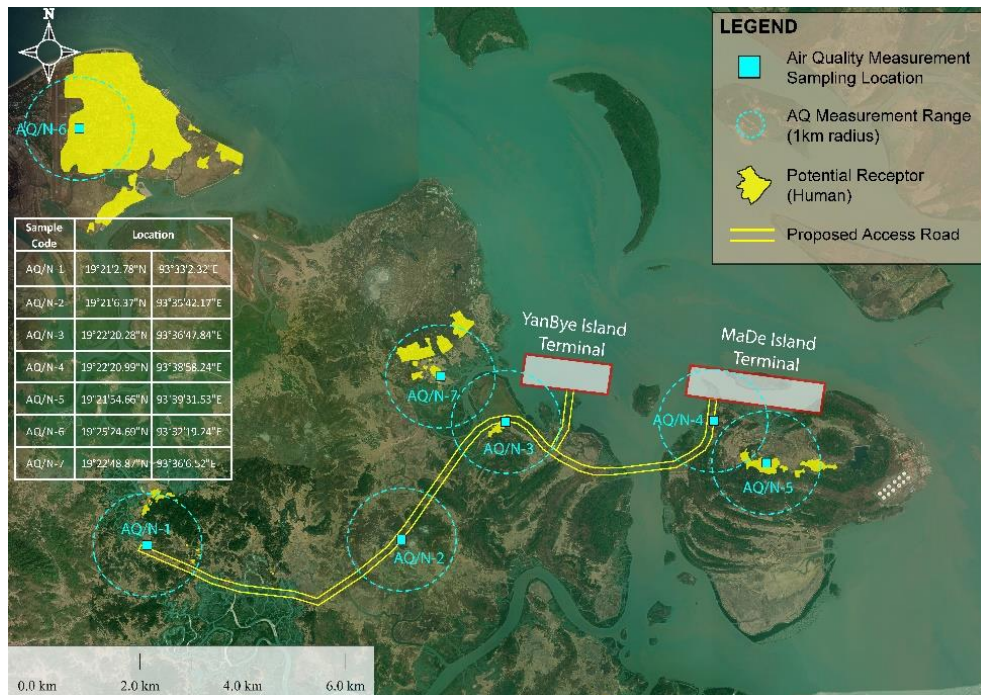


Figure 4-4: Location of Baseline air and noise data collection for elevated impact assessment

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

(iii) Water: Surface and sub-surface

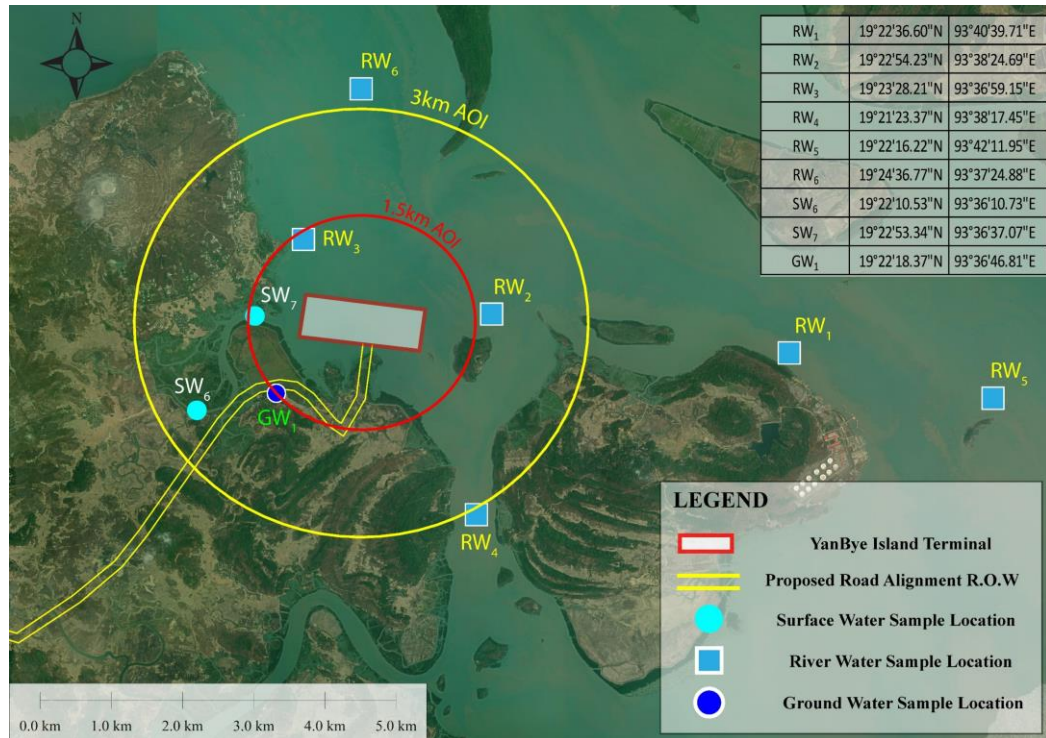


Figure 4-5: Location of Baseline water quality data collection inside Project AOI and its proximity



Figure 4-6: Location of Baseline water quality data collection for elevated impacts assessment

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

(iv) Soil

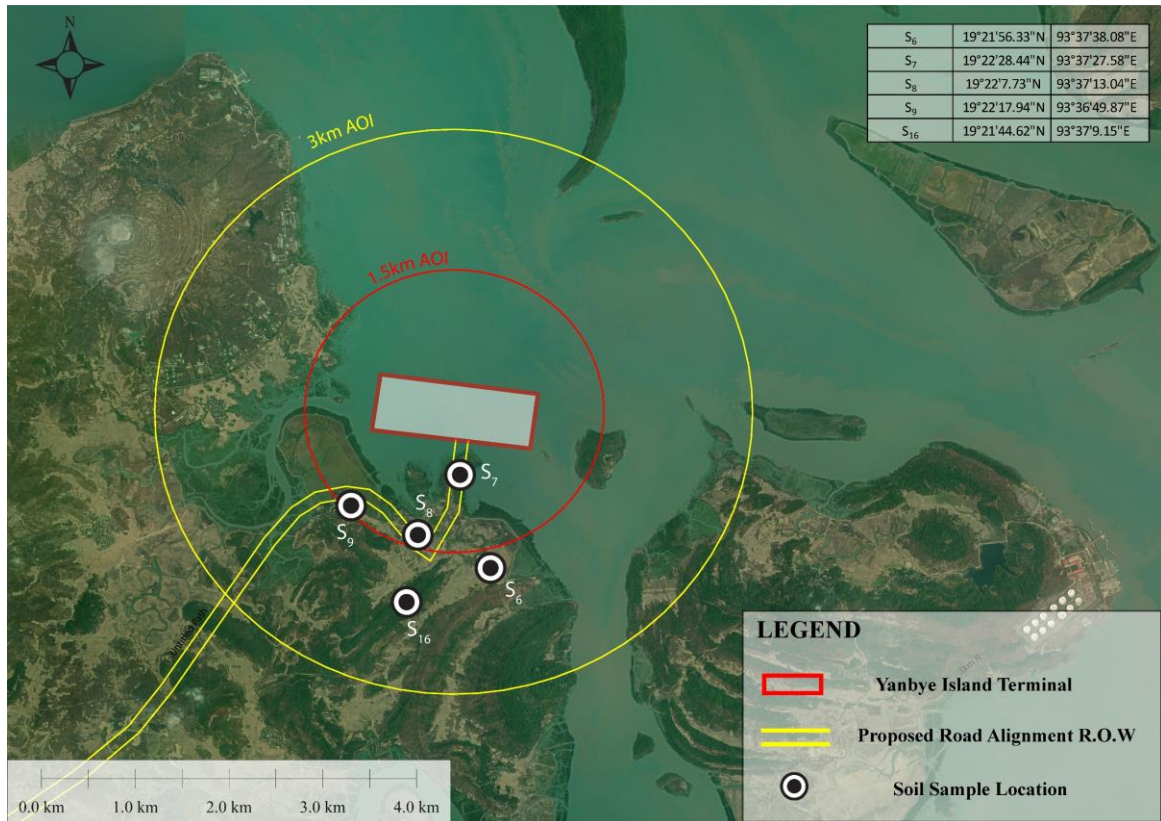


Figure 4-7: Location of Baseline soil quality data collection inside Project AOI



Figure 4-8: Location of Baseline quality data collection for elevated impacts assessment

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

(v) Sediment

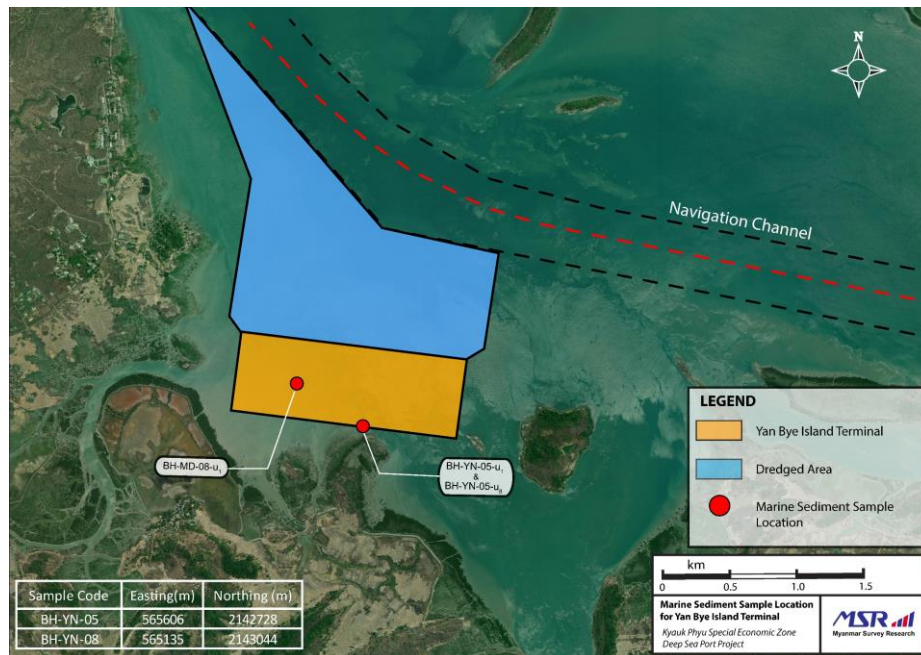


Figure 4-9: Location of Baseline sediment quality data collection inside Project footprint

(vi) Resource Management

Setting study limit for resource management are quantitative and qualitative assessments such as materials inventories, bill of quantities, and mass balances of resources procured, consumed and discarded in each stage of the EIA. As a consequence, the study limit for this subject cannot be expressed spatially. The study limit of resource management of proposed Project is associated with the direct application and consumption of resources for works and activities when developing every phase of the Project.

The detailed methodology and workplans for baseline data collection criteria and sampling location selection of each individual component of the physical environment of the EIA are further discussed in the Terms of Reference (TOR) section of this report.

4.3.2 Biological Environment

The proposed Project will be developed in the intertidal zone of the Rakhine coast. Marine and terrestrial biodiversity are the two major areas that need study limits set for the scoping exercise and the EIA for Made Island Port Terminal of the Project.

There are a number of influencing factors and linkages between the two ecosystem types, such as the diversity and occurrence of flora, fauna, and organisms, with the brackish shallow waters and coastal forest, which is a haven for avifauna and amphibian, which are associated with both marine and terrestrial biodiversity.

Despite this, the same criteria and rationale are not applicable when setting the study limit for both marine and terrestrial biodiversity.

Impact identification for the biological environment is contingent on direct and indirect Project driven works, activities, and other anthropogenic sources nearby. Therefore, adverse and negative impacts will be identified by means of the mid-points environmental indicators shared among physical and socio-economic component of ESIA.

Marine Biodiversity

The boundary/scope of marine biodiversity for Made Island Port Terminal of the Project EIA of KPSEZ DSP is established based on the experts' judgment, and primary and secondary data from projects in the vicinity. Phytoplankton and zooplankton communities could be affected by sedimentation by Project

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

activities. However, an assessment of the outer area (other) of direct and indirect impact zones must be carried out for monitoring purposes. This information will provide a checklist/ baseline for initial/without Project activity. For example, ballast water exchange could introduce alien/invasive species which can cause red tides (Harmful Algal Bloom) and harm to local or native species.

Although the occurrence of coral reefs varies for each port (i.e., Made and Yanbye Terminal), these communities could be impacted by traffic activity (close to the navigation channel). Seagrass, seaweed, mangrove, benthos, mollusks, gastropod, fish, sharks and a rays survey will be conducted in both the direct and indirect impact zones of Made Island and Yanbye Terminal. However, an assessment of plankton, and benthos biodiversity will not be carried out in Access Road and Bridge development Project under KPSEZ DSP scheme. Study limit for marine biodiversity is illustrated in the Figure 4-10.

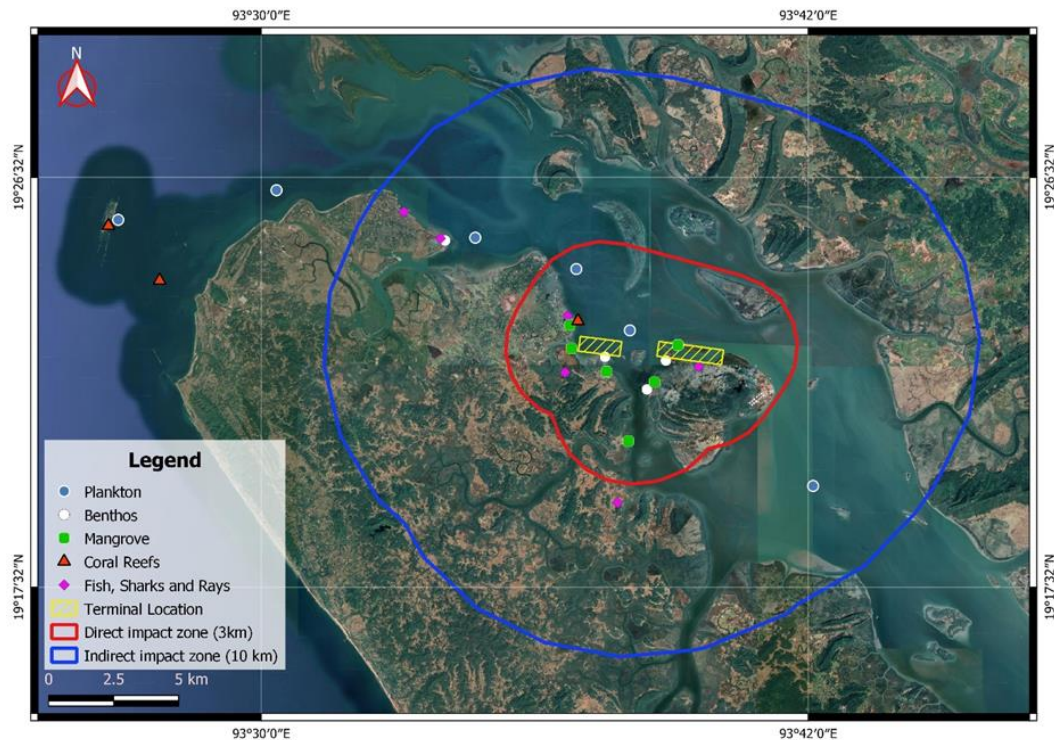


Figure 4-10: Scope/boundary of marine biodiversity survey both Made and Yanbye Terminals of KPSEZ DSP

Note: Direct impact zone= three (3) km radius; Indirect impact zone = ten (10) km radius.

Terrestrial Biodiversity

The scope for terrestrial biodiversity survey follows scientific study methods for collecting data and sampling specimens in designated study areas. Survey range is defined as: (i) direct (three (3) km radius), and (ii) indirect impact (eight (8) km radius) zones where existing biodiversity are likely to be impacted in both water and on land by Project activities and actions.

In addition, an approximately 26.6 km survey range will be extended at the upstream and downstream area of the Project along Thanzit River which is defined as marine mammals, marine turtle and coastal birds' survey area. All survey ranges will cover the different habitats of survey area. Study limit for terrestrial biodiversity is illustrated in the Figure 4-11.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

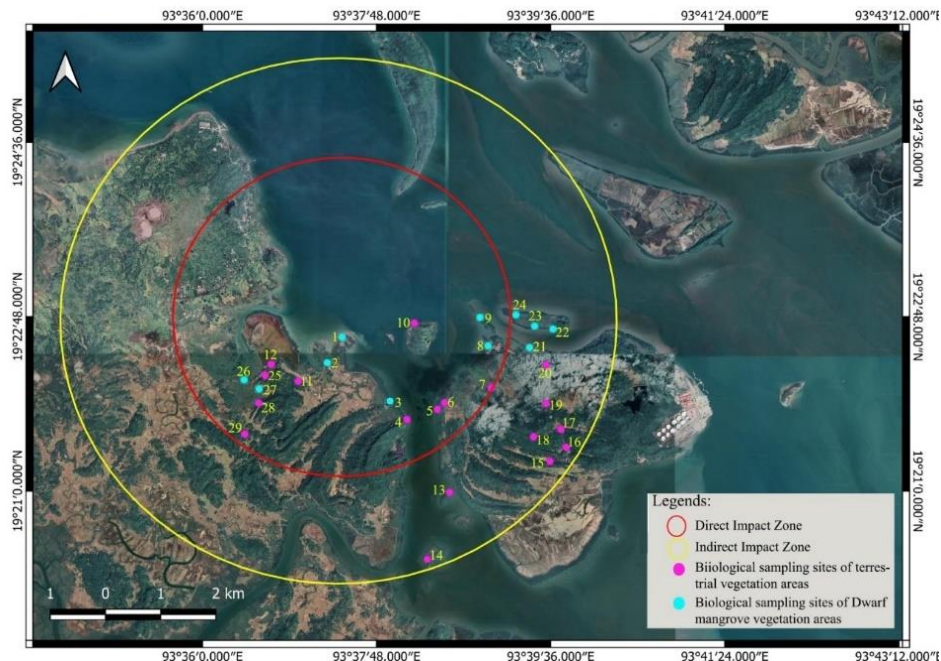


Figure 4-11: Terrestrial biodiversity study limit for of Yanbye Island Port Terminal of the Project

4.3.3 Social Environment

According to the “IFC Performance Standards on Environmental and Social Sustainability” (January 1, 2012)²⁶, “social environment” includes assessment and management of environmental and social risks and impacts; labour and working conditions; resource efficiency and pollution prevention; community health, safety, and security; land acquisition and involuntary resettlement; biodiversity conservation and sustainable management of living natural resources; indigenous peoples and cultural heritage; and cultural heritage.

Intricately interconnected, those elements of social environment can be grouped into (i) socio-economic, (ii) health, and (iii) heritage and cultural settings by which means a social impact assessment will be performed through household surveys, key informant interviews, focus group discussion, stakeholder engagement, workshops, and public consultation. Unlike the physical and biological environments, the boundary and aerial scope considerations are not as important when identifying direct and indirect and primary and secondary areas of influence when setting study limits.

All elements of the social environment are complexly related from where the Project is being developed, to the regional and national scales. However, the identification of potential impacts is based on a combination of environmental/social interactions (environment interaction risk matrix) and additional potential socioeconomic impacts identified for each phase of the Project. The study limit for social environment of KPSEZ ESIA can be distinguished accordingly.

(i) Socioeconomic Setting

Made Island Port Terminal of the Project

There are four (4) registered settlements or communities in village (i.e., Sit Taw, Say Maw, Kyan Chein, and Thit Poke Taung) which are the focal communities. However, the scope to the study is not limited to the Yanbye Island Port Terminal of the Project scheme, as the Project can have direct socioeconomic impacts to these communities as stated in Figure 4-12.

At district level Kayak Phyu is the reference benchmark (Figure 4-13), and will be considered when evaluating all elements of the social environment. This will inform or contextualise the next assessment

²⁶ https://www.ifc.org/wps/wcm/connect/c02c2e86-e6cd-4b55-95a2-b3395d204279/IFC_Performance_Standards.pdf?MOD=AJPERES&CVID=kTjHBzk

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

level where those deeply correlated elements of the social environment will be considered without compromising their inclusiveness and conclusiveness.

Studies of social environment will cover the existing conditions of the residents in the potentially impacted areas, involving livelihoods, especially agriculture and fisheries, inclusive of the marine environment and impacts on the marine users in the Thanzit River, transportation, education and healthcare, cultural heritage, natural resources which they are relying on, potential impacts on them and their concerns and comments through Key Informant Interviews (KIIs), Focus Group Discussions (FGDs) and Household Survey.

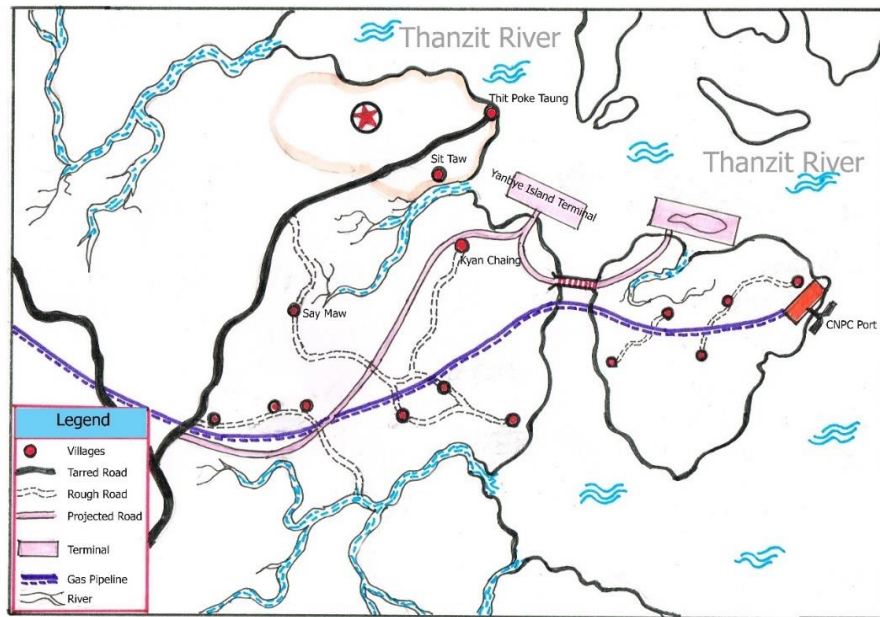


Figure 4-12: Location registered communities for socioeconomic assessment under Yanbye Island Port Terminal of the Project Scheme.



Figure 4-13: Reference Benchmark Scope Requirement for all KPSEZ DSP EIA Project

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

(i) Healthcare Setting

An identical methodology is applied in setting up the study limit for the health setting. The Health Impact Assessment will be performed by identifying the geographic boundaries for each of the three sub-projects, including area of influence, and the at-risk groups during the three phases of Project development.

Study locations

The Project is located in Yanbye Island and Made Island of Kyauk Phyu Township. The three sub projects (Figure 4-14) are

- a. Made Island Port comprising six berths and one service berth in Made Island
- b. Yanbye Island Port comprising four berths in Yanbye Island, and
- c. 15 km access road with bridge to connect into the Industrial Park SEZ area in Yanbye Island.



Figure 4-14: Location of 3 sub-projects

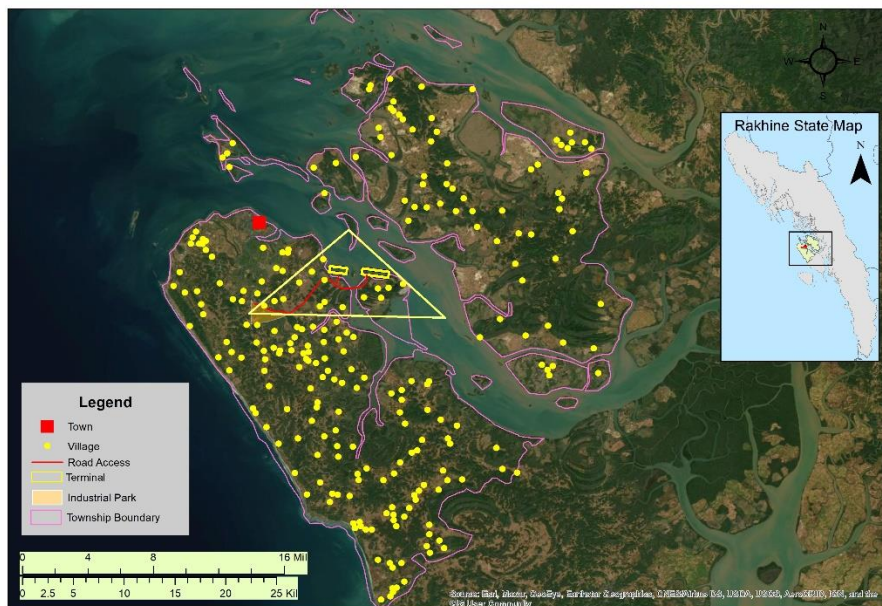


Figure 4-15: Location of Villages in Inner zone and Outer zone of the Project site (Enlarged Figure in Appendix 8)

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

The yellow triangular shape boundary (Figure 4-15) indicates the villages in close proximity to the proposed Project [Made Island Port, Yanbye Island Port and Access Road and Bridge Project] and it is designated as the Inner Zone. Villages located in the inner zone can be affected directly by the proposed Project where the infrastructure and components of the Project intersect with village tracts. Outside the triangular boundary is designated as an Outer Zone, which is the rest of the entire Kyauk Phyu Township. Villages in the Outer zone are considered as less likely to be affected.

The study area was defined based on the Project site, location as well as spatial and temporal limits of the environment outside the Project Area boundaries where an effect can be reasonably expected. The potential impacts and their nature, area of influence, Project affected persons and valued Environmental and Social components will be considered for setting the study limit. Under the socio-economic components, mortality and morbidity, occurrence of diseases, and social health determinants will be mentioned as Public Health elements. Aol (Area of Influence) is based on the Health VECs (Valued Environmental and Social Components). The villages located in the inner zone where HIA will be conducted are described in Figure 4-16. The list of the potentially affected villages due to the Project which are in the inner zone proximity to the Project site is described in Table 4-1.

All four villages in Yanbye Island inside AOI are selected as they may be impacted by health VECs. On Made Island villages close to Yanbye Island Port Terminal of the Project and access road are approximately one (1) Km and three (3) Km distance away from the Project sites hence, they are likely to be affected by the Project activities.



Figure 4-16: Villages located in the Inner Zone where HIA will be conducted

Table 4-1: List of the potentially affected villages due to three Projects which are in the inner zone proximity to the Project site

Yanbye Island Port Terminal of the Project	
Village Tract	Village
Sittaw	Sittaw
Sittaw	Kyan Chein
Sittaw	Say Maw
Sittaw	Thit Poke Taung

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

(iii) Heritage and Cultural Setting

Heritage and cultural settings can be evaluated based on the religious belief, historical values, traditions, customs and practices of particular group of people of the community. Thus, there are tangible and intangible resources when performing heritage and cultural impacts assessment. Both the resources indispensable to KPSEZ DSP ESIA since there involves direct and indirect influences to the existing heritage and cultural settings exist in the communities where proposed Project, Yanbye Island Port Terminal of the Project is to be implemented at the close proximity.

The study limit for intangible heritage and cultural settings was scoped using an identical methodology to that for the social environment. Thus, the setting limit for intangible heritage and culture setting could not be represented using aerial mapping or illustration.

However, the setting study limit for tangible heritage and cultural setting is for the entire KPSEZ DSP as described in the aerial map below. Quantitative and qualitative assessment is to be undertaken in impacted communities.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

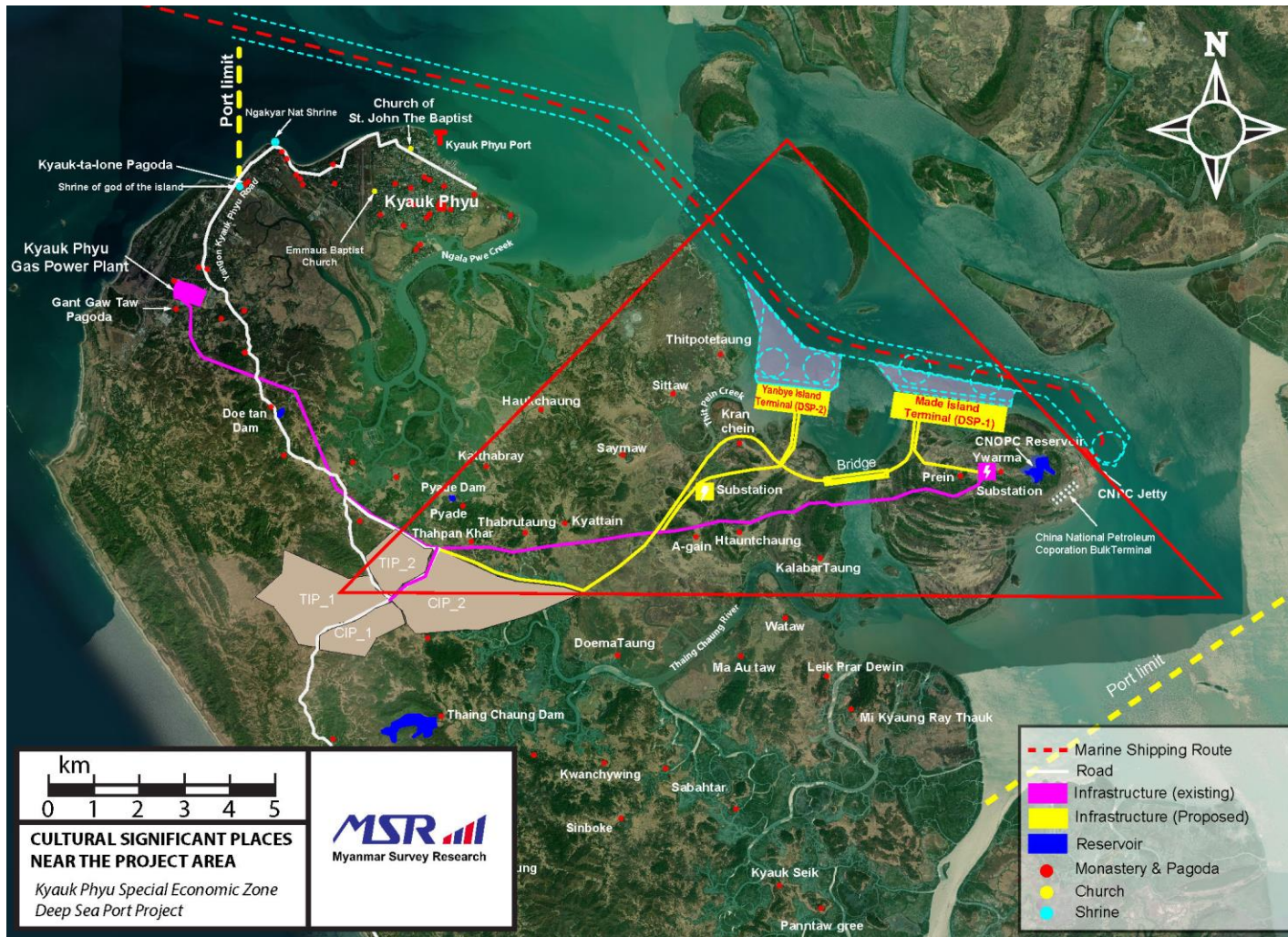


Figure 4-17: Cultural significant places in the Project area

4.4 Physical Environment

4.4.1 Climate

The climate of the Rakhine Basin is comprised of three dominant seasons, the hot season (March to May), wet season (June to October) and the winter or cool season (November to February). The area is influenced by two tropical monsoon periods; from June to September, the area is influenced by the southwest monsoon, characterized by extensive cloud cover and almost daily precipitation, interspersed with rain squalls or thundershowers (Horton et al. 2016). The northeast monsoon occurs from December to April with milder temperatures, lower humidity and less rainfall.

Transition periods between monsoons (April and May, October and November) are governed by the Inter-Tropical Convergence Zone (ITCZ) which separate the main wind streams of the northern and southern hemispheres. The ITCZ moves seasonally over the Rakhine coastal basin and moves northward during the hot season and south in the wet season.

The temperature of surrounding Project area is one of the important indicators of climate change triggered by Project activities and works. Climate change can be in varying spatial extents ranging from microclimate changes that stems from physical setting changes associated with land reclamation to Global Warming Potential derived from increased emissions from Project activities across different Project phases.

There are three meteorological stations in the regional area of the Project (Figure 5-1). Mean annual temperature in Kyauk Phyu is 26.8 °C, during the hot season, 26.3 °C during the wet season and 22.9°C during the cool season. Monthly rainfall averages for 2019 in Kyauk Phyu are provided in Table 5-1(Aung et al., 2017).

In the cool season, monthly precipitation is very low. During the wet season, particularly in the months of June, July and August, Kyauk Phyu receives very heavy rainfall due to the strong monsoon flow.

Table 4-2: Monthly Rainfall

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Kyauk Phyu	1.1	6.4	20.8	24.5	347.0	1073.1	1248.4	1054.5	540.2	261.6	109.3	16.9

Based off meteorological records recorded near the Project area, winds within Kyauk Phyu are generally light to moderate, with mean monthly wind speeds ranging from 3.2 m/s to 7.1 m/s (Aung et al., 2017). Strong winds (> 10 m/s) are most persistent during the southwest monsoon season in June to August. Wind speeds less than 2 m/s occur less than 7 % of the time during the year.

Baseline meteorological and climatological data have been retrieved from Department of Meteorology and Hydrology (DMH) of Myanmar. The data covers from 2014 to 2022 which is to support respective modelling scenarios utilising datasets to consider various modelling subjects and their respective objectives. The baseline data obtained from DMH databased is presented in the appendix. The following Figures 4-18, 4-19, 4-20, 4-21, 4-22, 4-23, 4-24 are generalized climatological and meteorological trend of Rakhine state of Myanmar; all the charts and graph are 30 years (1991 – 2020) reference database of world bank group²⁷.

²⁷ <https://climateknowledgeportal.worldbank.org/>

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

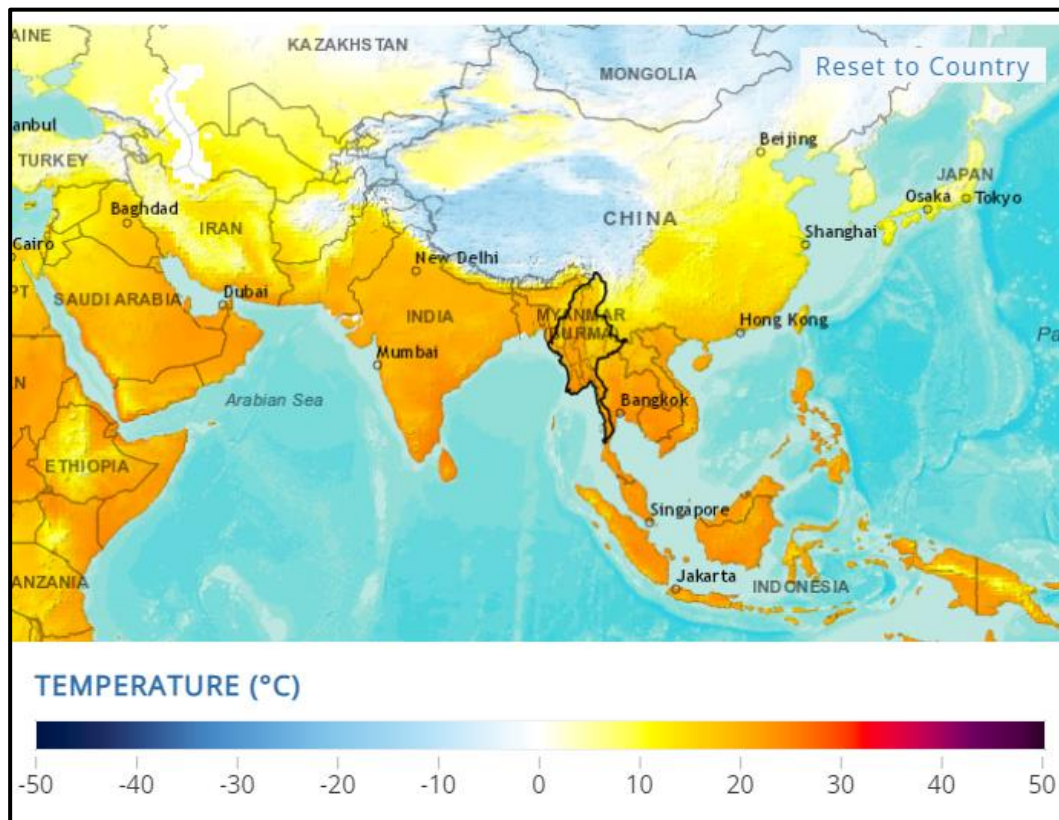


Figure 4-18: Observed Climatology of Min. Temperature (1991 -2020) of Rakhine

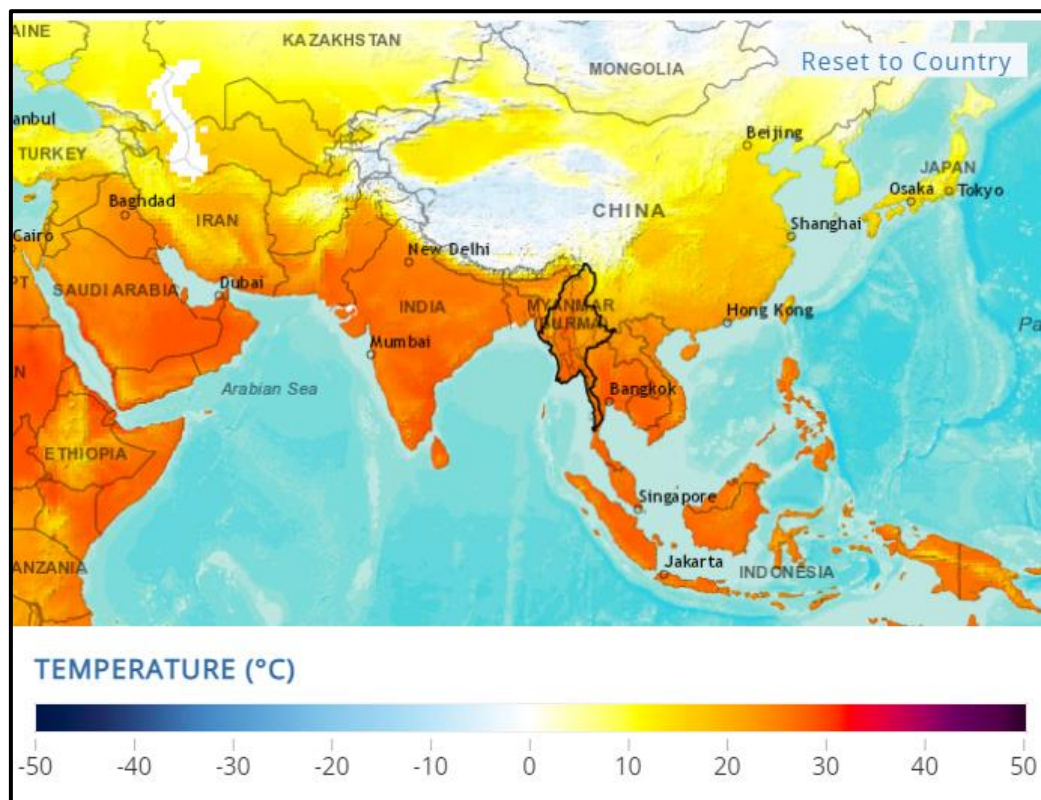


Figure 4-19: Observed Climatology of Mean Temperature (1991 -2020) of Rakhine

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

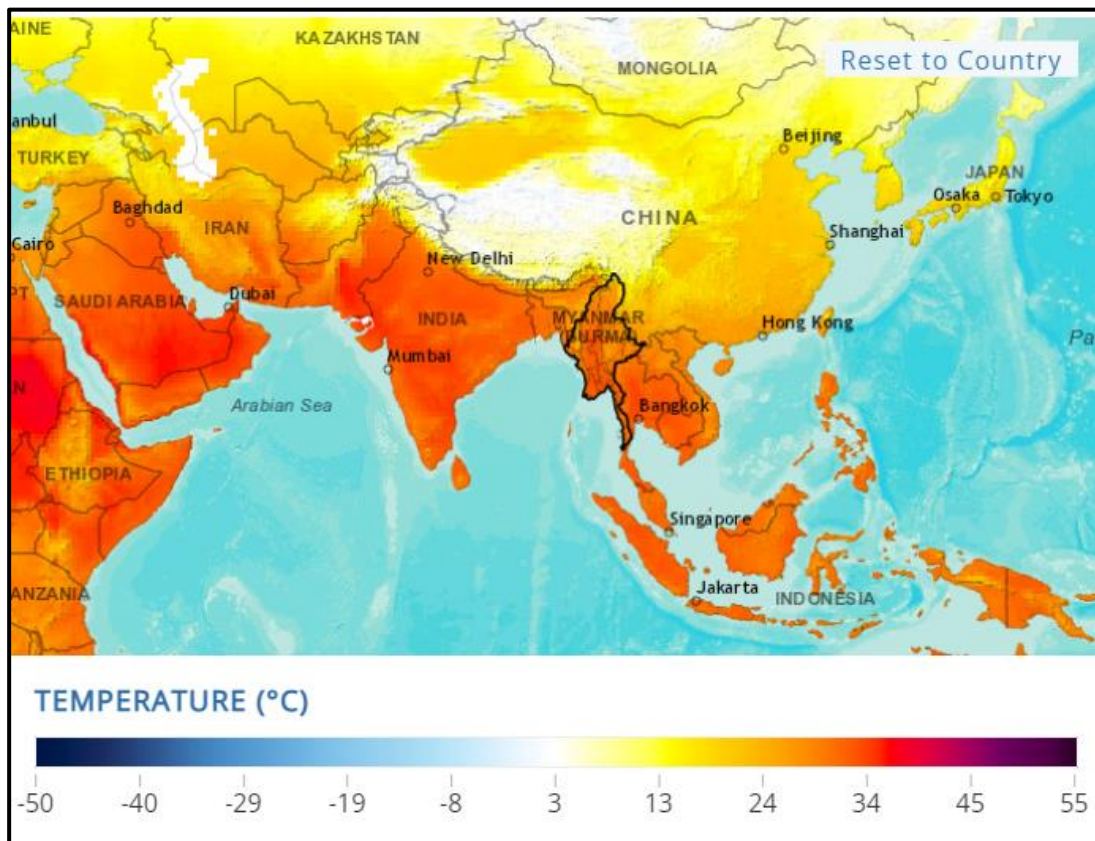


Figure 4-20: Observed Climatology of Max. Temperature (1991 - 2020) of Rakhine

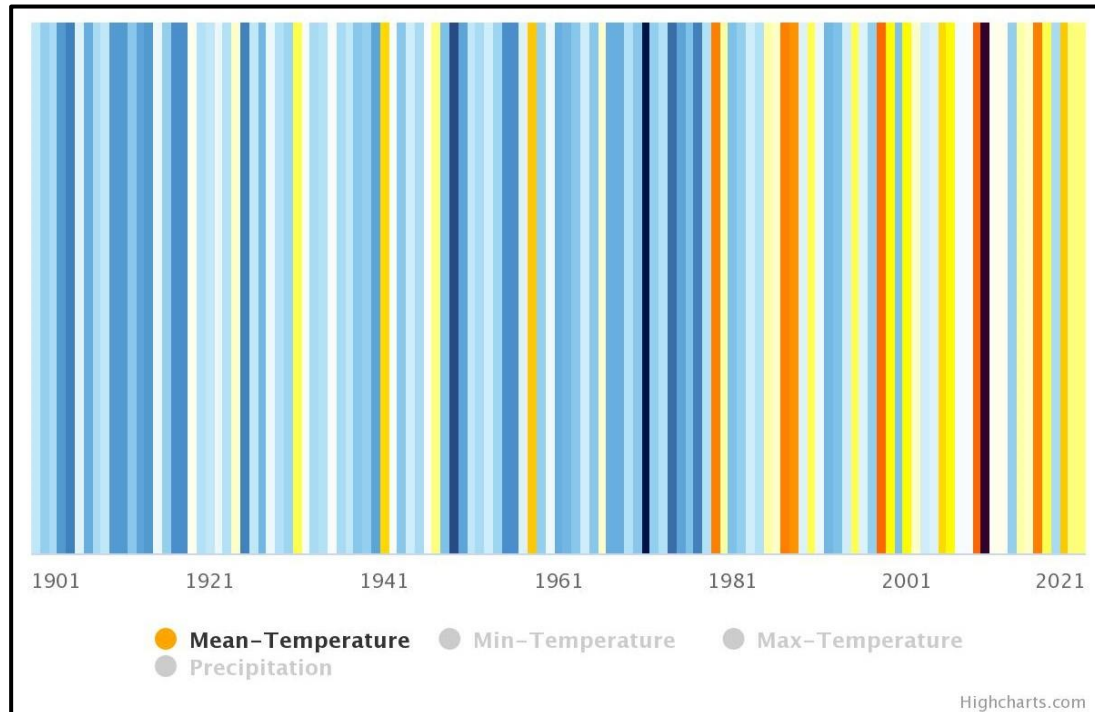


Figure 4-21: Observed Average Annual Mean – Temperature (1991 – 2020) of Rakhine, Myanmar

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

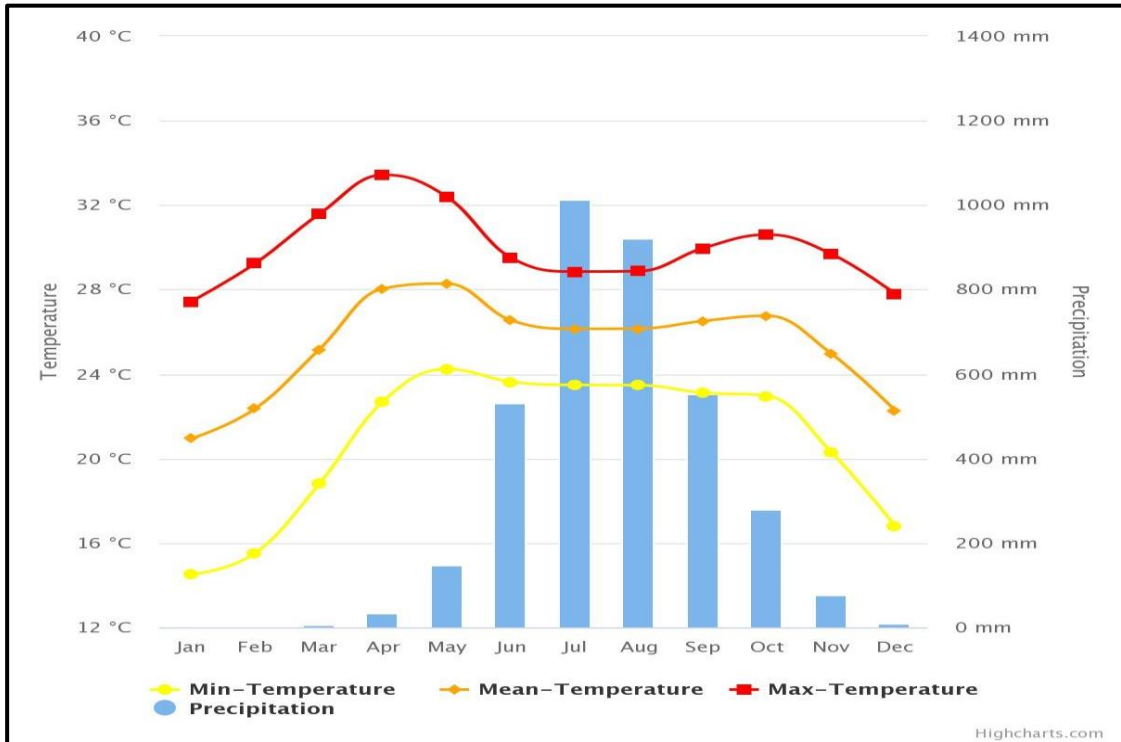


Figure 4-22: Monthly Temperature and Precipitation (1991 – 2020) of Rakhine

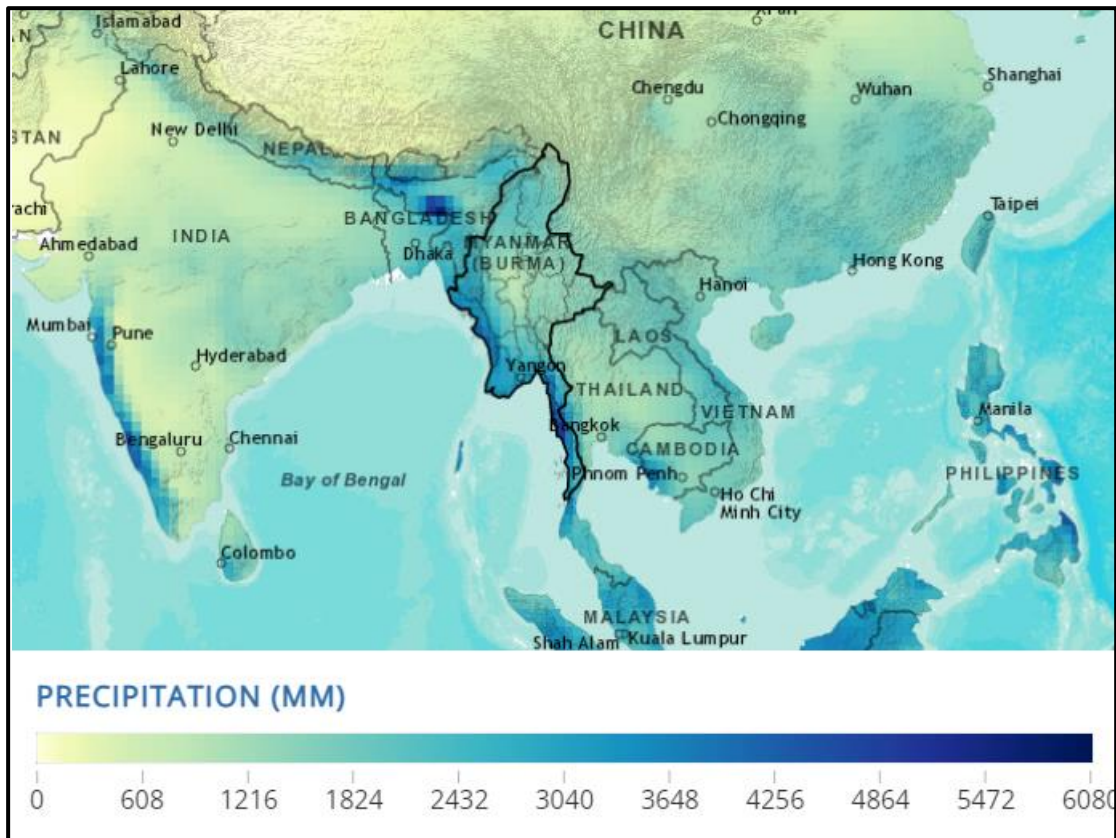


Figure 4-23: Observed Annual Climatological of Precipitation 1991 – 2020 of Rakhine

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

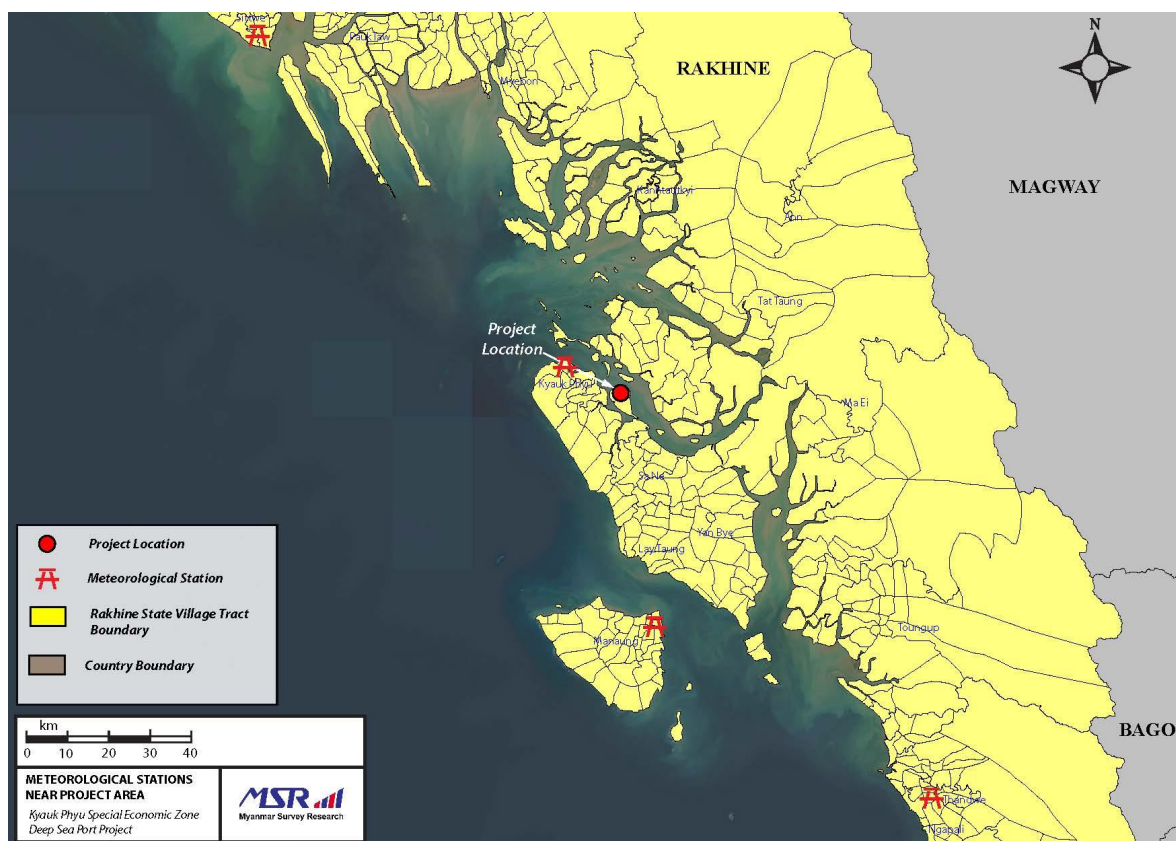


Figure 4-24: Meteorological Stations in the Project Area (Enlarged Figure in Appendix 9)

4.4.2 Air Quality

There is no comprehensive air quality monitoring data available for either Kyauk Phyu or Yanbye Island. Significant industrial emission sources in the airshed are minimal, including the Kyauk Phyu Gas Power Plant, mobile sources (ship and vehicle traffic) and wood burning. Due to the rural nature of the area, and coastal meteorological influences that aid dispersion, concentrations of criteria air contaminants (CACs) are expected to be low, although ship and vehicle traffic increases in recent years. Sources associated with the Project are expected to be minor, fugitive dust emissions, and traffic, easily mitigated through standard fuel efficiency and air quality protection measures. Even when the cumulative interaction is considered with reasonably foreseeable future projects and activities (e.g., a coal-fired power generation power plant, additional marine and inland ship traffic from other port and oil and gas activity, vehicles, fugitive dust and open burning) the likelihood of CAC and GHG emissions to exceed international ambient air quality objectives is low.

However, as part of the baseline ambient air quality data collection, MSR has performed **preliminary baseline air quality data collection** in those areas of study limits. The 7 days continuous sampling results revealed that SO₂ and NO₂ were being discovered as air quality issues in the area. It could either be the emission from point or non-point sources of automobiles and engines that also have impact to particulate dust developed in those of area in which transportation vehicles are active during the day. Transboundary impact of fugitive gases is also identified by means of those sampling station which is at the edge of Project site and at remote location from human settlements. These preliminary baseline data was collected during wet season (August 1st – September 25th 2022) compared with those obtained from dry season scheduled on January – February 2023. The full implementation of baseline data collection will be executed with the inclusion of 3

Climate change and the potential for transboundary impacts will be considered in the EIA in addition to the residual impacts. The EIA will include an air emission inventory and conduct air dispersion modelling using AERMOD or CALMET/CALPUFF software to predict concentrations of CACs at community and sensitive receptor locations, within a 10 km x 10 km modelling domain. Air quality and GHG reduction measures will be included in the Project Environmental Management Plan.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

4.4.3 Noise and Vibration

In conjunction to the ambient air quality baseline, as part of the baseline environmental data collection, MSR has performed preliminary baseline ambient noise quality data collection in those areas of study limits.

The two (2) days continuous sampling at focus interval results identified that noise intensity is high in the Project area. This could be due to the weather and climatic factors in combination with occasional traffic noises and prolonged loudspeaker noise from the community / religious hall during the day. Note that elevated noise data due to wind will be removed from the data.

Transboundary impact for noise and/or vibration is unlikely but its impacts are gauged both directly and indirectly as impacting the well-being of humans and terrestrial fauna. Noise sampling periods and frequency during the day are presented in Table 4-3: 2 days Focus Interval Continuous Sampling Program.

Table 4-3: 2 days Focus Interval Continuous Sampling Program

Characteristics	Night-Time		Day-Time				Night-Time	
	0:00 - 0:30	3:00 - 3:30	6:00 - 6:30	9:00 - 9:30	12:00 - 12:30	15:00 - 15:30	18:00 - 18:30	21:00 - 21:30
Sampling Duration (min.)	Day 1 and Day 2 (Noise sampling was undertaken in 2 days continuous over eight sampling period per day per 30-minute interval which is according to baseline approved workplan.)							
Location (s)	N1 - N2 - N3 -N4 - N5 -N6 -N7							

The preliminary baseline data collected during the wet season (August – September 2022) will be compared with those obtained from the dry season (January – February 2023). The full implementation of baseline data collection will be executed with the inclusion of scoping opinion provided by ECD.

The exception to the noise and vibration sampling is the periodical intensity in Leq. (equivalent continuous sound level) which could not be correlated during the preliminary baseline data collection. The full methodology of baseline data collection is further described in the Terms of Reference (ToR) section of this report. Nevertheless, the results of preliminary air quality baseline data collected to date are presented in the appendix.

In order to meet National Environmental Quality / Emissions Guideline (NEQG) (2015) standards (day-time and night-time noise < 70 decibels) and international health, safety and environmental (HSE) best practices, an operational noise impact assessment evaluating worker and community noise exposure is required. The assessment includes noise from the operation of stationary and mobile equipment at the port, as well as noise from idling vessels anchored at the ports and road traffic.

As the port will be constructed in a rural environment with low noise levels, baseline measurements to evaluate the existing noise environment should be conducted. Baseline data will establish an appropriate representation of the current noise environment. Current noise sources include boat traffic, overhead air traffic, and wind. Baseline data will allow for measured noise controls to be specified, protecting workers and the surrounding community from excessive noise.

Since construction activities are anticipated to last over several years, measures to limit noise and vibration emissions are strongly recommended. Noise levels resulting from the predictable worst case construction and operation phases will be modelled and assessed in the EIA. Temporary noise mitigation measures will be used to reduce construction noise levels to acceptable limits. Noise management measures will be described within the Project Environmental Management Plan.

4.4.4 Other Physical Components

4.4.4.1 Terrain, Soil, Geology (Bathymetry) and Hydrology

Construction activities such as site clearing, earthworks and blasting (if required) may physically disturb some amounts of soil and terrain along the access road, bridge and shoreline. Temporary and permanent laydown areas will be used to store excavated soil materials and will be located away from flood-prone areas. Geotechnical assessment of the Project Site is anticipated to identify areas of geotechnical

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

concern (e.g., geohazards and stability concerns; ecologically valuable soil). Detailed mitigation measures and Construction Environmental Management Plan (CEMP) will be included in the Project Environmental Management Plan. Blasting management practices, a material balance and other technical specifications will clarify and identify measures to preserve soil resources and the terrain profile. Geotechnical criteria will be defined to set engineering design thresholds to maintain safety and reduce long-term consequence risk. All these provisions and arrangements needs comprehensive and insightful understanding to terrain, soil and geology which is discussed in below section.

Terrain

The Project lies within the Rakhine Coastal Lowlands which spans several states in the western region of Myanmar. The Rakhine coastal basin has an area of 58,300 km² and is defined by narrow coast plains rising steeply to the east into the Rakhine Yoma range. The rivers of the Arakan mountains flow westwards and spill outwards into low lying coastal complexes. Due to the high rainfall received during monsoon season, these rivers carry a high sediment load depositing a significant number of alluvial sediments annually. Alluvial deposits help create estuaries and deltas that are important components of saltwater mangrove and seagrass ecosystems. The terrain, satellite, and topographic imaginary maps are presented in Figure 4-25: Terrain Map of Yanbye and Made Islands, Figure 4-26: Satellite Map of Yanbye and Made Islands and Figure 4-27: Topographic map of Yanbye and Made Islands below accordingly.



Figure 4-25: Terrain Map of Yanbye and Made Islands (Source: USGS)

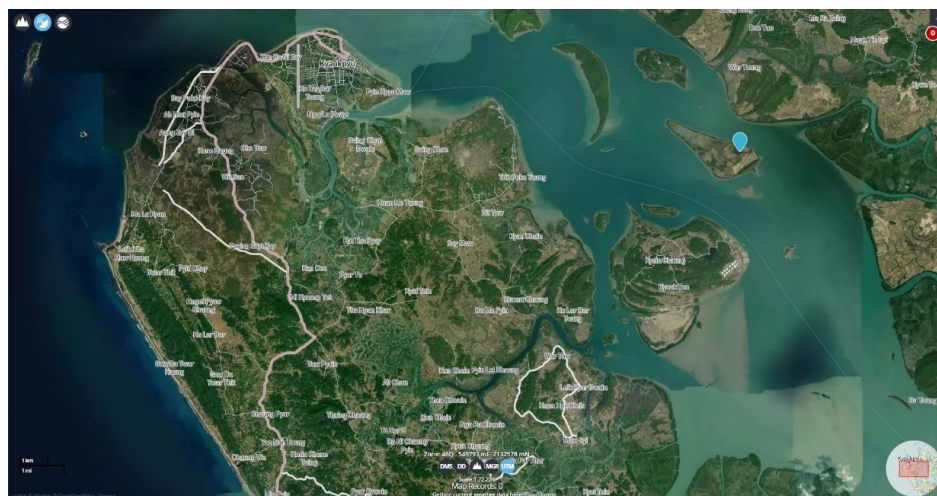


Figure 4-26: Satellite Map of Yanbye and Made Islands (Source: USGS)

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

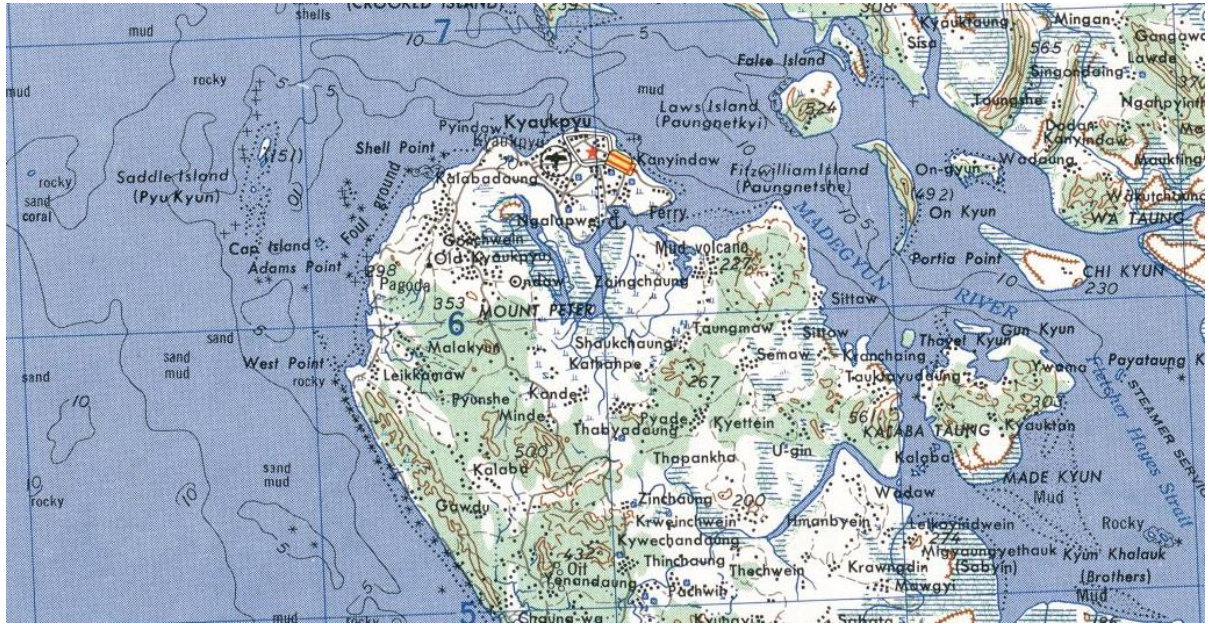


Figure 4-27: Topographic map of Yanbye and Made Islands (Source: University of Texas Libraries)

Yanbye and Cheduba (Manaung) are two large islands with associated smaller islands that are known collectively as the Yanbye Group. The Yanbye Group is an emerged archipelago consisting of silty plains composed of sandy mudstone, siltstone and sandstone deposits (Lynn, 2010). The topography of the islands is generally level and marshy. The highest peak of the northern frontier of Yanbye Island is below 150 metre and that of Made Island is well below 100 metres. The Modelled Elevation Contour in 10 metres interval of Yanbye and Made Islands is shown in Figure 4-28 and the contour map of terrain elevation in exaggerated 3D imaginary is presented in the Figure 4-29.

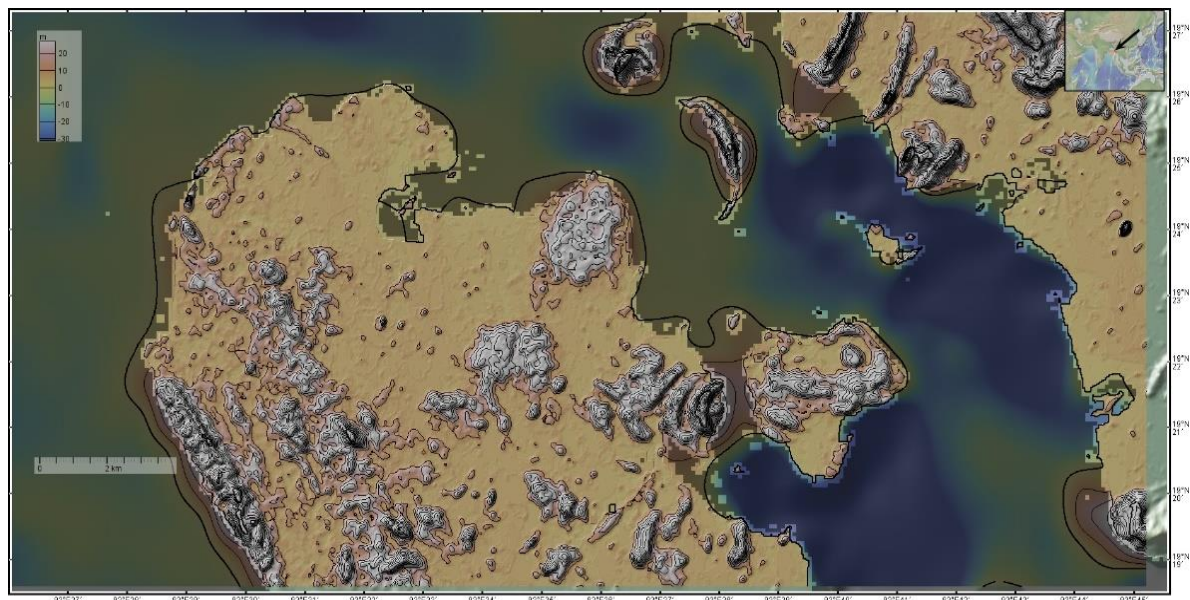


Figure 4-28: Modelled Elevation Contour in 10 metres interval of Yanbye and Made Islands (Source: GMRT)

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

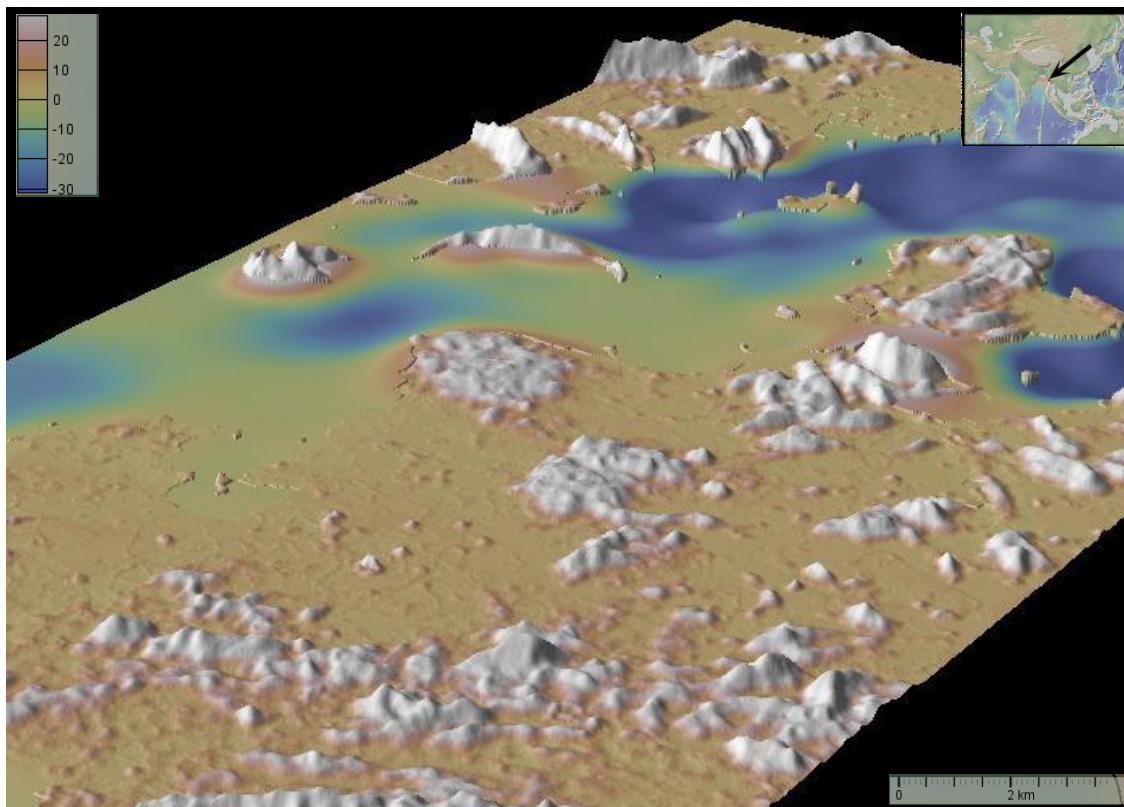


Figure 4-29: Modelled 3D imagery of Yanbye and Made Islands in Elevation Exaggeration.
(Source: GMRT)

4.4.4.2 Soil

Closer to the Project area, the eastern coast of Yanbye Island is covered in a network of estuaries and tidal channels interspersed with flights of marine terraces and sandstone cliffs (Wang, 2013). Soil within the Kyauk Phyu township largely consists of sand and alluvial deposits along the higher terraces (Myanmar Environmental Institute 2017). The extensive level lowlands within the Yanbye island coastal area are mostly made up of silty alluvium, fed by rivers that drain from the northwest. During the rainy season, these low-lying areas are prone to flooding. The soil found within these low-lying regions afford excellent conditions for growing rice and likely experience anaerobic conditions during the wet season.

According to the soil types and characteristics report developed by land use division of the ministry of agricultural and irrigation, the soil type and characteristics of Yanbye and Made Islands has gley and gley swampy soils of category 3 in low lying areas and lateritic soils 6 according to soil category (Figure 4-30). Thus, phosphorous mineral is in low potentials for bioavailability for plant nutrient with high potassium and medium range of bio-nitrogen. The soil pH is varying between 4.5 ~ 6.0 (Table 4-4). This soil nutrients and fertility is further confirmed through baseline soil data collection program. The data set is to be considered against the reference dataset to enable the best soil environment and agrarian livelihoods for the local people in the proposed Project area.

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

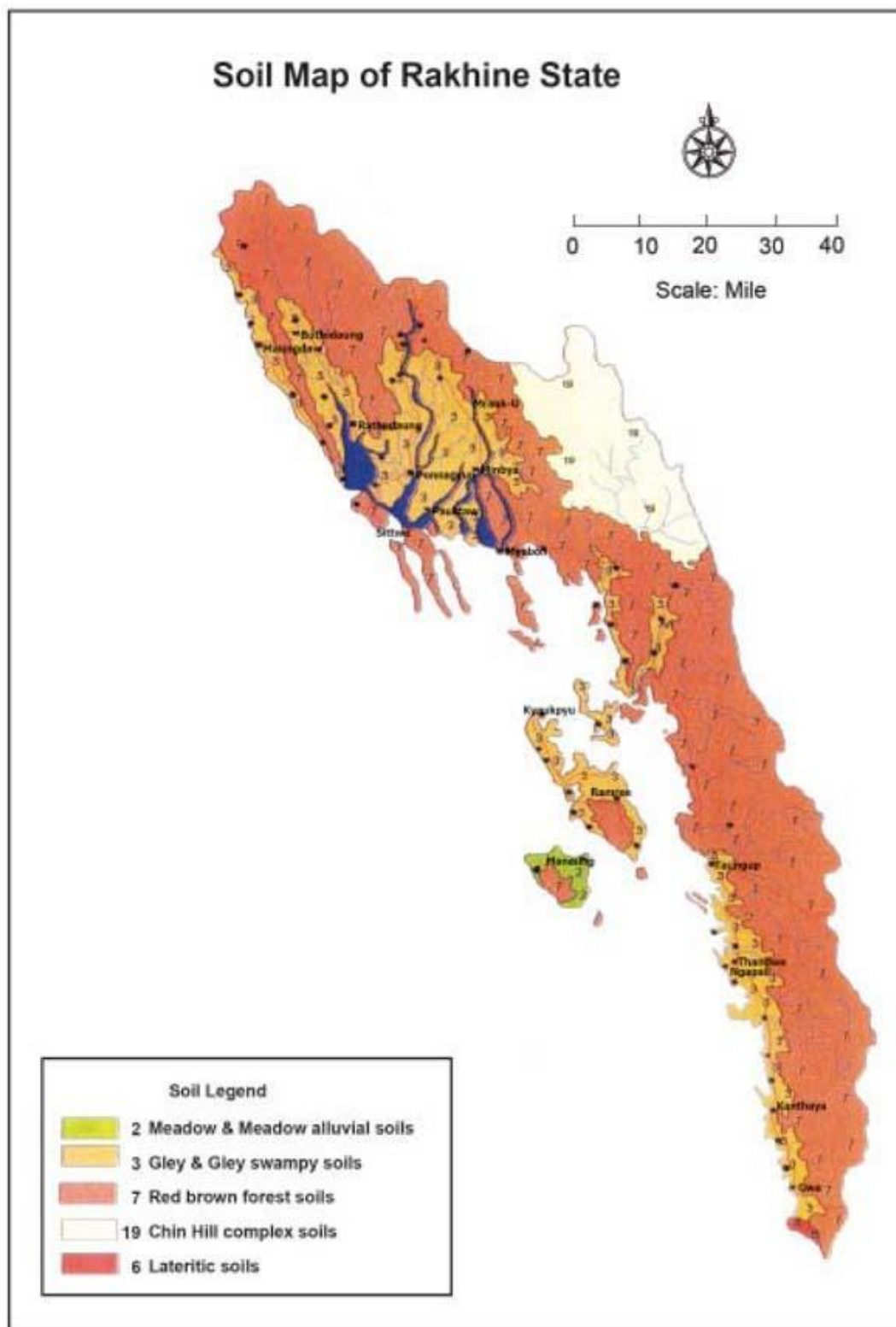


Figure 4-30: Soil Map of Rakhine State (Source: Land Use Division, Myanmar)

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Table 4-4: Soil Types and Soil Characteristic of Rakhine State (Source: Land Use Division, Myanmar)

Sr. No	Soil Type	Area (acre) approx.	Land Use Type	Class	Land Form	Soil Depth	Texture	Soil pH	Plant Nutrients			Suitable Crops	Ameliorative Measures Required
									M	L	H		
1	Meadow & Meadow alluvial soils	173,769	Rice land Kaing	Good	Plain	Thick	Loamy sand, Clay	6-7	M	L	H	Rice, Vegetables, Pulses, Sesame, Corn	Moderate dose of organic and mineral fertilizer application
2	Gley & gley swampy soils	2,172,107	Rice land	Fair	Valley bottom & plain	Thick	Clay	4.5 – 6	M	L	H	--- do ---	Drainage, Moderate dose of organic and Mineral fertilizer application
3	Red brown forest soils	5,213,057	Forest	Fair	Hilly	Med	Clay Loam, Silty clay, Sandy clay	5 – 6.5	M	L	M	Rubber, Pineapple, Mango, Forest	Forest and soil conservation
4	Chin hill complex soils	1,042,612	Forest	Poor	Steeply dissected	Med/Thin	Sandy loam Clay with gravel	4.5 – 5.5	M	L	M	Forest	--- do ---
5	Lateritic soils	173,769	Plantation	Fair	Laterite concave	Med / Thin	Sandy loam Clay loam	4 – 5.5	M	L	M	Rubber, Pineapple, Mango and other crops	Soil conservation Moderate dose of fertilizers and lime application
Total		9,088,053											

4.4.4.3 Geology

The geology of the Rakhine state of Myanmar is a mixture of Coastal lowlands and offshore islands, facing the Bay of Bengal from the west of the Rakhine Yoma ranges. These ranges are linked to hills which are a component of the Himalayas ranges. However, the majority of the Rakhine, that is the Arakan mountains is below 1000 m elevation above mean sea level; thus, the Rakhine state are not denoted as highlands. The coastal topographic setting is considered remote because of the scattered earth and sedimentary rock formation of low to medium height (i.e., below 1000 meter) and the immediate subsurface zone of uppermost lithological stratum in comparison to those of the states of the Myanmar hinterland. (Figure 4-31: Generalized Geology Map of Myanmar). The majority of the Rakhine people are largely dependent on coastal waterway transportation for commuting between major

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

destinations of the state. The maritime navigational chart and bathymetry map is presented in the Figures (4-32) and (4-33).



Figure 4-31: Generalized Geology Map of Myanmar. (Source: Zaw et al., 2017)

Moving to the closer geological context of the Project specific surrounding, the proposed Project is in the north eastern part of Yanbye Island. The sea charts below present earth surface geology and topographic setting of Made and Yanbye over which the proposed Project is to be developed. The Project footprints encompasses the extent of the disturbance to the biodiversity that exists inside those geological and geographical settings.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

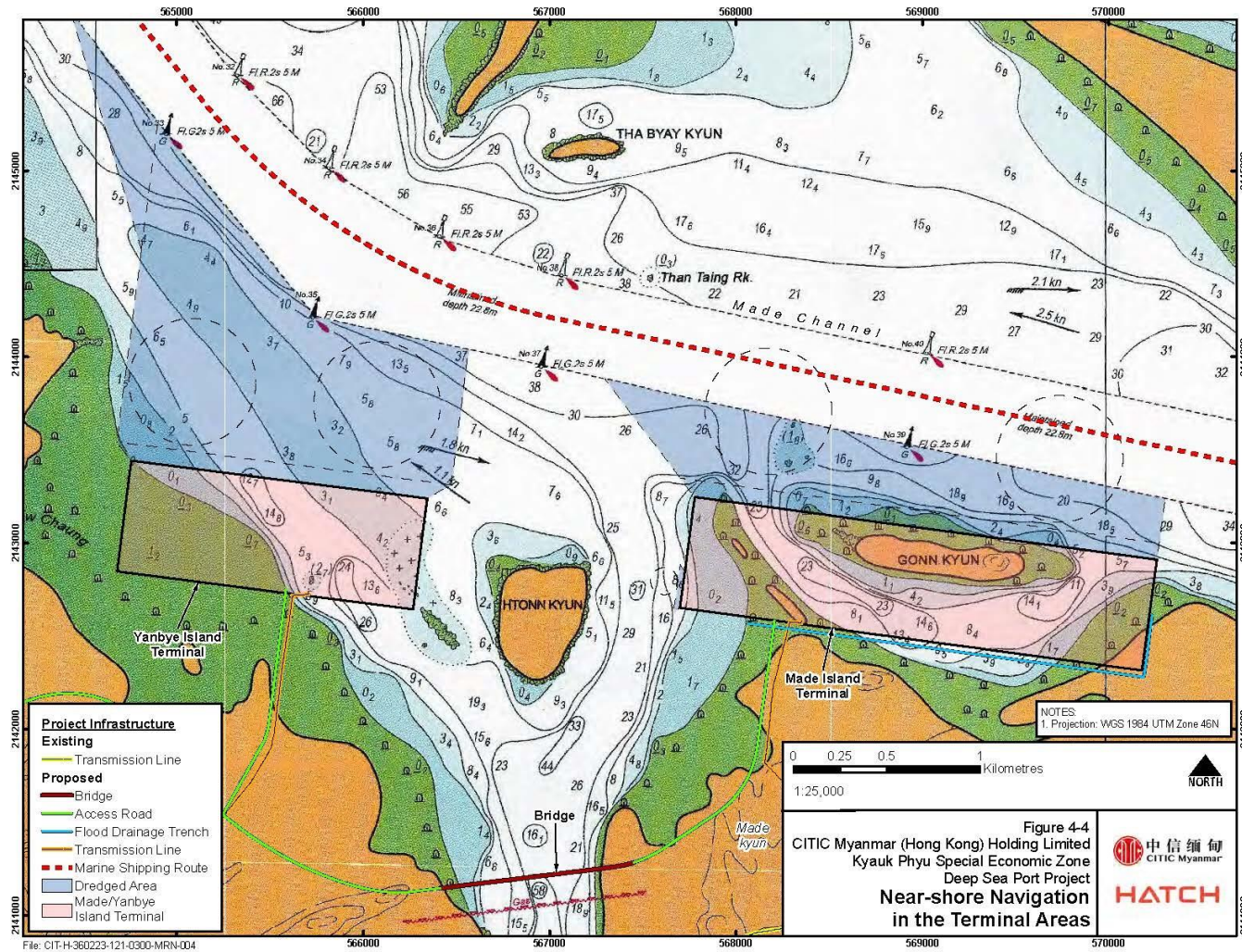


Figure 4-32: Near-shore Navigation in the Terminal Areas

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

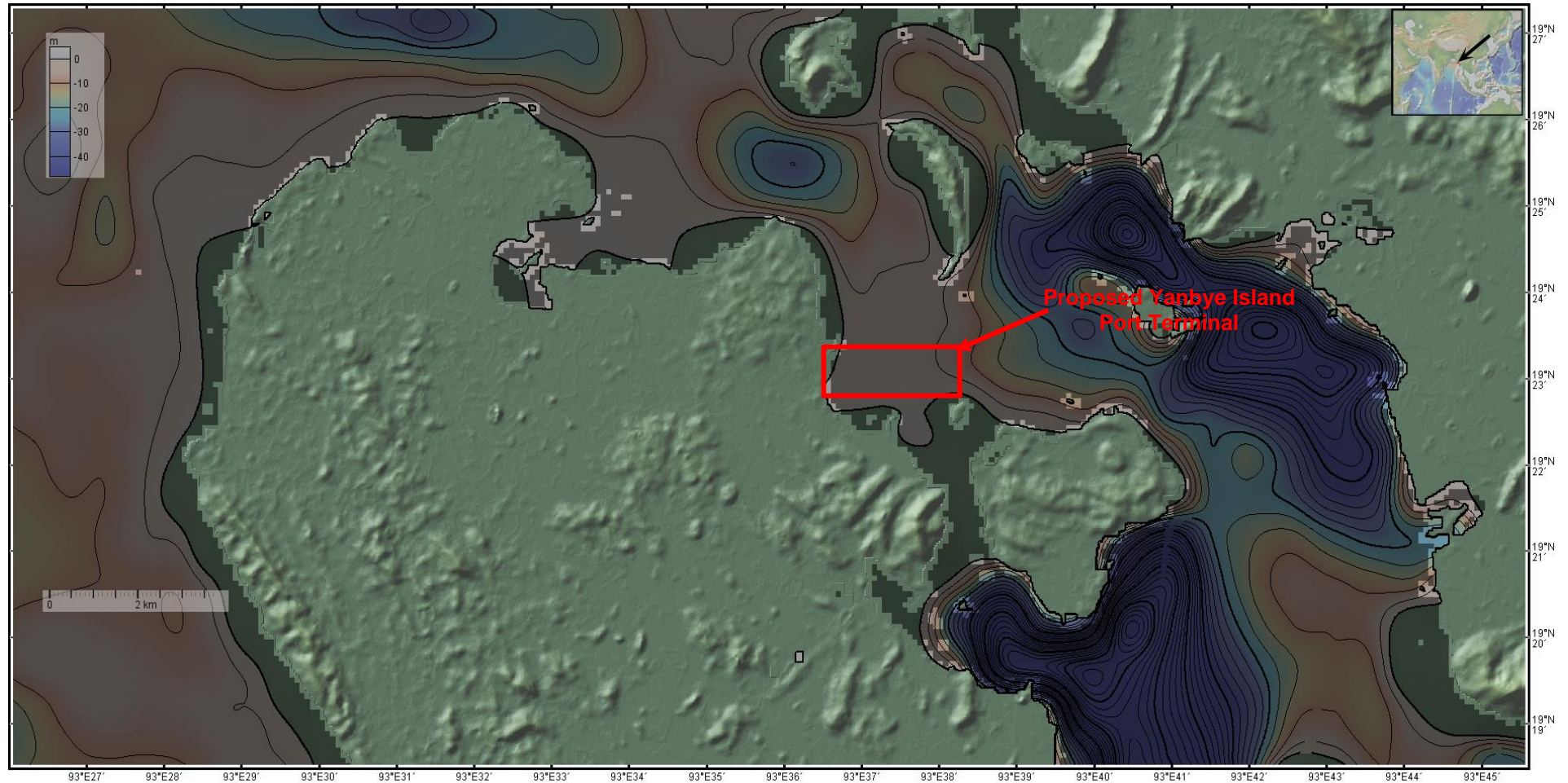


Figure 4-33: Modelled Bathymetry in -5 metres interval of Yanbye and Made Islands (source: GMRT)

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Construction of this Project will result in disturbance to the environment. This will include construction activities such as site clearing, earthworks and blasting (if required) which may physically disturb soil and terrain along the access road, bridge and shoreline. Avoiding flood-prone areas while selecting temporary and permanent laydown areas to stockpile excavated soil/dredged materials lest soil leaching or sediment recuperate into waterways. Geotechnical assessment of the Project Site is anticipated to identify areas of geotechnical concern (e.g., geohazards and stability concerns; ecologically valuable soil).

Detailed mitigation measures and BMPs will be included in the Project Environmental Management Plan. Blasting management practices, a material balance and other technical specifications will clarify and identify measures to preserve soil resources and the terrain profile. Geotechnical criteria will be defined to set engineering design thresholds to maintain safety and reduce long-term consequence risk.

4.4.4.4 Hydrology

The surface hydrology of Made and Yanbye Island includes freshwater groundwater and surface water resources and seawaters (brackish). The former resources are critically depleted due to apparent saline water intrusion due to geographic settings of both Yanbye Island. In addition, based on the locals' account, rainwater is harvested in opened ponds for drinking and hygiene purposes and ground water is intended to house chores and domestics. It is discovered that those streams and creeks present inside the hydrological settings of the islands are ephemeral only during wet season under precipitation.

Dam and reservoirs in small scale to contain rainwater is the primary source of water for those communities living surrounding of Project site. Despite the fact that ground water is main source for both domestic and hygienic purposes of Kyauk Phyu resident and with Project Proponent has no intention to apply ground water in any circumstances the scope of subsurface hydrology is not applicable. However, any geographic and topographic setting changes caused by the Project actions and activities, could cause adverse impacts to the hydrologic cycle. This could create tension with communities located adjacent or near the Project site.

4.4.4.5 Groundwaters

Based on the stratigraphic unit, Myanmar has eleven different types of aquifers. Depending on their lithology and depositional environment, groundwater from these aquifers varies in quality and quantity. The Rakhine River basin has an estimated groundwater potential of 41.74 km². The Rakhine coastal area is primarily composed of the Pegu Group aquifers. Groundwater found within these aquifers occurs primarily within Eocene rocks and is mainly composed of saline and brackish water (Zaw *et al* 2018). Freshwater is typically only found in recharge areas, which is rarely encountered within the area (MEI 2017).

From 2005 to 2010 access to safe drinking water increased from 63% to 69% in Myanmar (Zaw *et al*. 2018). While the majority of Myanmar's population obtain drinking water from groundwater resources, in the local area groundwater resources are expected to be saline contaminated. The natural geology and bedrock of the region also increases the potential for elevated concentrations of arsenic and fluoride in groundwater drinking wells.

During a site visit in July 2019, rainwater collection was observed using a system of roof gutters and temporary storage in water containers. It was also noted that shallow pits are used to passively catch rainfall water for long-term use. However according to community resilience assessments, water scarcity has become a seasonal stress as a result of intense heat, salt water intrusion and demand for irrigation (Mjelde *et al.*, 2017).

Project activities are expected to have a negligible effect on groundwater aquifers in the area. Minimal intrusive drilling will occur to support geotechnical foundational stability studies at the port, along the road and in bridge footing areas. Earthworks are not expected to penetrate or contaminate aquifers. Drinking water for the Project will be supplied through surface reservoirs and no groundwater abstraction is expected to be needed to supply construction process water.

Ground Water Quality

Groundwater quality data for those communities located in close proximity to the Project area is not available. This data gap will be filled through baseline water quality data collection in 19 locations which includes surface water of both fresh and brackish and groundwater within Aols. Sample analysis will be performed both in-situ and in the laboratory for relevant parameters in addition to those specified in the NEQGs Myanmar. The parameters required to examine sea water quality for coastal and estuarine areas are set out in article 10 of the Environmental Conservation Law (MOECAL) and will be implemented as a Project adopted limit.

4.4.4.6 Brackish Waters or Coastal Seas

The Rakhine River Basin watershed covers a catchment area of approximately 58 km² (Zaw *et al* 2018) and is defined by branching estuaries, drowned valleys with extensive lagoons, and numerous islets and mangrove swamps (Lynn, 2010). Watercourses in the Project area act as transitional bodies of water, forming part of a network of estuaries and alluvial tidal channels influenced by fresh water runoff, yet remaining partly saline throughout the year (Mjelde *et al.*, 2017). There is little publicly available information on the Rakhine River Basin itself, or on the existing water quality of waterbodies and watercourses in Kyauk Phyu Township.

The salinity fluctuation of the surface water in the Project vicinity is mainly influenced by the combined effect of precipitation (monsoon season) and freshwater runoff from the various rivers (especially Than Sit River). Tides in the region are classified as semi-diurnal (i.e., two low and two high tides a day) (Sindhu, Unnikrishnan, 2013). The tidal range varied between 3.5 m to 2.7 m (3.2 m to 2.6 m, 2014b) during high and 1.4 m to 0.6 m (1.0 m to 0.6 m, 2014b) low tide for Made Island Port Terminal of the Project by Myanmar Naval Hydrographic Centre 2014a. Most of the mangrove forests occur along the shoreline of higher intertidal zone and watershed area.

The access road to Made and Yanbye Island Port Terminal of the Projects is located south of the mouth of the Thit pein C river channel and north of the lower reach of the Thaing Chaung River (see Figure 5-2). Thit pein C has a defined alluvial channel 575 m wide at the estuary mouth, with mangrove forest in the intertidal and riparian areas. The Thaing Chaung River (approximately 7.5 km long in the main-stem and south of the proposed bridge crossing), has a defined channel that has meandered to undercut cliffs along the margins of residual hills.

Numerous tributaries and hydrologically connected estuaries and wetlands branch off from these rivers and may cross the footprint of the proposed access road. These areas provide important habitat for fish, shrimp, crab and bivalves and represent an important and sensitive ecosystem (MEI 2017). Fish associated with mangrove estuaries and that were observed at the Kyauk Phyu market included Yellow Pike Conger (*Congresox talabon*) and gray eel catfish (*Plotosus canius*).

Sea Water Quality

The Project DSP as defined in Section 4.1, will encompass both shallow water (<50 m) and deep-water environments along shipping lanes (up to 2,000 m) as well as coastal and nearshore habitats such as mangroves, coral habitat and seagrasses around the Made and Yanbye Island Port Terminal of the Project. The natural depth of the water area beyond Made Island is relatively deep at -19 m CD to -24 m CD and there is an oceanic trench behind the port area. The natural depth of the water area beyond Yanbye Island is between -3 m CD and -6 m CD. The shallow near shore marine waters surrounding the Project area host mangrove forests and seagrass habitat consistent with high biological diversity and enhanced biological productivity. These ecosystems are sensitive to water quality and sedimentation.

Sea water quality data for the Project area is not available. This data gap will be filled through baseline water quality data collection in 19 locations which includes surface water of both fresh and brackish and groundwater within Aols. Sample analysis will be performed both in-situ and laboratory to substantive parameters in additions to those specified in the NEQGs Myanmar to examine sea water quality for coastal and estuarine areas are set out in section 10 of the Environmental Conservation Law and will be implemented as a Project adopted limit.

4.5 Biological Environment

4.5.1 Terrestrial Flora

A few small patches of forest left on Yanbye Island are part of original semi-evergreen forest which is mostly found on the hilly areas. Small clusters of bamboo communities of *Melocanna baccifera* (Kayin-wa) are found in some hilly terrain. Bamboo forests are found in small clusters and in those communities, *Melocanna baccifera* (Kayin-wa) thriving abundantly mixing with *Gigantochloa nigriciliata* (Wayar) and other terrestrial plants. During the site visits and scoping surveys sizable patches of *Anacardium occidentale* (Thiho-thayet) and *Areca catechu* (Kunthi-pin) plantations and small patches of domesticated bamboos of *Dendrocalamus brandisii* (Wabo) and *Dendrocalamus longispathus* (Wanet) are found sporadically in the hill forest areas.

There is less natural forest cover on this island due to the development of plantations, other anthropogenic actions, natural disasters and different forms of land use. As a result, higher open forest types are more common than closed forest types on the Island.

Primary data collected on-site visits and scoping trip results in a total of 113 terrestrial flora species from different families and genera. By natural composition, the major plant species identified and recorded are 53 tree species (46.9%), followed by 21 shrub species (18.6%), 15 small tree species (13.3%), and 11 climber species (9.7%), 8 herb species (7.1%), 3 bamboo species (2.7%) and 2 fern species (1.8%).

The survey found that typically combined different forms of plants from families of Fabaceae, Malvaceae, Moraceae, and Euphorbiaceae constitute the island's forest make-up. None of the species recorded during the survey, are listed in the IUCN red list (2021) as threatened whatsoever.

Out of 113 types of plants observed and listed from the Island, the most common species of trees are 10 trees, 5 small trees, 5 shrubs and 5 climbers. (See Table 4-5: The most common species of trees, small trees, shrubs, and climbers of Yanbye Island). The most common species of trees identified can be seen in Photo Plate 4-1. Herbs and bamboos are not discussed in this report for being only negligible numbers. Vegetation and a small area of hill forest including bamboo will be lost with construction of the Project.

Table 4-5: The most common species of trees, small trees, shrubs, and climbers of Yanbye Island

Sr.No.	Scientific Name	Family Name	Myanmar Name	Common Name
TREES				
1	<i>Archidendron pauciflorum</i> Nielsen	Fabaceae	Tanyin	Djenkol bean
2	<i>Albizia procera</i> Benth.	Fabaceae	Sit	White siris
3	<i>Artocarpus chama</i> Roxb.	Moraceae	Taung-peinne	Wild breadfruit tree
4	<i>Bombax Insigne</i>	Malvaceae	Didu	White silk-cotton tree
5	<i>Butea monosperma</i> Taub.	Fabaceae	Pauk	Flame-of-the-forest
6	<i>Dolichandrone spathacea</i> Seem.	Bignoniaceae	Thakut-ma	Mangrove trumpet tree
7	<i>Ficus rumphii</i> Bl.	Moraceae	Nyaung-phyu	Mock Bo tree
8	<i>Lagerstroemia speciosa</i> Pers.	Lythraceae	Pyinma-ywetthay	Pride of India
9	<i>Mitragyna rotundifolia</i> Kuntze	Rubiaceae	Hnaw-thein/Binga	Round-leaf kadam
10	<i>Neolamarckia cadamba</i> Bosser	Rubiaceae	Ma-u-lettan-she	Leichhardt-pine
SMALL TREES				
11	<i>Ficus hispida</i> L. f.	Moraceae	Ka-aung	Hairy Fig
12	<i>Glochidion assamicum</i> Hook. f.	Phyllanthaceae	Htamin-sok-phyu	Bhoma
13	<i>Macaranga denticulata</i> Muell. Arg.	Euphorbiaceae	Phet-wun	Macaranga tree

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr.No.	Scientific Name	Family Name	Myanmar Name	Common Name
14	<i>Senna timoriensis</i> Irwin & Barneby	Fabaceae	Taung-mazeli	Limestone Cassia
15	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Taw-zi	Indian-plum
SHRUBS				
16	<i>Chromolaena odoratum</i> L.	Asteraceae	Jamani-chon/Bi-zat	Christmas bush
17	<i>Callicarpa nudiflora</i>	Lamiaceae	Daungsat pyar	Beautyberry
18	<i>Clerodendrum infortunatum</i> L.	Lamiaceae	Panyinphyu	Hill glory bower
19	<i>Grewia hirsuta</i> Vahl	Malvaceae	Kyet-tayaw	Bush mallow
20	<i>Senna obtusifolia</i> Irwin & Barneby	Fabaceae	Dantkywe	Sicklepod
CLIMBERS				
21	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Kala-myetsi-ga-lay	Balloon vine
22	<i>Combretum acuminatum</i> Roxb.	Combretaceae	Nabu-nwe	Bush willow
23	<i>Dioscorea wallichii</i> Hook. f.	Dioscoreaceae	Kadat	Hairy yam
24	<i>Mikania scandens</i> L.	Asteraceae	Bizat-nwe	Climbing hemp weed
25	<i>Thunbergia grandiflora</i> Roxb.	Acanthaceae	nwe-nyo	Bengal trumpet

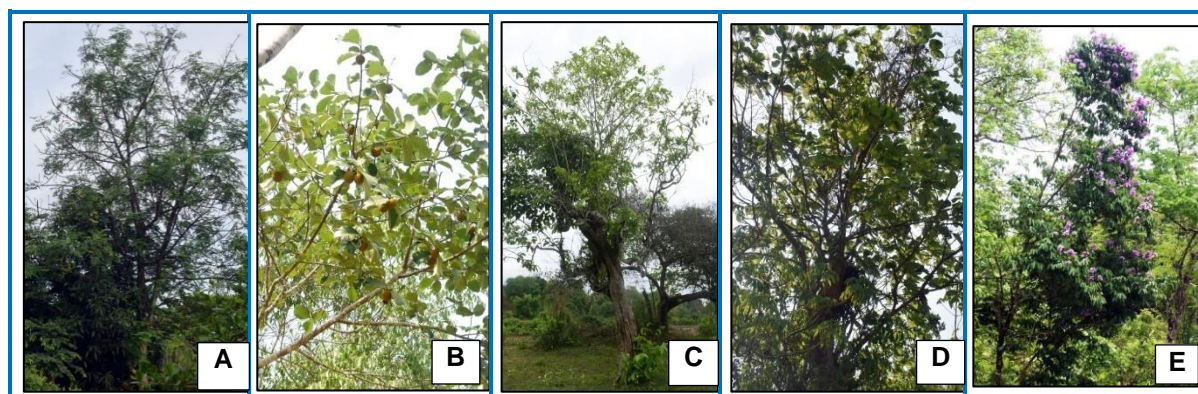


Photo plate 4-1: Some of the most common species of trees from Yanbye Island Area: (A) *Albizia procera* (Sit); (B) *Artocarpus chaplasha* (Taung-peinne); (C) *Dolichandrone spathacea* (Thakut-ma); (D) *Ficus rumphii* (Nyaung-phyu); (E) *Lagerstroemia speciosa* (Pinyinma-ywetthay)

4.5.1.1 Coastal Mangrove Forest

Some patches of Mangrove Forest in Made and Yanbye Islands of Kyauk Phyu district still exist with good natural quality. It is important to protect and conserve at least some important areas within the island and restore where possible lost mangrove areas existed.

Dwarf mangrove ecosystems occur in very small patches along the Myanmar coastline where large rock platforms and suitable environmental conditions allow. Only two confirmed patches are currently known, one in Rakhine State and one in Tanintharyi State. Heavy blows from regular early and late monsoon and sea level rises are major culprits for dwarf mangroves ecosystem. Above all thanks to the low number of anthropogenic threats, the ecosystem continues to survive yet still threatened.

Deforestation is the primary threat to mangroves along the Rakhine coast, with this being considered a hotspot for mangrove deforestation in Southeast Asia, after losing >10% of mangrove forest per 1 degree grid cell in many parts of the state between 2000 - 2012 (Richards and Friess, 2016). Moreover, an assessment of time-series vegetation indices suggests a 12% degradation of the ecosystem since 2000. 50-year projections indicate that about 40% of the ecosystem may become degraded by 2050 (Murray et.al. 2020). Furthermore, Murray et.al. 2020 reported mangrove forest from Rakhine is ranked

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

as Critically Endangered and is one of the threatened ecosystems of Myanmar according to the IUCN Red List of Ecosystems Assessment for Myanmar.

Stanley and Broadhead 2011 described the dominant species of Rakhine coastal mangrove forests such as *Rhizophora*, *Sonneratia*, *Kandelia*, *Bruguiera* and *Xylocarpus granatum* and IUCN listed species viz., *Intsia bijuga* (Vulnerable), *Heritiera fomes* (Endangered), *Sonneratia griffithii* (Critically Endangered), *Ceriops decandra* (Near Threatened), *Aegialitis rotundifolia* (Near Threatened).

The vegetation structure of mangrove is sparsely distributed in some watershed areas of the Access Road and both in the water bank of Yanbye and Made Islands near the Bridge construction area. The diversity pattern of most of the mangrove in the Project vicinity and adjacent coastal areas are similar to other coastal areas such as Ayeyarwady and Tanintharyi coastal areas. *Avicennia* spp. are the common plants in this mangrove community and followed by *Aegiceras corniculatum* and *Aegialitis rotundifolia*.

On the other hand, *Tamarix troupii*, a peculiar plant associated with *Excoecaria agallocha* was observed on Yanbye Island and is not found in Ayeyarwady and Tanintharyi. A detailed assessment of *T. troupii* should be carried out before the construction period. The IUCN red listed status of mangroves is described in in Table 4-6: Mangroves from Yanbye and Made Islands and adjacent areas hotly included in IUCN Red List covered.

[The following species were recorded throughout the scoping survey; *Phoenix paludosa*, *Calamus viminalis*, *Flagellaria indica*, *Pluchea indica*, *Lumnitzera racemosa*, *Excoecaria agallocha*, *Tamarix troupii*, *Aegiceras corniculatum*, *Dolichandrone spathacea* are generally found in upper tidal area.

Acrostichum aureum, *Nypa fruticans*, *Aegialitis rotundifolia*, *Caesalpinia crista*, *Cynometra ramiflora*, *Dalbergia spinosa*, *Derris scandens*, *Derris trifoliata*, *Pongamia pinnata*, *Finlaysonia obovata*, *Sarcobolus carinatus*, *Acanthus ilicifolius*, *Acanthus volubilis*, *Avicennia alba*, *Avicennia marina*, *Avicennia officinalis*, *Volkameria inerme*, *Hibiscus tiliaceus*, *Heritiera fomes*, *Xylocarpus granatum*, *Bruguiera cylindrica*, *Bruguiera gymnorhiza*, *Ceriops decandra*, *Ceriops tagal*, *Rhizophora apiculata*, *Rhizophora mucronata*, *Sonneratia alba*, *Sonneratia apetala* are generally found in lower tidal area.]

Table 4-6: Mangroves from Yanbye and Made Islands and adjacent areas hotly included in IUCN Red List covered

No.	Genus/Species	Habit	Common name	IUCN
1.	<i>Heritiera fomes</i>	Tree	Pinlekanazo	Endangered (EN)
2.	<i>Phoenix paludosa</i>	Palm	Mangrove date palm	Near Threatened (NT)
3.	<i>Aegialitis rotundifolia</i>	Small tree	Badan/ Sa-baung	Near Threatened (NT)

There are no known designated areas such as sanctuary areas for nature conservation, key biodiversity areas (KBAs) and protected areas in the Project's footprint. Reserved mangrove forest is located about 15 km from the Project area to the east (mainland), and Figure 4-34 shows Coastal Mangrove Forest Cover in Kyauk Phyu. Mangrove can be seen in Photo plate 4-2: Shoreline along Made Island Port Terminal of the Project quay line and Photo Plate 4-3: Shoreline south-west of the future Yanbye Island Port Terminal of the Project Site. Manaung Island is proposed as a priority key biodiversity area (KBA) which is about 50 km further south.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

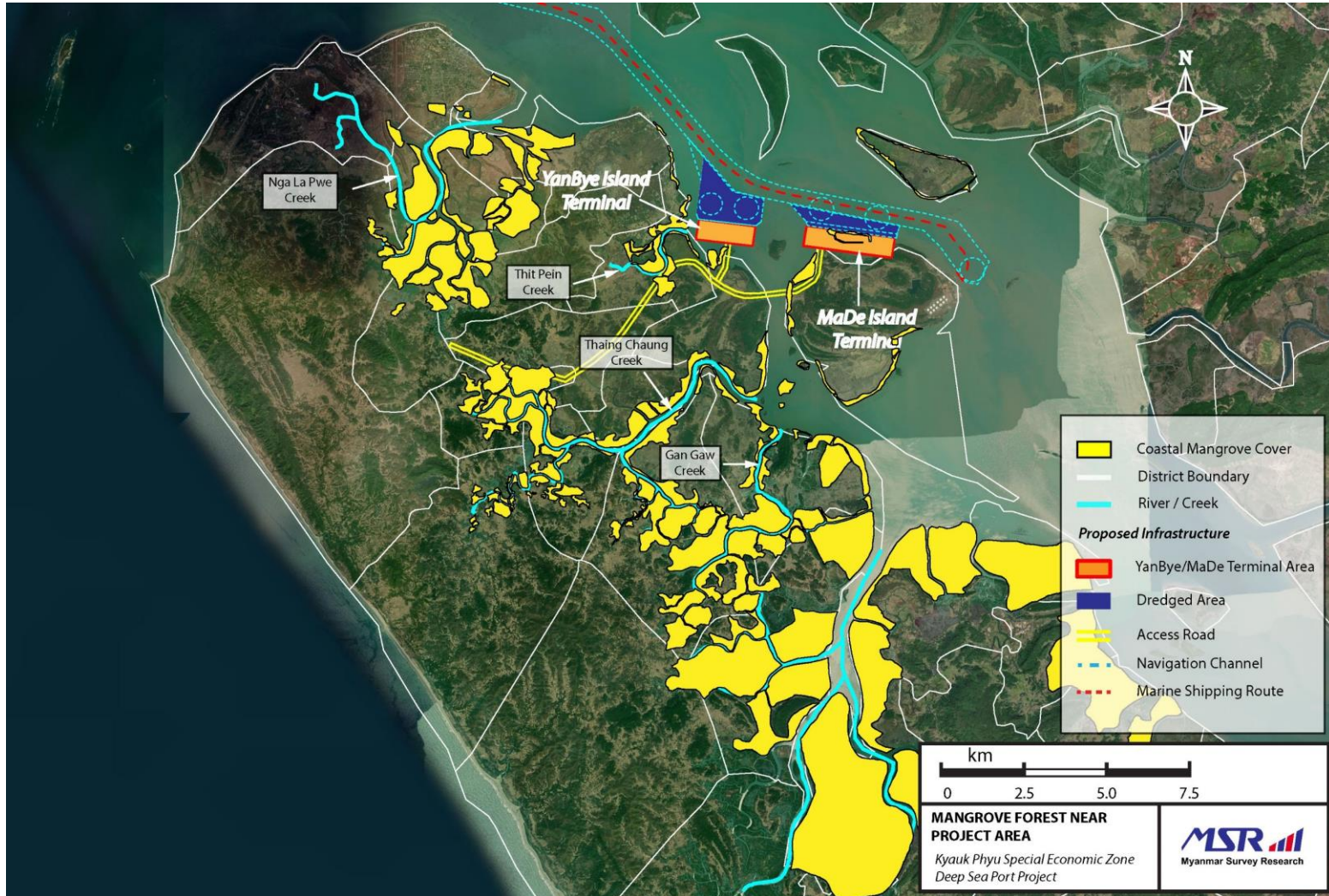


Figure 4-34: Coastal Mangrove Forest Cover in Kyauk Phyu

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)



Photo plate 4-2: Shoreline along Made Island Terminal quay line



Photo plate 4-3: Shoreline south-west of the future Yanbye Island Port Terminal of the Project Site

4.5.2 Terrestrial Fauna

Yanbye Island as a marine dominant area, especially the front part of the proposed Project and this is where it is likely to be low populations of terrestrial animals. Amphibians and reptiles are not abundant as they have only limited area for breeding. Similarly, flying insects, such as indicator species of dragonfly and butterfly are less abundant in the Project area. But some species such as crab eating monkey, large fruit bats and raptor birds are likely to be found in the hilly forest, on the back part of the proposed Project. Most species found in Yanbye Island are the same as that found in Made Island due to the close proximity of the two islands and similar habitat structures.

4.5.2.1 Amphibians (Frogs and toads)

Although frogs and toads are not abundant in the survey area, some such as *Fejervarya limnocharis* (Indian cricket frog), *Hoplobatrachus tigerinus* (Indian bullfrog), *Kaloula pulchra* (Asian painted frog) and

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Duttaphrynus melanostictus (Asian common toad) were recorded in the survey area. Further study for the species abundance will be conducted in the EIA baseline study. No IUCN Red list species have been found.

4.5.2.2 Reptiles: Snakes, Turtles and tortoises, Lizards

Snakes are also not abundant, but the poisonous snakes such as cobra *Naja kaouthia* (Monocled cobra) and *Trimeresurus albolabris* (Green pit viper) were recorded while the non-poisonous snakes such as the *Ptyas mucosa* (Oriental rat snake) and *Coelognathus radiatus* (Radiated rat snake) were documented. Larger non-poisonous snakes, *Malayopython reticulatus* (Reticulated python) and *Python bivittatus* (Burmese python) were also reported but are rarely found in the study area. Other species of snakes and species abundance, and their contributions to the ecosystem will be studied further. The Burmese python is described as Vulnerable (UV) status in IUCN Red list in 2021.

(Note: Snakes were recorded during baseline study and presence of some snake species were confirmed by interviews.)

Turtles and tortoises are very rare in the study area. IUCN red list species, *Indotestudo elongata* (Yellow tortoise) is locally reported in the survey area. This species is described as critically endangered (CR) in IUCN Red list in 2021. The Yellow tortoise is protected by Conservation of Biodiversity and Protected Areas Law (2018) and under the Rules of Myanmar wildlife protection 2020. This tortoise is locally known as “Taung Leik”, meaning mountain-dweller. Other turtle and tortoise species like *Siebenrockiella crassicollis* (Black marsh turtle) may be recorded in baseline studies.

Lizards are not abundant. *Calotes versicolor* (Garden lizard), *Gekko gekko* (Tokay) and *Eutropis multifasciata* (Common sun skink) were found as common species. Water monitor lizard is locally reported. No IUCN Red list species were found in the study area.

4.5.2.3 Mammals

Bats - Bats were not largely found in the study area. *Pteropus vampyrus* (Large fruit bats) were recorded in the study area (See Photo Plate 4-4). Other bat species may be found, but may not be many as the habitats in the study area lack favourable roosting sites for bats.

Other mammals – *Viverricula indica* (Small Indian Civet), *Callosciurus phayrei* (Phayre's Squirrel), *Bandicota bengalensis* (Lesser bandicoot rat), *Muntiacus muntjac* (Red muntjac), *Canis aureus* (Golden jackel) and *Macaca fascicularis* (Crab eating macaque) are present in the study area. Among them, Crab eating macaque was described as endangered (EN) in IUCN Red list 2021. This species was listed in 100 World's Worst Invasive Alien Species.

4.5.2.4 Avifauna

Raptors – *Milvus migrans* (Black ear kite), *Haliastur Indus* (Brahminy kite), *Haliaeetus leucogaster* (White-bellied sea eagle), *Pernis Ptilorhynchus* (Oriental honey-buzzard) and *Accipiter badius* (Shikra) were recorded in the study area. These species are protected by Conservation of Biodiversity and Protected Areas Law (2018).

Other birds, *Anthracoceros albirostris* (Oriental pied hornbill), *Psittacula alexandri* (Red-breasted parakeet), *Streptopelia chinensis* (Spotted dove), *Dicrurus macrocercus* (Black drongo), *Pycnonotus jocosus* (Red-whiskered bulbul), *Acridotheres tristis* (Common myna), *Cinnyris jugularis* (Olive-backed sunbird) were recorded as common birds in the study area. *Columba punicea* (Pale-capped pigeon) was recorded in the study area and is IUCN Red List species. Further studies to determine species abundance will be conducted in the EIA baseline study.

Detailed data on the distribution, abundance, habitat utilization and seasonal migration of seabirds specific to the Project area are currently limited. The study team was unable to pick up data about both transcontinental and regional migratory birds for the fact that the scoping days being in August did not fall in bird migrating season. Only rather scanty number of birds mentioned above were randomly spotted.

Coastal birds or aquatic birds

Egretta garzetta (Little egret), *Ardeola bacchus* (Chinese pond-heron), *Threskiornis melanocephalus* (Black-headed ibis), *Dendrocygna javanica* (Lesser whistling-duck), *Phalacrocorax niger* (Little

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

cormorant), *Actitis hypoleucos* (Common sandpiper), *Charadrius dubius* (Little ring plover), *Chlidonias hybrida* (Whiskered tern), *Chroicocephalus brunnicephalus* (Brown-headed gull), *Numenius arquata* (Eurasian curlew), and *Halcyon smyrnensis* (White-throated kingfisher) were identified as common species inhabiting the study area, especially the intertidal zone, mud flats and mangroves. Their populations are not large. No IUCN Red list species were found. Mass nesting of particular species was not observed in the study area. Further study to determine species abundance will be conducted in EIA baseline study.

Migratory birds

Actitis hypoleucos (Common sandpiper), *Charadrius dubius* (Little ring plover), *Numenius arquata* (Eurasian curlew), (See Photo Plate 4-4), *Chroicocephalus brunnicephalus* (Brown-headed gull) and *Milvus migrans* (Black ear kite) were recorded as migratory species. Population is not abundant. These species are protected by Conservation of Biodiversity and Protected Areas Law (2018).

Sterna albifrons (Little tern) and *Sula leucogaster ssp. plotus* (Brown booby), are reported to have breeding colonies in Myanmar. Potentially, the shallow coastal waters and mangrove forests near and within the Project area provide suitable nesting habitat for these species. No Important Bird and Biodiversity Areas are reported in this area. The distribution range of one IUCN-listed threatened seabird species, the *Fregata andrewsi* (Christmas Island frigatebird) which is critically endangered extends as far as southern Myanmar waters.



Photo plate 4-4: Some recorded photos of animals (birds, dolphin and bat) in and surrounding area of the Project site

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

4.5.2.5 Entomological Insects:

Butterfly – *Danaus genutia* (Common tiger), *Neptis hylas* (Common sailor) and *Papilio polytes* (Common mormon) were recorded as common species in the study area.

Dragonfly – *Crocothemis servilia* (Ruddy marsh skimmer), *Gomphus vulgatissimus* (Common clubtail) and *Diplacodes trivialis* (Ground skimmer) were recorded as common species in the study area.

4.5.3 Marine Fauna

4.5.3.1 Mammals

Three species of marine mammals from different families and genera were locally reported near the Project area, including the IUCN Red List species *Orcaella brevirostris* (Ayeyarwady dolphin), *Neophocaena phocaenoides* (Indo-Pacific finless porpoise) and *Sousa chinensis* (Indo-Pacific humpback dolphin). Local fishermen advised that three populations of dolphin (locally known as “Lin Shu”) consisting of two (2) to five (5) in each group are frequently found along Thansit River and Ku La Bar Strait. Two Ayeyarwady dolphins were recorded near the Project area while three of this species were also recorded out of Project area. These three species are protected by Conservation of Biodiversity and Protected Areas Law (2018).

Dugong dugon (Dugong) was not reported within the Project area but Manaung Island is reported to have the highest dugong population in Myanmar (Ilangakoon and Tun 2007).

4.5.3.2 Turtles/sea turtles

Marine turtles are migratory species and most of them are listed by IUCN as endangered (EN) and critically endangered (CR) species. They migrate between foraging and nesting grounds seasonally to warm waters. In the Project area, *Eretmochelys imbricata* (Hawksbill), *Chelonia mydas* (Green turtle) and *Lepidochelys olivacea* (Olive Ridley turtle) were reported, and detailed in Table 4-7: IUCN Listed Marine Turtles Near Project Area, and there are sometimes incidental catch in stow nets and gill nets.

The whereabouts of their naturally elusive nesting sites are hardly known. No nesting sites were presumably found within the Project area. However, out of the Project site, some secluded beaches in the north west and southern shore areas of Yanbye Island and a small island to north-west of the Project called Goat Island, are believed to be turtle nesting sites. Marine mammal sightings and turtle nesting sites in the Project area are mentioned in Figure 4-35.

These beaches are known to have nesting populations of five species of turtles, including the endangered hawksbill, green, and loggerhead sea turtles. Those sea turtle species are completely protected by Conservation of Biodiversity and Protected Areas Law (2018).

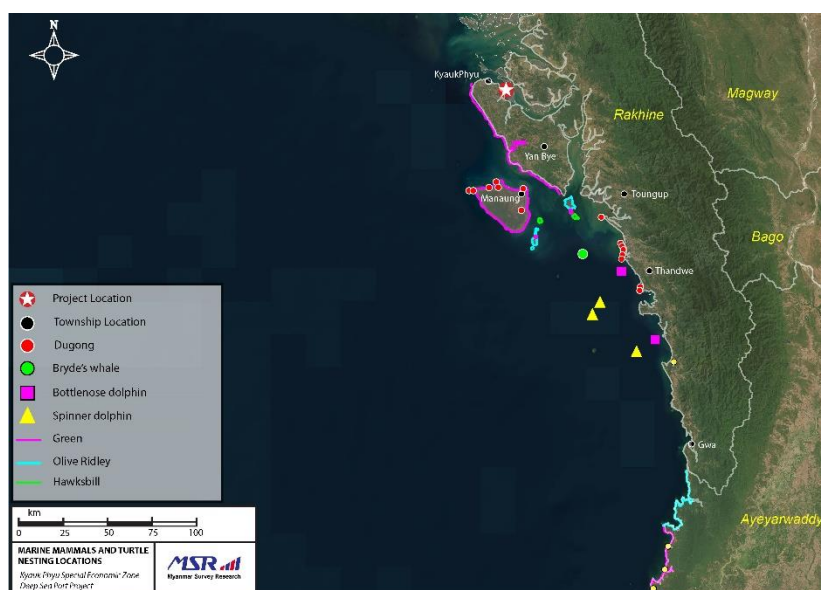


Figure 4-35: Marine Mammal Sightings and Turtle Nesting Sites in the Project Area

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Table 4-7: IUCN Listed Marine Turtles Near Project Area

Latin Name	Common Name	Myanmar Name	IUCN 2019 Status	Diet
<i>Lepidochely olivacea</i>	Olive Ridley turtle	Leik Lyaung	EN	Omnivore, eating a variety of animals including crabs, fish, shrimp, jellies, seaweed, and seagrass.
<i>Caretta caretta</i>	Loggerhead turtle	Leik Khway	EN	Carnivore, eating crabs, conchs, whelks and horseshoe crabs. rarely seaweed and seagrass
<i>Chelonia mydas</i>	Green turtle	Pyin Tha Leik	VU	Herbivore, eating primarily seagrass, and seaweed (rarely omnivorous)
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Leik Kyet Tu Yway	CR	Omnivore, eating mostly clams and sponges, seagrass and seaweed
<i>Dermochelys coriacea</i>	Leather-back turtle	Leik Zaung Lyar	EN	Omnivore, eating soft-bodied invertebrates (i.e., jellies), seaweed and seagrass

4.6 Marine Environment

4.6.1 Seagrass and Seaweed

Seagrasses are submerged flowering plants found in shallow marine waters (<20m), such as bays and lagoons and along the continental shelves intermingling with mangrove and reed communities. They are a vital part of the marine ecosystem due to their productivity level, provision of food, habitat, and nursery areas for demersal fish and invertebrate species (Pe, 2004). Seagrass offer additional ecosystem services by stabilizing sediments and preventing erosion. Seagrasses are also very sensitive to water quality and can serve as indicators of the overall health of the ecosystem. Figure 4-36 provides an overview of seagrass habitat distribution in the local Project area.

Little information is available on the status of seagrass resources in Myanmar. In a 2001 study conducted by Soe Htun et al., nine (9) species of seagrass were identified within the marine waters of Myanmar. In the Rakhine Coastal Region, seagrasses from the family Hydrocharitaceae and Cymodoceaceae are known to occur (Soe Htun et al. 2001).

In Manaung Islands, five (5) species of seagrasses viz. *Syringodium isoetifolium*, *Cymodocea serrulata*, *C. rotundata*, *Halodule uninervis*, and *H. pinifolia* were reported by Wildlife Conservation Society (WCS) in 2019. Unfortunately, there is no evidence (neither live nor drift specimens) of seagrass meadows were recorded during the scoping survey around the Project footprint area, although global data set (UNEP-WCMC, Short, 2021) described there is a huge area of seagrass at the inner areas of Yanbye Island (Figure 4-36). The detailed study of seagrass would be carried out for the other seasons (pre-monsoon and post-monsoon) to ensure the absence of seagrasses is confirmed.

The UN Environmental Programme World Conservation Monitoring Center (UNEP-WCMC) has noted that the sheltered near-shore water around Made and Yanbye Islands provides suitable conditions for seagrass habitat including a red listed *Halophila beccarii* species (Soe-Htun et al., 2001). These seagrass beds may serve as nurseries and habitats for fish and invertebrates, but may also provide a food source for grazing animals including species of turtles and dugongs. Within this report it was noted that only seagrass of euryhaline species, which are able to tolerate the wide range of salinity fluctuations, are supported in some areas of the Rakhine coast.

Seaweeds provide home and food for many different sea animals and are a valuable food source for many communities in Myanmar. Together with phytoplankton, seaweeds form the basis of the food chain in the sea. Seaweeds are also vital as a habitat for a number of marine organisms. Factors affecting the distribution of seaweeds are sunlight, temperature, salinity, substrate, water movement and

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

depth. Most seaweeds need a firm substrate for growth and typically found within stable rocky shores with extensive shallows and tidal-pools.

Data on the distribution and quantity of seaweed along the coast of Yanbye island is very limited. Previous studies have noted the presence of 122 genera and 307 species of seaweeds in Myanmar coastal waters (Soe-Htun Win 1998). The report noted that only seagrass of euryhaline species, such as *Halophila stipulacea*, which are able to tolerate the wide range of salinity fluctuations, grow in areas of Rakhine coast.

Some species of seaweed from *Catenella* genus and seaweeds like *Gracilaria Changii* attach to sunken parts of mangrove trees, nets, ropes and buoys of submerged fishing paraphernalia. On rocky shores, *Padina* sp., *Ulva* sp. and *Hypnea* sp. were found in the Project's vicinity during the scoping survey. Among them, *Hypnea* sp. is one of major ingredients in Rakhine's daily diet.

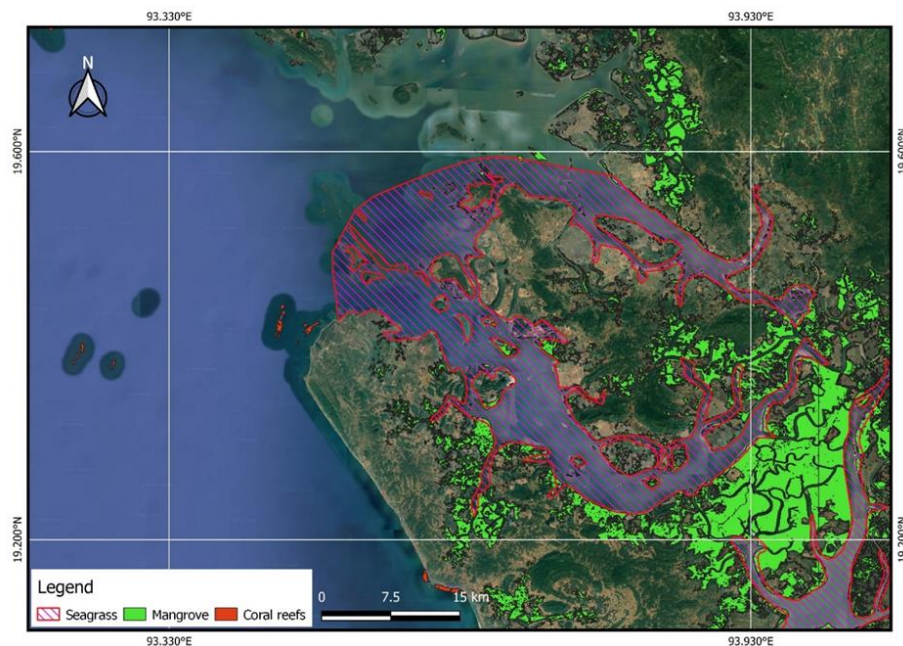


Figure 4-36: Seagrass Habitat in the Project Area (UNEP-WCMC, Short, 2021)

4.6.2 Benthos, Mollusks and Gastropods

Coastal mudflat typically contains benthic organisms, microalgae and potentially some seagrass in low abundance. 10 species of benthos were found during scoping survey in the Project vicinity, and are described as follows.

[*Lumbrineris* sp., *Marphysa* sp., *Nemertines* sp., *Nereis* sp., *Notomastus* sp., *Platyhelminthes fauveli*, *Polychaete* sp., *Syllis* sp., Tube worms and Tunicate]

During the scoping survey, mollusks and gastropods samples were randomly collected. The recorded species (13 species) from different families and genera are described as follows.

[*Cerithium lividulum*, *Clypeomorus batillariaeformis*, *Pirenella alata*, *Terebra* sp., *Telescopium telescopium*, *Volegalea cochlidium*, *Indothais lacera*, *Cypraea arabica*, *Gafrarium divaricatu*, *Nerita balteata*, and *Atrina vexillum*]

Benthic organisms: worms are described in Photo Plate 4-5 and mollusca is described in Photo Plate 4-6.

Macrofauna, including fish eggs play important roles in ecosystem functioning. They support part of the food web, providing food to secondary consumers (mainly invertebrates and juvenile vertebrates). Macrofauna activity impacts on global carbon, nitrogen and sulphur cycling, transport, burial and metabolism of pollutants, bio-deposition and transport of sediments (Snelgrove 1997). In addition, due to their sedentary behaviour and a wide range of physiological tolerances, they are used as indicators of environmental quality.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Macrofauna also form part of invasive and fouling organisms. Invasive species have the ability to prey on other species if introduced to a new environment where they never existed in pristine conditions. As a result, they can find their way into ballast water and cause problems elsewhere. Fouling organisms cause corrosion of marine structures and vessels which has implications for economic losses.

Other benthic habitats within the Project area include of muddy shores, and rocky outcrops. These areas provide a suitable environment for benthic invertebrates such as prawns, mud crab and shrimp that are very important commercial species to the local fisheries community. The Project is not expected to impact important crab and lobster areas identified by local stakeholders as occurring in fishing ground blocks A9 and A10. The Project has higher potential to cause adverse effects to fishery resources in fishing ground block A5. An assessment of adverse effects to corals, crustaceans and the benthic environment will be undertaken during the EIA process and mitigation measures will be proposed to minimize effects.



Photo plate 4-5: Benthic organisms: Worms; A) *Prionospio* sp., B) *Nereis* larva, C) *Nereis* sp., D) *Sternaspis sendalli*, E) Tube worm, F) *Syllid* sp., G) *Polychaete* larva, H) *Merphysa* sp., I) *Notomastus* sp., J) *Nematines* sp. and K) Bamboo worm

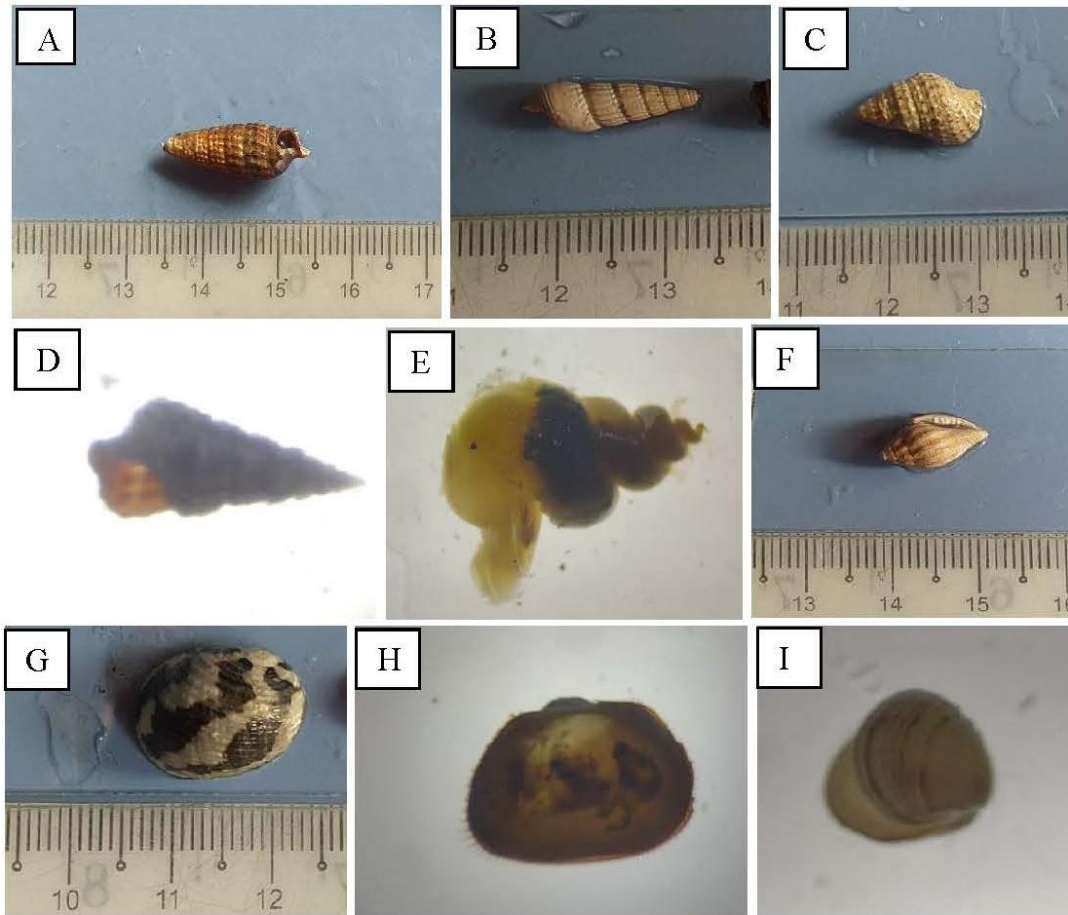


Photo plate 4-6: Benthic organisms: Mollusca; A) *Cerithium liviculum*., B) *Cerithidea* sp., C) *Cerithium Alutaceam*, D) *Telescopium telescopium*, E) *Gastropod* larva, F) *Littolaria* sp., G) *Nerita funiculata*, H) *Barbatia* sp. and I) *Ruditape* sp

4.6.3 Coral Reefs

Coral reefs in Myanmar remain largely unexplored and the species diversity and health of this ecosystem is poorly known. An extrapolation of potential habitat area of coral reefs is suggested to be 187,000 ha (BOBLME, 2012). Myanmar coral reefs have declined by over 56 % (International Coral Reef Initiative (ICRI), 2021).

The Rakhine coastal areas provide an environment that is suitable for both hard and soft fringing coral reefs which provide habitat for range restricted species such as grouper and snapper. For reef associated species such as this, coral provides both spawning and feeding habitat. Preliminary coral surveys in the Rakhine coastal zone were conducted in 2000 by the Department of Fisheries (Zau Lunn, 2012). The surveys recorded 51 species of coral in the Rakhine coastal zone. There are unconfirmed data that a large area of submerged reef exists in the near-shore water area of Yanbye Island, although no information was located in publicly available data.

There is limited information available on the occurrence and distribution of coral reefs along the coastal areas of Yanbye Island. According to the scoping survey, 24 species of coral varieties (patchy reef type) were recorded in the eastern part of Goat Island which is close to the traffic channel (navigation). Global coral reefs data set also show the distribution of coral reefs in this area. Coral reefs can be found at seashore in Thit Poke Taung Village and surrounding area for about 4.5 km to the north and around Goat Island as far as about 26 km to the north west of the Project site (but, these habitats are have been somewhat damaged due to fishing pressure). Some dead coral fragments or skeletons which is evidence of coral reefs persistent in the past, were also recorded along the rocky shore of Thit Poke Taung village. This village is situated between the eastern part of Yanbye Island and north-western part

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

of Made Island, very close to the core zone of the Project (terminal areas). The status of IUCN red listed was described in Table 4-8.

[During the scoping survey, the following list of coral species is found in Goat Island: *Acropora digitifera*, *Cyphastrea microphthalma*, *Favia fragum*, *Favia lacuna*, *Favia* sp., *Favites acuticollis*, *Favites halicora*, *Favites* sp., *Goniastrea equisepta*, *Goniastrea minuta*, *Goniastrea retiformis*, *Goniopora* sp., *Gorgonia* sp., *Montastrea cavernosa*, *Montastrea serageldini*, *Pavona frondifera*, *Pavona cactus*, *Pavona decussata*, *Platygyra sinensis*, *Platygyra* sp., *Pocillopora* sp., *Polycyathus* sp., *Porites* sp. and *Psammocora* sp. (Photo Plate 4-7)]. Coral reefs near the Project area are depicted in Figure 4-37.

Table 4-8: IUCN red listed status of coral reefs in Goat Island.

No.	Scientific Name	IUCN Red list
1.	<i>Acropora digitifera</i>	Near Threaten (NT)
2.	<i>Favia lacuna</i>	Near Threaten (NT)
3.	<i>Favites acuticollis</i>	Near Threaten (NT)
4.	<i>Favites halicora</i>	Near Threaten (NT)
5.	<i>Goniastrea minuta</i>	Near Threaten (NT)
6.	<i>Paramontastraea serageldini</i>	Vulnerable (VU)
7.	<i>Pavona cactus</i>	Vulnerable (VU)
8.	<i>Pavona decussata</i>	Vulnerable (VU)



Figure 4-37: Coral Reefs in the Project Area

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

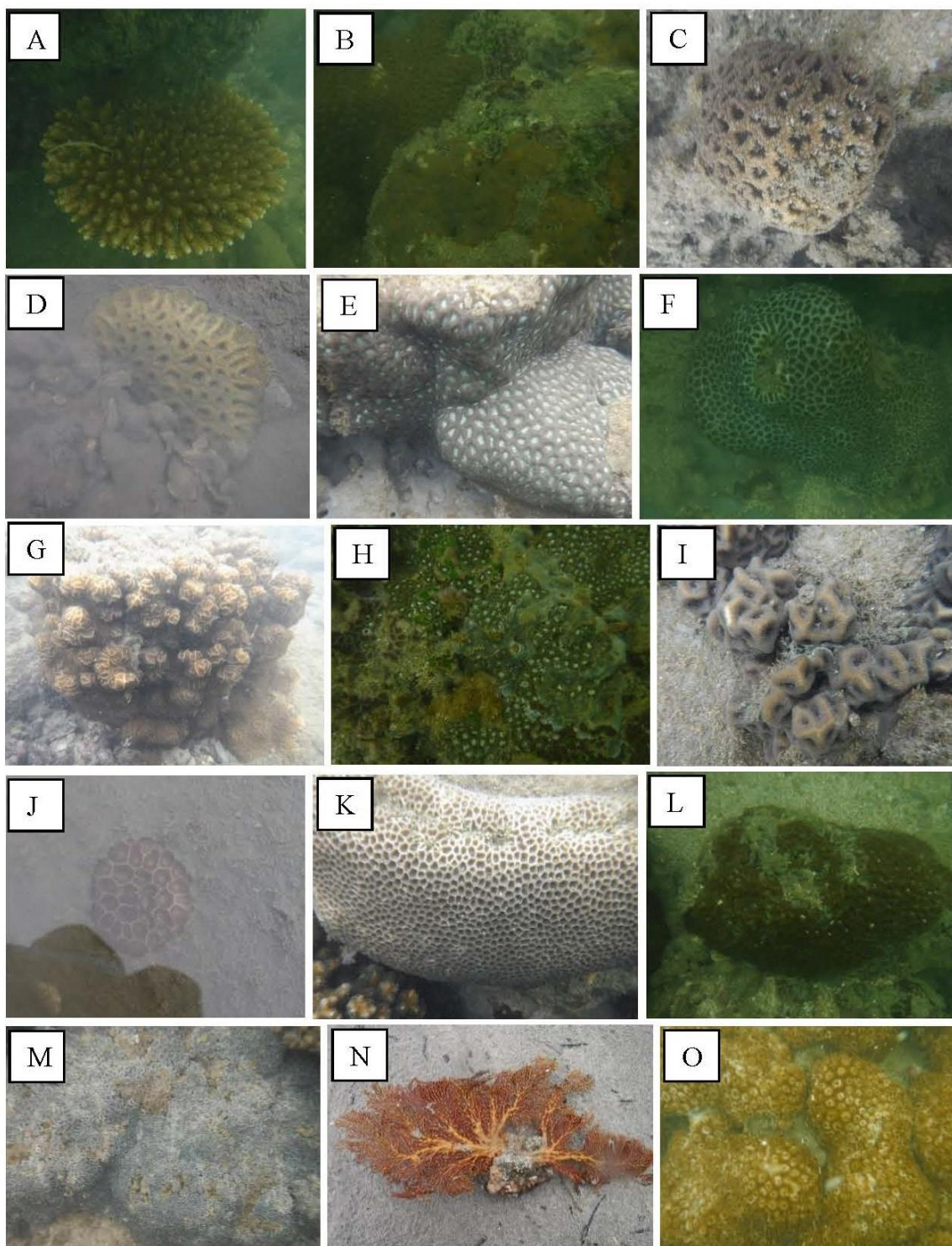


Photo plate 4-7: Photo of Coral; A) *Acropora digitifera*, B) *Cyphastrea microphthalma*, C) *Favia Fragam*, D) *Favia lacuna*, E) *Favia* sp., F) *Favites acuticollis*, G) *Favites halicora*, H) *Favites* sp. 1, I) *Favites* sp. 2, J) *Goniastrea equisepta*, K) *Goniastrea minuta*, L) *Goniastrea retiformis*, M) *Gonipora* sp., N) *Gorgonia* sp. and O) *Montastrea cavernosa*

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

4.6.4 Plankton

Ninety-seven species of phytoplankton were observed in the Rakhine Coastal Region. Among them, 13 species were the most abundance ($327,443 \text{ cell/m}^3$) species namely, *Skeletonema costatum*, *Cerataulina bergonii*, *Pleurosigma normanii*, *P. elongatum*, *Palaria sulcata*, *Thalassionema frauenfeldii*, *T. nitzschioides*, *Odontella sinensis*, *Guinardia striata*, *Proboscia alata*, *Rhizosolenia calcar-avis*, *Hemidiscus cuneiformis*, and *Bacillaria paxillifer*. Seasonal changes affect the distribution and abundance of phytoplankton assemblages. Moreover, the species composition and population density of phytoplankton are highly sensitive to environmental changes.

[Species occurrence of phytoplankton in the Project and adjacent coastal water were described as follows; *Amphora spectabilis*, *Asteromphalus cleveanus*, *Azpeitia nodulifera*, *Tripodiscus argus*, *Bacteriastrium hyalinum*, *B. varians*, *Bacillaria paradoxa*, *Biddulphia rhombus*, *Campylodiscus* sp., *Cerataulina bergonii*, *Ceratium fusus*, *C. furca*, *C. dens*, *C. macroceros*, *Chaetoceros decipiens*, *C. curvisetus*, *C. lorenzianum*, *C. laevis*, *C. costatum*, *C. peruvianus*, *C. subtalis*, *Coscinodiscus radiatus*, *C. granii*, *C. marginatus*, *Cyclotella striata*, *Cylindrotheca closterium*, *Dinophysis caudata*, *D. miles*, *Ditylum sol*, *D. brightwellii*, *Dictyocha fibula*, *Diploneis interrupta*, *Diploneis* sp., *D. chersonen*, *Entomoneis alata*, *Eucampia cornuta*, *E. zodiacus*, *Guinardia striata*, *G. strigilis*, *Gyrosigma* sp., *Gonyaulax digitalis*, *G. verior*, *Gonyaulax* sp., *Helicotheca tamensis*, *Hemiaulus sinensis*, *H. indicus*, *Hemidiscus cuneiformis*, *Lauderia annulata*, *Melosira nummuloides*, *Meuniera membranacea*, *Minidiscus trioculatus*, *Metadinophysis sinensis*, *Neoceratium tripos*, *Nitzschia longissimi*, *N. sigma*, *N. angularis*, *N. frigida*, *N. filliformis*, *Navicula advena*, *N. aspera*, *Odotella mobiliensis*, *O. sinensis*, *O. aurita*, *Palaria sulcata*, *Pleurosigma normanii*, *P. angulatum*, *P. elongatum*, *P. pelagicum*, *Pseudonitzschia seriata*, *P. lineola*, *Pseudonitzschia* sp., *Prorocentrum micans*, *P. sigmoides*, *Proboscia alata*, *Protoperidinium oceanicum*, *P. divaricatum*, *P. conicum*, *Protoperidinium* sp., *Pyrophacus holrogium*, *Pyrophacus* sp., *Rhizosolenia calcar-avis*, *R. setigera*, *R. imbricate*, *R. robusta*, *Schroderella delicatula*, *Skeletonema costatum*, *Skeletonema* sp., *Surirella gemma*, *Synedra crystallina*, *Thalassionema frauenfeldii*, *T. nitzschioides*, *Thalassiosira excentrica*, *T. leptopus*, *T. puntigera* and *Triceratium favus*.] Some phytoplankton are described in Photo Plate 4-8.

A total of 186 species of zooplankton from various families and genera were found, with their abundance ranging from $2,544 \text{ no/m}^3$ to $13,470 \text{ no/m}^3$ recorded during the scoping survey. According to Shannon's species diversity index (H') (4.52 - 4.83), the species richness index (D') (4.52 - 4.83) and the evenness index (E') (0.97 - 0.99), coastal water is highly productive and rich in zooplankton diversity.

[Species composition of zooplankton were *Stauridiosarsia* sp., *Corymorpha bigelowi*, *Aglaura hemistoma*, *Liriope tetraphylla*, *Cunina octonaria*, *Solmaris rhodloma*, *Solmundella bitentaculata*, *Abylopsis* sp., *Diphyes chamissonis*, *Lensia* sp.1, *Arachnactis* larva, *Syllis polychaete*, *Rhynchonereella* sp., *Glycera* sp., *Sagitella kowalewskii*, *Alciopina parasitica*, *Rhynchonereella moebii*, *Vanadis crystallina*, *Tomopteris elegans*, *T. dunckeri*, *T. pacifica*, *Nereis* sp., *Serpula* sp., *Flaccisagitta enflata*, *F. lyra*, *F. fero*, *F. robusta*, *F. neglecta*, *F. bipunctata*, *F. bedoti*, *Atlanta* sp. 1, *Atlanta* sp.2, *Atlanta* sp. 3, *Cresis virgula*, *C. chierchia*, *Eucilo* sp., *Styliola* sp., *Limacina* sp., *Desmopterus papilio*, *Janthina janthina*, Bivalve larva, Octopoda larva, Bipinnaria larva 1 of starfish, Auricularia larva, Ophiopluteus larva 1 of brittle star, Echinopluteus larva, *Evadne nordmanni*, *E. tergestina*, *Penilia avirostris*, *Euconchoecia aculeate*, *Conchoecia elegans*, *Cypridina noctiluca*, *C. sinuosa*, *Cypridinodes asymmetrica*, *Nanocalanus minor*, *Canthocalanus pauper*, *Undinula vulgaris*, *Acrocalanus gibber*, *A. longicornis*, *A. gracilis*, *A. similis*, *A. inermis*, *Paracalanus parvus*, *P. aculeatus*, *P. dubia*, *P. crassiostris*, *Eucalanus crassus*, *E. subcrassus*, *E. monachus*, *E. attenuatus*, *Calocalanus pavo*, *Clausocalanus arcuicornis*, *Euchaeta concinna*, *Scolecithrix danae*, *S. bradyi*, *Centropages furcatus*, *C. yamadi*, *C. orsinii*, *C. tenuirenis*, *C. elongatus*, *C. dorsipinatus*, *Lucicutia flavicornis*, *L. ovalis*, *Metacalanus aurivilli*, *Pseudodiaptomus aurivilli*, *P. mertonii*, *Candacia bradyi*, *C. catula*, *C. discaudata*, *Acartia erythraea*, *A. spinicauda*, *A. pacifica*, *A. negligens*, *A. danae*, *Calanopia elliptica*, *C. aurivilli*, *C. minor*, *C. thompsoni*, *Labidocera acuta*, *L. pectinate*, *L. minuta*, *L. pavo*, *L. kroyeri*, *L. euchaeta*, *Pontellina plumate*, *Pontella danae*, *P. spinipes*, *Tortanus forcepatus*, *T. barbatus*, *Temora turbinata*, *T. discaudata*, *T. stylifera*, *Oithona nana*, *O. attenuate*, *O. similis*, *O. spirostris*, *O. rigida*, *O. plumifera*, *O. brevicornis*, *Oncaea venusta*, *O. clevei*, *Corycaeus speciosus*, *C. latus*, *C. andrewsi*, *C. catus*, *C. asiaticus*, *Farranula gibbula*, *Sapphirina nigromaculata*, *S. ovatolanceolata*, *S. stellata*, *S. angusta*, *Copilia mirabilis*, *Microsetella norvegica*, *M. rosea*, *Macrosetella gracilis*, *Euterpina acutifrons*, *Clytemnestra rostrata*, *C. scutellate*, *Tigriopus fulvus*, *Hyperia macrocephala*, *Hyperia* sp.1, *Tulbergella* sp., *Phronimopsis* sp., *Phronima colletti*, *Phronimella elongata*, *Vibilia australis*, *Vibilia propinqua*, *Oxycephalus* sp., Larvae of Caridean, Post larvae of

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Penaeid, *Euphausia* larvae, *Euphausia* adult, *Stylocheiron* sp., *Gastrosaccus* sp.1., *Neomysis* sp.1, *Neomysis* sp.2, *Rhopalophthalmus* sp., *Erichthus* larvae, *Alima* larva, *Penaeid* larvae, *Penaeid* mysis, *Lucifer* protozoa, *Lucifer* mysis, *Lucifer* raynaudii, *L. penicillifer*, *Caridean* larvae, *Phyllosoma* larvae, *Porcellanid* larvae, *Brachyuran* zoea, *Brachyuran* megalopa, *Lysmata* sp (Caridea zoea), *Acetes* *indicus*, *A. japonicus*, *A. sibogae*, Larvae of *sergestes*, *Oikopleura* *cophocerca*, *O. dioica*, *O. fusiformis*, *O. longicauda*, *O. parva*, *Fritillaria borealis*, *Salpa* *fusiformis*, *Doliolum* sp.1, *Doliolum* sp.2, Fish eggs and Fish larvae.]

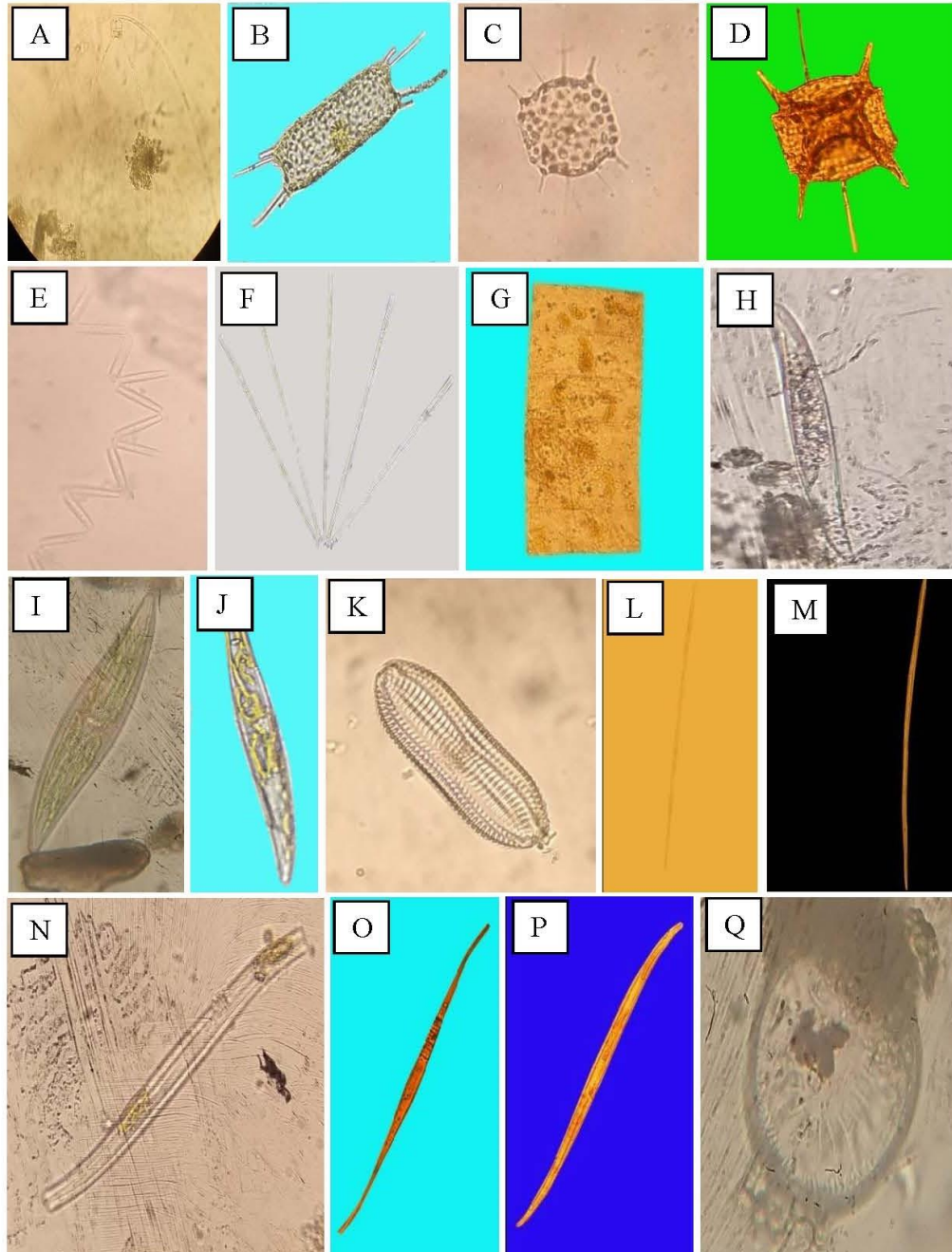


Photo plate 4-8: Photograph of Phytoplankton; A) *Chaetoceros peruvianum*, B) *Odontella sinensis*, C) *O. mobiliensis*, D) *Biddulphia rhombus*, E) *Thalassionema nitzschioides*, F) *T. Frauenfeldii*, G) *Meuniera membranacea*, H) *Gyrosigma* sp. I) *Pleurosigma normanii*, J) *P. Elongatum*, K) *Diploneis* sp., L) *Pseudo-nitzschia seriata*, M) *P. Lineola*, N) *Nitzschia filiformis*, O) *N. Longissima*, P) *N. sigma* and Q) *Campylodiscus hibernicus*

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

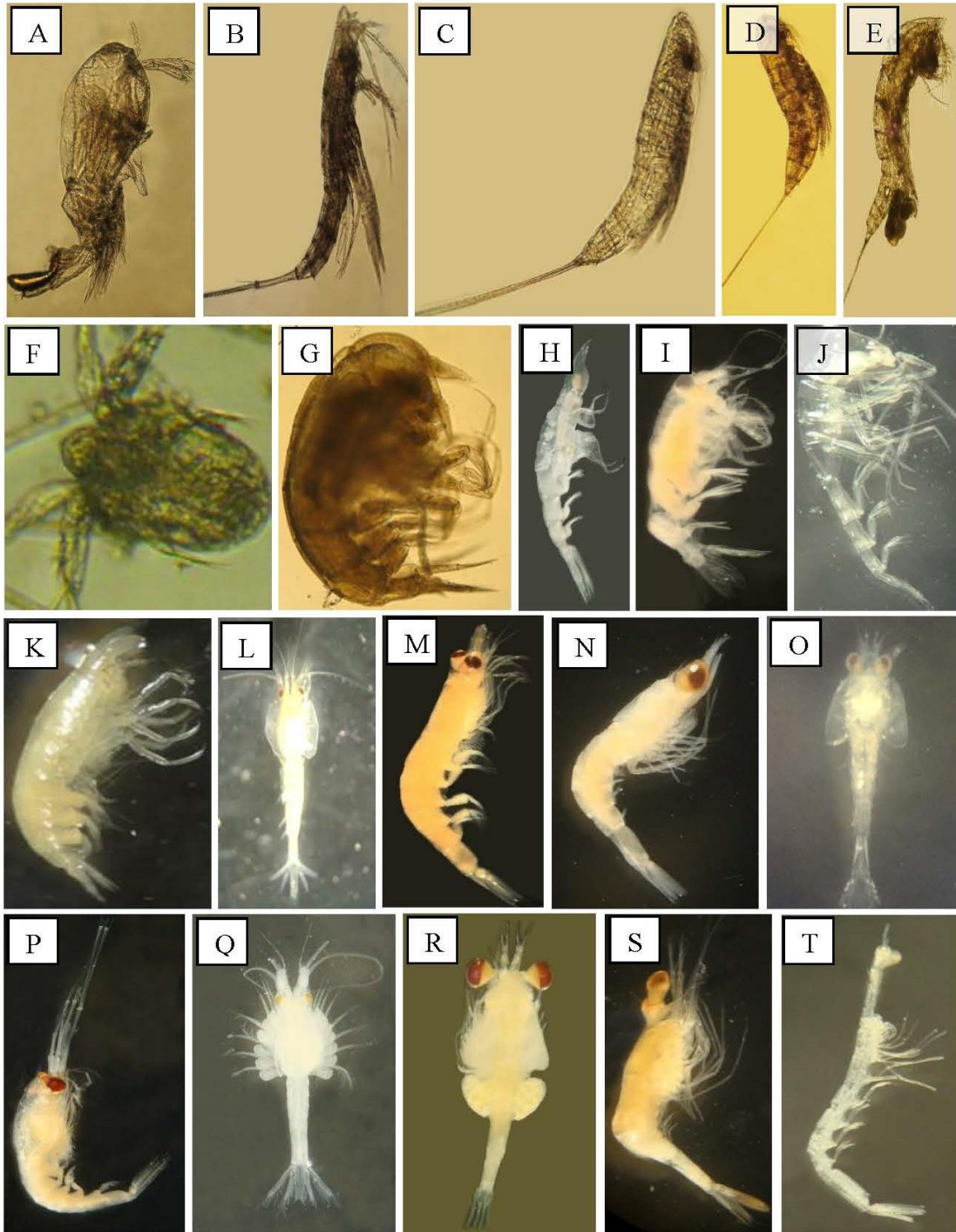


Photo plate 4-9: Photograph of zooplankton; A) *Farranula gibbula*, B) *Microsetella norvegica*, C) *M. rosea*, D) *Macrosetella gracilis*, E) *Euterpina acutifrons*, F) *Copepod nupllis*, G) *Hyperia macrocephala*, H) *Tulbergella* sp., I) *Phronimopsis* sp., J) *Phronimella elongata*, K) *Vibilia propinqua*, L) Larvae of *caridean*, M) Post larvae of *penaeid*, N) *Euphausia* larvae, O) *Euphausia* adult, P) *Stylocheiron* sp., Q) *Neomysis* sp.1., R) *Neomysis* sp.2., S) *Penaeid* larvae, and T) *Lucifer nauaudii*

4.6.5 Marine Fish

Fishing is a key commercial activity in the Kyauk Phyu region and is one of the major fish landing centres. The port and navigation channel are in the vicinity of where fishing is a main activity (all year round) and provides the main income for the indigenous peoples. They use small fishing vessels propelled with engines and artisanal fishing equipment such as drift nets and gill nets.

104 species of bony fishes, two (2) species of sharks and seven (7) species of rays were recorded during the scoping survey in Kyauk Phyu and adjacent coastal waters. Among them, the following species are commercially important in Myanmar; *Tenulosa ilisha* (Nga-tha-lauk), *Hilsa kelee* (Nga-tha-lauk-yauk-pha), *Lates calcarifer* (Ka-ka-tit), *Sardinella albella* (Nga-kone-nyo), *Stolephorus commersonnii* (Nga-ni-tuu), *Plotosus canius* (Pin-lae-nga-khuu), *Epinephelus* sp. (Kyauk-ngar), *Eleutheronema tetradactylum* (Nga-ta-yaw), *Johnius dussumieri* (Nga-pote-thin) and *Scomberomorus guttatus* (Nga-kunn-shat).

Some other bony fishes, *Acanthurus mata* (Khar-shay-nga-yan-shar), *Alectis ciliaris* (Su-shay-ka-langu), *Coryphaena equiselis* (La-paing-nga), *Toxotes microlepis* (Nga-saut) are rare species in Myanmar. *Leptomelanosoma indicum* also known as Indian threadfin (Nga-let-khwa) is a valued delicacy much wanted commercially.

It is ranked as NE (Not Evaluated) by IUCN red listed status. The Indian threadfin occurs in muddy and sandy substrates on the continental shelf, especially in the vicinity of estuaries and is known to enter rivers. It is carnivorous (prawns, crabs and small fishes). Generally, they spawn in two main periods, April to June (1st peak) and October to November (2nd peak). Spawning areas are supposed to be inshore waters and estuaries close to sea.

Scoliodon laticaudus (Spade nose shark) and ray fishes; *Brevitrygon heterura* and *Brevitrygon imbricata* were commonly recorded during the scoping survey. IUCN red listed status of fishes, sharks and rays were described in Tables (4-9 and 4-10).

[Diverse types of fish occurrences during scoping survey viz. *Acanthurus mata*, *Ambassis dussumeri*, *Arius maculatus*, *Arius venosus*, *Osteogenensis militaris*, *Carangoides plagiotaenia*, *Carangoides chrysophys*, *Carangoides dinema*, *Megalaspis cordyla*, *Scomberoides commersonianus*, *Scomberoides tol*, *Uraspis helvola*, *Alectis ciliaris*, *Chirocentrus dorab*, *Tenulosa ilisha*, *Tenulosa macrura*, *Hilsa kelee*, *Ilisha elongata*, *Anodontostoma chacunda*, *Sardinella brachysoma*, *Sardinella abella*, *Ethmalosa fimbriata*, *Coryphaena equiselis*, *Cynoglossus cynoglossus*, *Cynoglossus arel*, *Cynoglossus macrolepidotus*, *Drepane punctata*, *Dussumieria acuta*, *Butis butis*, *Elops machnata*, *Stolephorus indicus*, *Stolephorus commersonnii*, *Thryssa dussumieri*, *Thryssa hamiltonii*, *Coilia borneensis*, *Gerres filamentosus*, *Gerres macracanthus*, *Gerres longirostris*, *Gerres erythrourus*, *Cryptocentrus cyanotaenia*, *Trypauchen pelaeos*, *Boleophthalmus boddarti*, *Pomadasys argyreus*, *Hyporhamphus limbatus*, *Kurtus indicus*, *Lates calcarifer*, *Leiognathus equulus*, *Leiognathus longispinis*, *Leiognathus oblongus*, *Karalla daura*, *Secutor hanedai*, *Aurigequula fasciata*, *Nuchequula gerreoides*, *Photopectoralis bindus*, *Gymnocranius griseus*, *Gymnocranius microdon*, *Lutjanus monostigma*, *Lutjanus johnii*, *Lutjanus ehrenbergii*, *Lutjanus russellii*, *Lutjanus lemniscatus*, *Pinjalo pinjalo*, *Monodactylus argenteus*, *Mugil cephalus*, *Crenimugil seheli*, *Osteomugil perusii*, *Valamugil speigleri*, *Upeneus sundaicus*, *Upeneus tragula*, *Mulloidichthys vanicolensis*, *Congresox talabonoides*, *Congresox talabon*, *Muraenesox bagio*, *Nemipterus hexodon*, *Scolopsis* sp., *Platycephalus indicus*, *Plotosus canius*, *Leptomelanosoma indicum*, *Eleutheronema tetradactylum*, *Scatophagus argus*, *Johnius belengarii*, *Johnius dussumieri*, *Otolithes ruber*, *Chrysochir aureus*, *Scomberomorus guttatus*, *Rastrelliger faughni*, *Gymnosarda unicolor*, *Epinephelus epistictus*, *Epinephelus heniochus*, *Epinephelus coeruleopunctatus*, *Epinephelus coioides*, *Cephalopholis boenak*, *Siganus javus*, *Siganus chrysopilos/punctatus*, *Sillago sihama*, *Sillago domina*, *Pardachirus pavoninus*, *Acanthopagrus berda*, *Pampus argenteus*, *Harpadon nehereus*, *Pelates quadrilineatus*, *Therapon theraps*, *Toxotes microlepis* and *Lepturacanthus savala*.] Some fishes can be seen in Photo Plate 4-10.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table 4-9: IUCN red listed status of marine fishes in Kyauk Phyu

No.	Scientific Name	IUCN Status
1.	<i>Harpadon nehereus</i>	Near Threatened (NT)
2.	<i>Tenualosa macrura</i>	Near Threatened (NT)
3.	<i>Polynemus indicus</i>	Not Evaluated (NE)

Note: However, warned internationally in the IUCN list, some of the items mentioned above have so far proved abundant and some items mentioned not concerned are in practice being critically exhausted vice versa. Therefore, scrutiny is needed in practical field when baseline or further survey is conducted.

Table 4-10: Sharks and rays (by-catch) found in Kyauk Phyu

No.	Scientific name	Local name	IUCN Status
1	<i>Scoliodon laticaudus</i>	Nga-mann	Near Threatened (NT)
2	<i>Chiloscyllium griseum</i>	Khway-nga-mann	Endangered (EN)
3	<i>Neotrygon khulii</i>	Nga-leik-kyauk	Endangered (EN)
4	<i>Maculabatis gerrardi</i>	Nga-leik-kyauk	Near Threatened (NT)
5	<i>Pateobatis uarnacoides</i>	Nga-leik-kyauk	Near Threatened (NT)
6	<i>Brevitrygon heterura</i>	Nga-leik-kyauk	Vulnerable (VU)
7	<i>Brevitrygon imbricata</i>	Nga-leik-kyauk	Vulnerable (VU)
8	<i>Hemistrygon akajei</i>	Nga-leik-kyauk	Vulnerable (VU)
9	<i>Aetobatus ocellatus</i>	Nga-leik-sun	Vulnerable (VU)

Marine fish in Rakhine coastal waters have been categorized into three types: pelagic species, demersal species and reef associated coastal species, which live in coral reefs or coastal areas.

Generally large schools of pelagic fish swim between feeding grounds and spawning areas/waters all year round. Species of fishes such as herring, anchovy and shad from the family Clupeidae and mackerel and tuna from the Scombridae family are pelagic and could potentially be present within the Project area. Pelagic fish such as anchovies are an important resource in communities living in the northern part of Rakhine State. Mackerel is a pelagic species with a distribution in the open waters off the coast of Yanbye Island; *Scomberomorus commerson* (Narrow barred spanish mackerel) is a listed species of concern.

Demersal species live in shallower waters and feed on benthic invertebrates and other organisms associated with the seabed. The seagrass beds, coral reefs and mangrove forests found off the coast of Yanbye Island provide suitable habitat for demersal species. Coral found in the Rakhine coastal areas provide suitable habitat for range restricted fishes such as grouper and snapper. *Epinephelus bleekeri* (Bleeker's groupers) an IUCN red listed species may be present in shallower waters near coral reefs in the vicinity of the Project area.

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

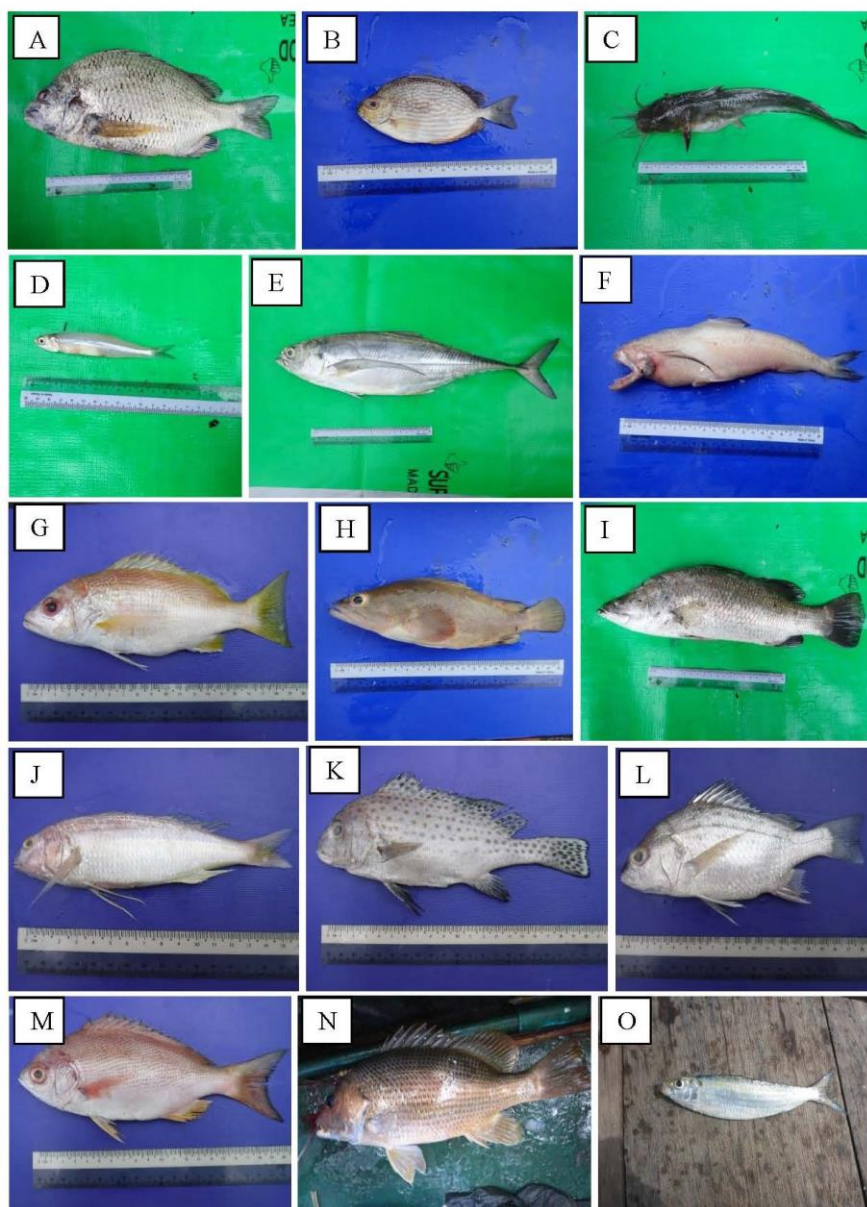


Photo plate 4-10: Photograph of fishes; A) *Acanthopagrus berda*, B) *Siganus javus*, C) *Clarias gariepinus*, D) *Stolephorus indicus*, E) *Megalaspis cordyla*, F) *Harpadon nehereus*, G) *Lutjanus madras*, H) *Epinephelus heniochus*, I) *Lates calcarifer*, J) *Nemipterus japonicas*, K) *Plectrohinchus* sp., L) *Pomadasyd olivaceus*, M) *Pinjalo pinjalo*, N) *Lutjanus argentimaculatus*, and O) *Sardinella gibbose*

Note: The general breeding season and grounds of respective marine and terrestrial animals both residents and migrants will be carefully looked into during the forthcoming survey.

4.6.6 Protected Areas and Ecoregions

The Project and its surrounding areas are located within the coastal mangrove ecoregion, where mangrove habitat was historically abundant within the intertidal zone, before clearing for agriculture. There are no marine or terrestrial areas protected under the Myanmar Biodiversity and Conservation of Protected Area Law (2018) in and buffer zone of the Project area. The closest Marine Protected Area, for sharks, is 860 km south-east of the Project site. There are no other legally protected areas close to the Project. (Figure 4-38).

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

The Wunbaik reserved mangrove forest area, 15 km from the Project to the east, is a designated Key Biodiversity Area as well as a most important mangrove forest. IFC, 2012 stated that now the forest of Wunbaik mangrove has significantly decreased as a result of firewood harvesting pressure. Another KBA, Manaung Island, rich in coral is inhabited by marine mammals and sea turtles is situated approximately 50 km south of the Project. WCS, 2013 reported that the surrounding waters of Manaung Island is designated as a medium priority key biodiversity area (KBA). These coral reefs play a large role in preserving the status of sea turtles and marine fauna as well. Moreover, Manaung Island is remarkable for a potential eco-tourism development area.

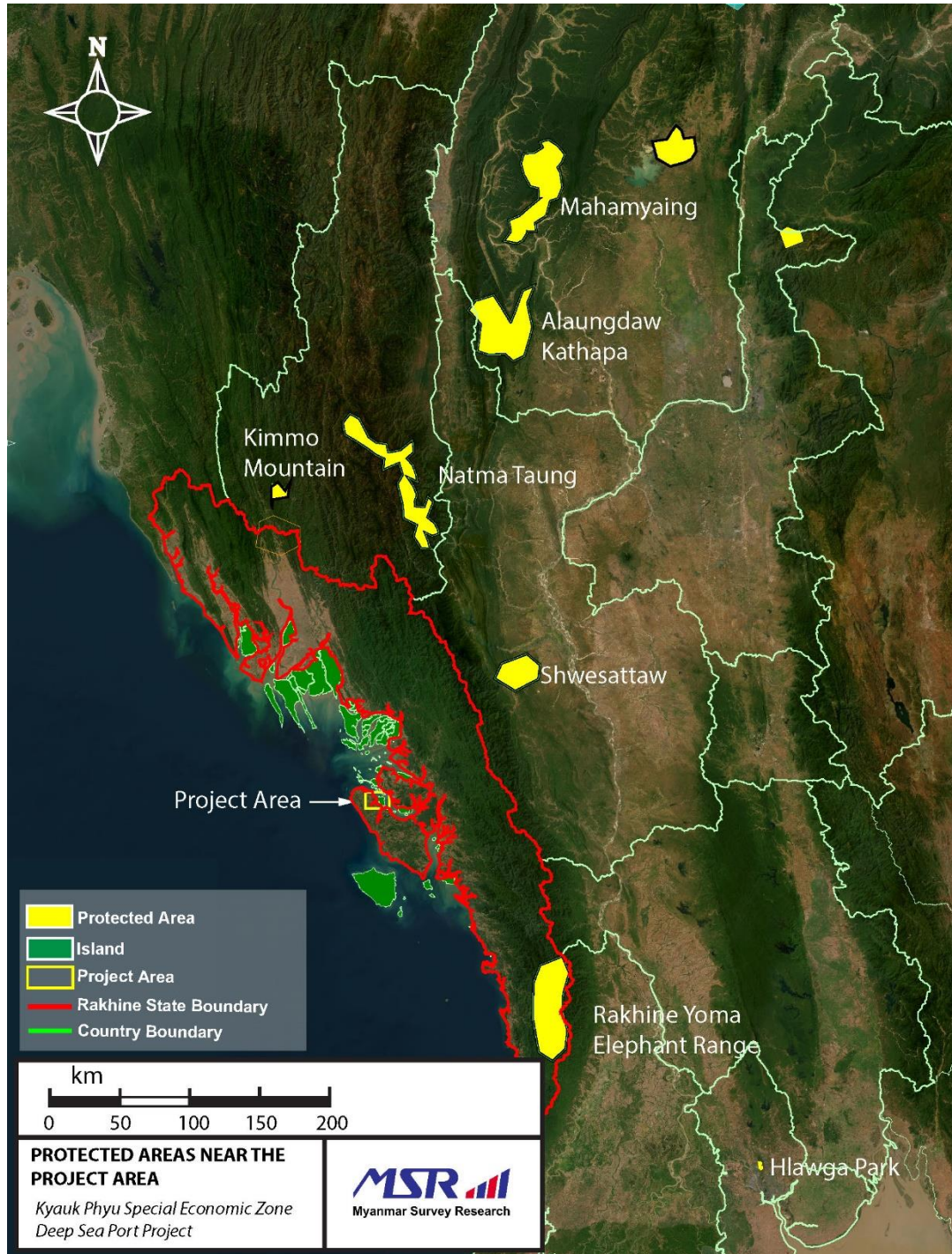


Figure 4-38: Protected Areas in the Project Area

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal)

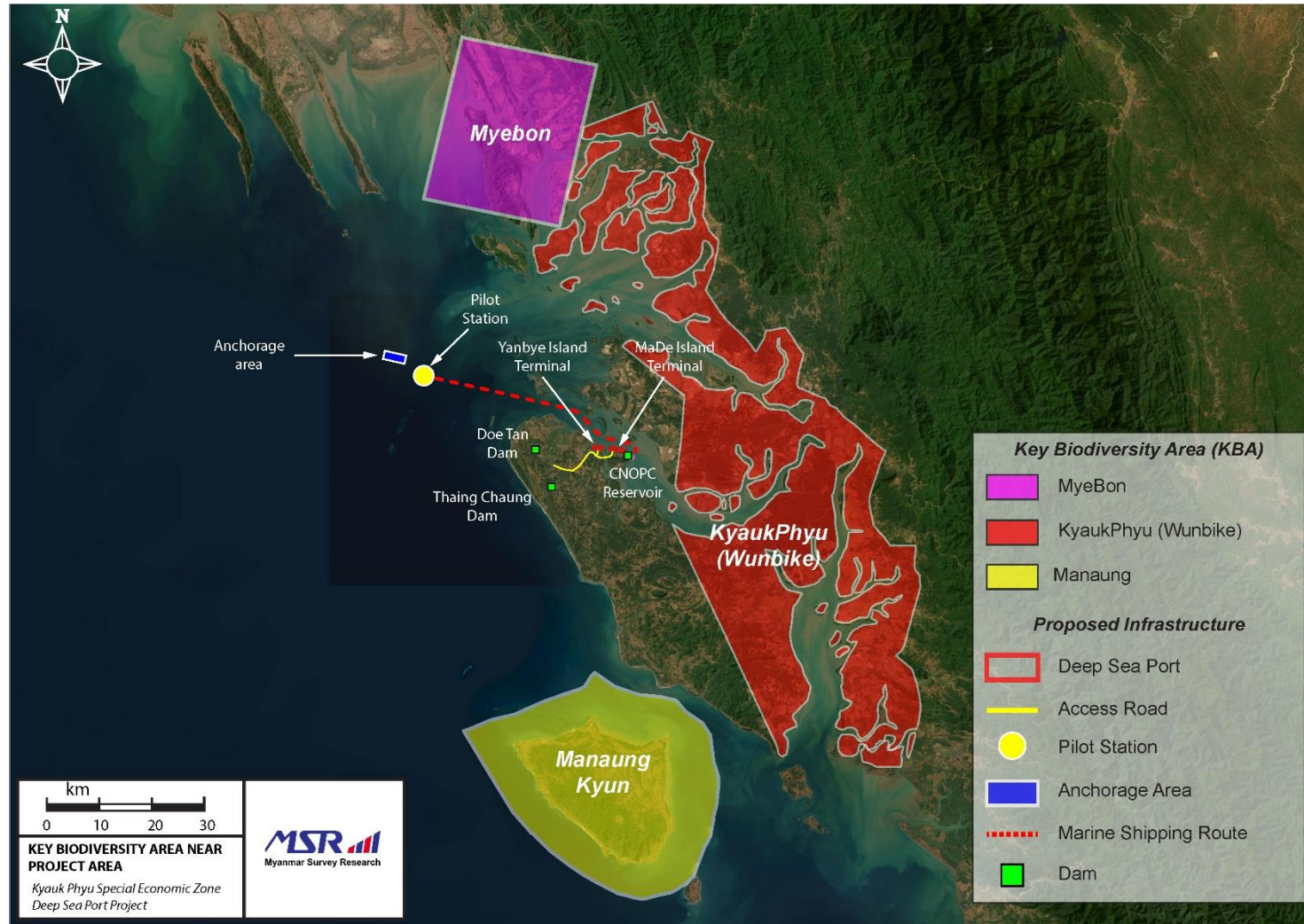


Figure 4-39: Key Biodiversity Areas in the Project Area

MSR CONSORTIUM



Independent Engineers

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.7 Social Environment

4.7.1 Overview: Rakhine State

Within Kyauk Phyu Township, Kyauk Phyu District, in Rakhine State is where proposed Project is to be implemented. Rakhine State is the western-most state of Myanmar, bordered by the Bay of Bengal to the west and Chin State to the north (Figure 3-1). Rakhine’s coastline contains a number of small islands, and is more densely populated than the eastern, hilly forests. Rakhine State is the eighth largest and second most populated state in Myanmar with a total land area of 36,780 km². Rakhine State has a diverse ethnic population, with ethnic Rakhine comprising the majority (60%) of the roughly 3.12 million people in the State, followed by Muslims (30-35%) (Environmental Resources Management, 2017). The administrative capital of Rakhine State is Sittwe, formerly known as Akyab.

Rakhine State is considered the second poorest state in Myanmar with some of the worst child survival and wellbeing indicators in Myanmar, with 39% prevalence of chronic malnutrition, a global acute malnutrition (GAM) rate of 10.8 per cent, and a severe acute malnutrition (SAM) rate for children under five of 2.8%. Literacy is roughly 84.7%, lower than the national average of 89.5%. The labor force participation rate (age 15-64) is 58.8%, compared with a national average of 67%. The employment to population ratio is 52.6 compared with a national average of 64.4. Only 31.8% of households in Rakhine State have improved sanitation facilities over traditional latrine or no toilet facilities, the lowest in the country, compared with a national average of 74.3%. Rakhine State households also have the lowest proportion with access to improved sources of drinking water in the country (Republic of the Union of Myanmar—Department of Population, 2014).

Rakhine State is divided into five districts, including Kyauk Phyu District. Kyauk Phyu District has a population of 439,923 people, and an area of 9,984 km². Kyauk Phyu District is divided into four townships (Figure 3-1), including Kyauk Phyu Township. Kyauk Phyu Township has a population of 165,352 and is located on the northern half of Yanbye Island; 87% of the population lives in rural areas, and 13% in urban areas (Myanmar Environmental Institute, 2017). The town of Kyauk Phyu was established as a fishing village in the 17th century and as of 2014, had a pop. of 44,500. Kyauk Phyu Township is organized into 10 wards that include 54 village tracts (Figure 3-1) and 262 small villages. Townships and village tracts of Kyauk Phyu township are depicted in Figure 4-41.

Township Administrators are appointed by the General Administration Department, within the Ministry of Home Affairs. The Ward or Village Tract Administrative Law (2012) describes the mandate for administrative supervision of Myanmar’s 16,700 wards and village tracts, including election of Ward/Village Tract Administrators. The Administrators are elected by Household Leaders, and duties and functions of local governance include security, birth/death registration, public health, local development, land management (Myanmar Environmental Institute, 2017).

4.7.1.1 Kyauk Phyu Township Profile

Geographic and Demographic Setting

Situated between north latitude 19 degrees 29 minutes and 93 degrees 23 minutes, between east longitude 93 degrees 23 minutes and 93 degrees 83 minutes, Kyauk Phyu Township is bounded by Ann Township in the east, the Bay of Bengal in the west, Yanbye Township in the south and Myebon in the north. It is 54 miles from east to west and 90 miles from south to north, with an area of 678.35 square miles in total (Table: 4 – 11).

Table 4-11: Sub-division of Kyauk Phyu District

Town	Area in sq. miles	Areas of all village tracts in sq. miles	Area of township in sq. miles	Township boundaries
Kyauk Phyu	1.36	675.11	678.35	Ann Township on the east, Yanbye Township on the south, Bay of Bengal on the west, Myebon Township on the north.
Sane	1.88	-	-	
Total	3.24	675.11	678.35	

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

The second largest township in Rakhine State, Kyauk Phyu Township has 2 towns, 22 wards, and 249 villages, which make up 52 village tracts. Sane town in Kyauk Phyu Township, has 5 wards. The majority of the residents in the township are Rakhine people and there are a few Chins, Kayin and Burma (Table: 4 – 12). There are some Bengalis. It has a population of 173,275, most of them Buddhists. There are a few Christians, Hindus, Maramargyis, and Muslims.

Table 4-12: Demographic Data

Population	Household	House	Ward	Village Tract	Village	Ethnics	Religion
173,275	39,514	36,928	22	52	249	Rakhine, Kayin, Chin, Bamar	Buddhism Christianity Hinduism Islamism

Situated in the northernmost of the Yanbye Island, Kyauk Phyu Township comprises two (2) parts – coastal part and archipelagic parts – being continuous with the sea. This area has a varied topography with hills, mountain ranges, mud volcanoes, and limestone hills at low elevations. It is an archipelago of 71 islands. The township has many rivers, among which the Thanzit Minyatchaung Rivers are well known. Enjoying favourable tides and coastal seas, most rivers are ideal fishing grounds for the fishing industry and shrimp farming. Ships and motor-boats can navigate the Thanzit River.

The township is 12 feet above sea level. The lowest place is only 7.6 feet above sea level. The township enjoys a hot and wet climate with a temperature around 36.82 °C. The district has a rainfall of 149.53 inches on average a year. The township has, as its natural vegetation, mangrove forests, casuarina trees, wood-oil trees, banana trees, plum trees, bamboo plants, nipa palms, tamarind trees and rain trees.

Land Use

The total land used area of Kyauk Phyu township is reported as 434,144 acres. The land use distribution is presented in Table 4-13: Land use area of Kyauk Phyu.

Table 4-13: Land use area of Kyauk Phyu

S.N.	Particulars	Area (in Acre)	Percentage(%)
1	Net Plantation Area	52,692	12.14
	(a) Paddy plantation area	46,090	
	(b) Plantation area of other crops	-	
	(c) Silted-up land	128	
	(d) Garden land	5,348	
	(e) Nipa palms plantation area	1,126	
2	Reserved land area	9,898	2.28
	(a) Paddy plantation area	9,898	
3	Pasture land area	204	0.05
4	Industrial land area	849	0.20
5	Urban area	384	0.09
6	Rural area	1,390	0.32
7	Reserved/unreserved forest area	16,876	3.89
8	Forest land area	201,771	46.48
9	Virgin land area	52,154	12.01
10	Uncultivable land area	26,937	6.20
11	Others	70,989	16.35
Total ►		434,144	100.00

Others: Road area, common-owned land of villages, beaches, etc.

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Villages on the Made Island and Yanbye Island rely on the Thanzit River for their livelihoods. The following table shows the water areas in the Thanzit River where fishermen of villages on Made and Yanbye Island catch fish. Figure 4-40 shows fishing grounds of respective villages in Yanbye Island and Figure 4-41 sketches fishing grounds of respective villages in Made and Yanbye Islands.



Figure 4-40: Fishing grounds of respective villages in Yanbye Island

Symbol	Villages of fishermen	Island	Fishing areas in the Thanzit River	Map Index
F	Thit Poke Taung village	Yanbye Island	<ol style="list-style-type: none"> 1. Water area off Made Island up to the river mouth, opening to the sea, near Kyauk Phyu. 2. Sometimes, the fishermen pass the sea navigation route and fish in the waters off War Taung village on Ohn Island. 	F'
G	Sittaw village	Yanbye Island	<ol style="list-style-type: none"> 1. Water area in the Thanzit River between Pauk Net Kye Island and Sittaw village. 	G'
H	Say Maw village	Yanbye Island	<ol style="list-style-type: none"> 1. Water area (northern Maw Phyar) to the north of Pauk Net Chay Island, to the south of Thae Chaung village. 	H'
I	Kyan Chein village	Yanbye Island	<ol style="list-style-type: none"> 1. Many locations along Thanzit River 2. Above, below and surrounding water areas of Pauk Net Kye Island, Pauk Net Chay Island, Zin Island, Chee Island and Made Island 	I'

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

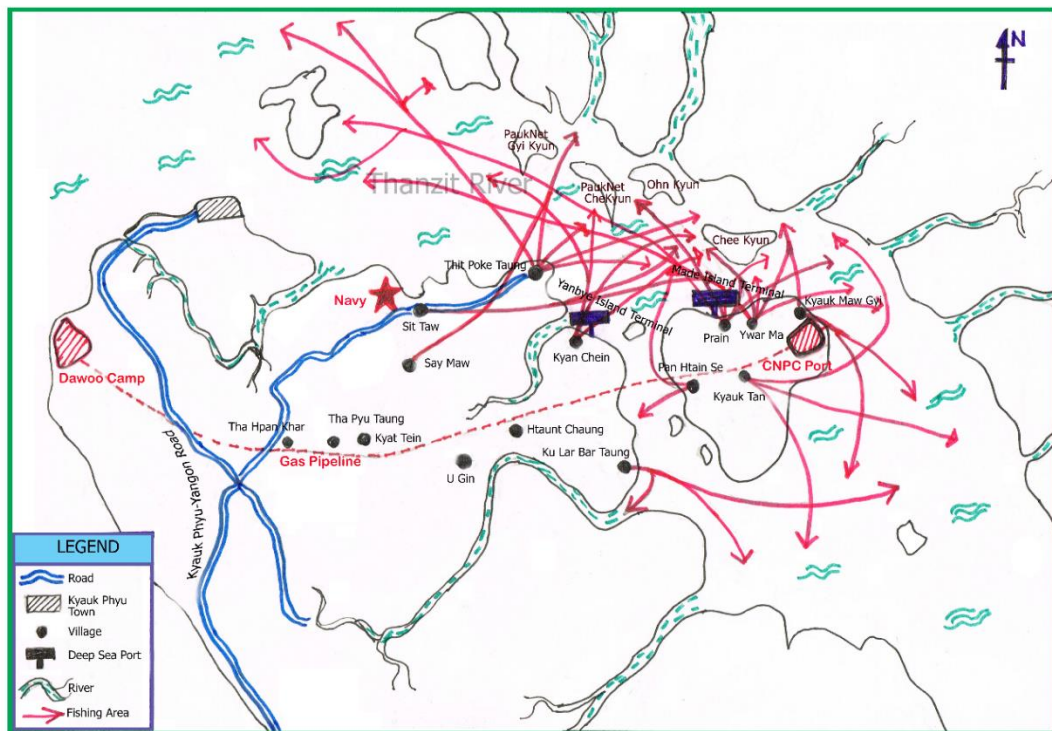


Figure 4-41: Fishing grounds of respective villages in Made and Yanbye Islands (Sketch)

Water Transportation Infrastructure

Figure 4-42 shows water transportation infrastructures namely, 3 jetties for ships, 2 wharfs for small boats, and the shipping lines.

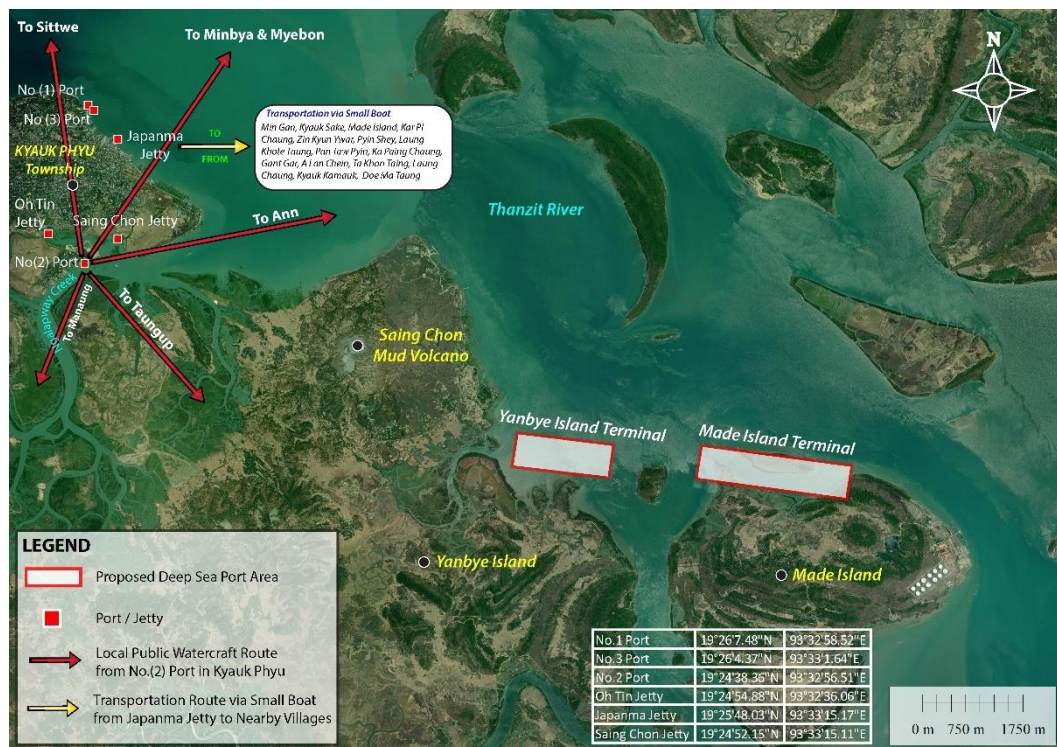
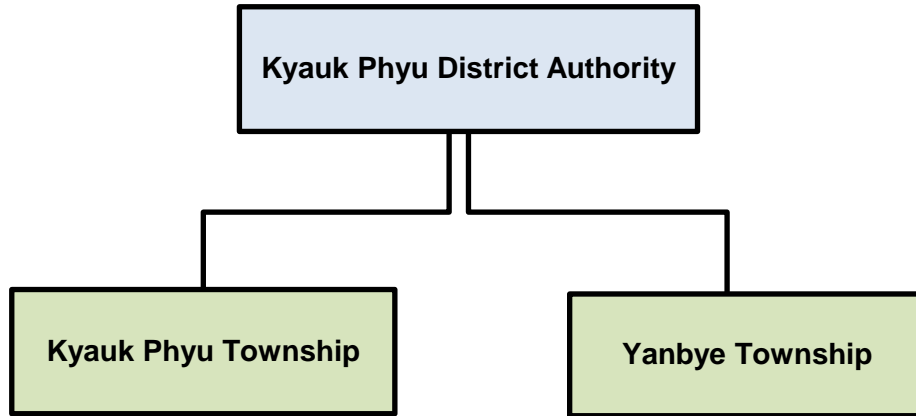


Figure 4-42: Water transportation infrastructures

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Administration

As an administrative district, Kyauk Phyu has 41 departmental offices of district level. This includes the Kyauk Phyu District Administration Office, Kyauk Phyu Township Administration Office, and the Town Administration as the authorities at the highest level. Under those are 39 departmental offices of town-



ship level.



Township Administration Office



Office of Environmental Conservation



Forest Department



Labour Management Department

Business and Job Opportunities

Kyauk Phyu Township has fishing and agriculture as its main business. It has 9,495 people with fishing business, doing seasonal work using 2,393 large or small fishing boats. Its main products are fish, shrimps, crabs, dried fish and sun-dried salt. It has (2) cold stores and (5) ice-factories that are working for fishery.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

The township has 39,240 people working in agriculture. Their main businesses include paddy plantation on a total area of 46,060 acres. (Table 4-14). Dams are built to stop tidal ingress, making it possible to grow paddy on farmland where tides can reach.

Table 4-14: Plantation area and other land area

S.N.	Particulars	Area (in Acre)
1	(a) Paddy Plantation Area	46,090
	(b) Silted-up Land	128
	(c) Garden Land	5,348
	(d) Nipa Palms Plantation Area	1,126
	Net Plantation Area	52,692
2	Pasture Land Area	204
3	Industrial Land Area	849
4	Other	70,989
5	Reserved/Unreserved Forest Area	16,876
6	Forest Land Area	201,771
7	Virgin Land Area	52,154

The township has 2,154 animal farmers, mainly farming chickens, ducks, goats, pigs, and cattle. There are 2,404 people with cottage industries, and nearly 20,000 people doing odd jobs.

Current Statistics for 2022 maintained by the Kyauk Phyu Township Administration Department, show that the township has 476 shops and stores that sell food stuffs, tea and other hot drinks, electric appliances, telephone and accessories, medicines and medical equipment, construction materials, agricultural implements, rice, garments and textile, Gold and others.

Residents of the township live by providing services, trading agriculture, animal farming, and fishery and working as government departmental employees.

The township has a few cottage industries; 10 factories; 37 business companies; and 28 hotels, motels and guesthouses. The towns main industries are agriculture, offshore fishing and animal farming. Its main products are fish, shrimps, dried fish and sun-dried salt. The business data are described in Table 4-15.

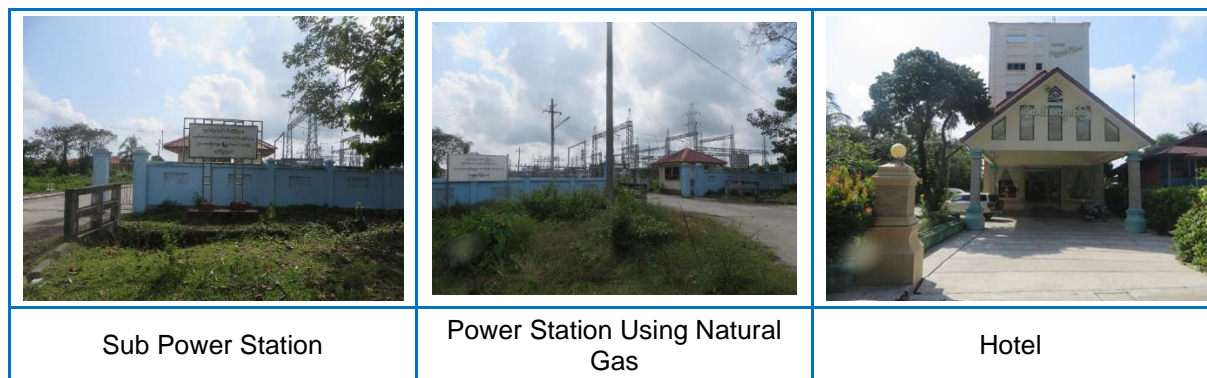
Business Data

Table 4-15: Business data

S.N.	Particulars	Numbers	S.N.	Particulars	Numbers
1	Farmer with plantation	39,240	10	Factories	10
2	Livestock breeders	2,154	11	Companies	37
3	Traders	4,239	12	Hotels	8
4	Fishery businessmen	9,495	13	Motels	2
5	Government employees	3,862	14	Guesthouses	18
6	Stores, food and other shops	476	15	Banks	9
7	Services providers	15,161	16	Petrol/diesel shops	7
8	Operators of other businesses	2,404	17	Markets	5
9	Odd job workers	15,174	18	Mini-stores	2

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Infrastructure and Transportation

(a) Access to Electricity

In the past only a few households in Kyauk Phyu used electricity; now households in all wards of the town and many villages of the township – some (20.58%) of all households are using it. There are still some households that use candles, battery, solar power or private generator for lighting. Details of access to electricity is described in Table 4-16.

Table 4-16: Access to electricity

S.N.	Particulars	No. of Consumer Households
1	Electricity	7,657
2	Kerosene Lamp	3,807
3	Candle Light	23,314
4	Battery Light	214
5	Private Generators	1,648
6	Solar Power Lamp Lighting	554

(b) Access to Water

Over 30000 households of the township get fresh water from hand-dug wells and ponds and about 2000 from tube wells and pipelines. Most households in the wards of the town drink purified water. Details of access to water is described in Table 4-17.

Table 4-17: Access to water

S.N.	Particulars	No. of Using Households
1	Water from hand-dug wells	11,925
2	Water from pipelines	744
3	Water from tube wells	1,123
4	Water from ponds	21,644

(c) Access to Telecommunication

The whole township has 647 cable phone lines and 83937 mobile phones. Each household has one mobile phone at least. There are over 10000 television viewers and radio listeners, and 51310 Internet users. Details of access to telecommunication is described in Table 4-18.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table 4-18: Access to telecommunication

S.N.	Particulars	No. of Using Households
1	Cable phone user	930
2	Mobile phone user	5,937
3	Television Viewer	9,301
4	Radio listener	9,487
5	Computer user	466
6	Internet user	392

(d) Transportation

A few people have private cars for their household use. The township has rental cars such as Dynas and light trucks, and highway trucks. Villagers use motorcycles, bicycles and 3-wheel motorcycles for travelling, and trailer trucks and bullock carts for transportation. As the township has rivers and rivulets, people also use rowing boats, powered boats and motorboats for travelling and transportation. Details of transportation vehicles is described in Table 4-19.

The township has an airport where ATR aircrafts can land. It has three (3) jetties for ships and two (2) wharfs for small boats. There are five (5) coastal shipping lines plying the Rakhine coast, some private speed ferries and public launches. The township has a parking compound for highway buses and eight (8) car parks.

Table 4-19: Transportation vehicles

S.N.	Particulars	No. of Using Households
1	Private car, Dyna, light truck	211
2	Motorcycle, 3-wheel motorcycle, electric bicycle	4,671
3	Trailer truck	306
4	Bicycle	4,471
5	Rowing boat, sampan	1,341
6	Powered boat, motorboat	2,393
7	Bullock cart	6,817



CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Education, Health and Social Life

(a) Education

Kyauk Phyu Township has 22 high schools with 567 teachers teaching 11,603 students, 37 branch high schools with 388 teachers teaching 6,132 students, 23 middle schools with 260 teachers teaching 4,312 students, 31 branch middle schools with 227 teachers teaching 2,783 students, 38 post-primary schools with 223 teachers teaching 3,113 children, 96 primary schools with 286 teachers teaching 4,004 children, ten (10) pre-schools with 35 teachers taking care of 321 children, one industrial institute with 30 teachers teaching 404 students, and one education college with 74 teachers teaching 95 students. The number of schools, students and teachers and levels of schools are described in Table 4-20 and Table 4-21 respectively.

A post –primary school teaches primary grades as well as middle school grades that start from Grade Six and extending to a higher grade each year.

Table 4-20: The number of schools, students and teachers

S.N.	Particulars	Primary Grades	Middle School Grades	High School Grades	Total
1	No. of Schools	144	54	59	257
2	No. of Students	7,658	7,095	17,735	32,488
3	No. of Teachers	544	487	955	1,986

Table 4-21: Types of School

S.N.	Particulars	No. of Schools	No. of Students	No. of Teachers
1	Pre-school	10	321	35
2	Primary-school	96	4,004	286
3	Post-primary school	38	3,113	223
Total		144	7,438	544
4	Branch middle school	31	2,783	227
5	Middle School	23	4,312	260
Total		54	7,095	487
6	Branch high school	37	6,132	388
7	High school	22	11,603	567
Total		59	17,735	955
8	Government Technological College	1	404	30
9	Education Degree College	1	95	74
Total		2	499	104

(b) Healthcare

Kyauk Phyu Township has one 200-bed hospital, three 16-bed hospitals, one private hospital, one traditional medical clinic, one foundation clinic, eight (8) rural health centres, and 35 rural health sub-centres. The township has 42 medical doctors, 109 nurses, and nine (9) health assistants (Table 4-22). The ratio of doctors to population is 1:4067. Common diseases in the township are malaria, diarrhea, tuberculosis, dysentery and hepatitis.

Table 4-22: Healthcare data

S.N.	Particulars	Number
1	200-Bed Hospital	1
2	16-Bed Hospital	3

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

S.N.	Particulars	Number
3	Grand Health Care Centre	1
4	Township Health Care Department	1
5	Township Traditional Medical Clinic	1
6	People's Welfare Health Care Foundation	1
7	Rural Health Centre	8
8	Rural Health Sub Centre	35
9	Medical Doctor	42
10	Nurses	109
11	Health Assistant	9

(c) Social Life

The township has 22 ward administration offices, five (5) markets, one recreation park, 296 Buddhist monasteries, 14 pagodas and a few Christian churches and Hindu temples, and football fields, volleyball courts, and golf courses. . The details of social data is mentioned in Table 4-23

Table 4-23: Social data

S.N.	Particular	Number	S.N.	Particular	Number
1	Ward Administration Office	22	10	Library	122
2	Computer typing and photo-copying shop	18	11	Playgrounds (Football, Volleyball)	3
3	Recreation Park	1	12	Golf Course	1
4	Ward Markets	5	13	Cinema	1
5	Buddhist Monasteries	296	14	INGO	3
6	Pagoda	14	15	NGO	5
7	Religious House	3	16	Organization	29
8	Christian Church	3	17	Political Party	6
9	Hindu Temple	1			



Kant Kaw



Kantkawta Pagoda

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**



Security

The township has nine (9) police stations, one police battalion, 3 army battalions, and one naval base. base (Table 4-24).

Table 4-24: Security

Police Station	Police Battalion	Military	
		Army Battalion	Naval Base
9	1	3	1

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

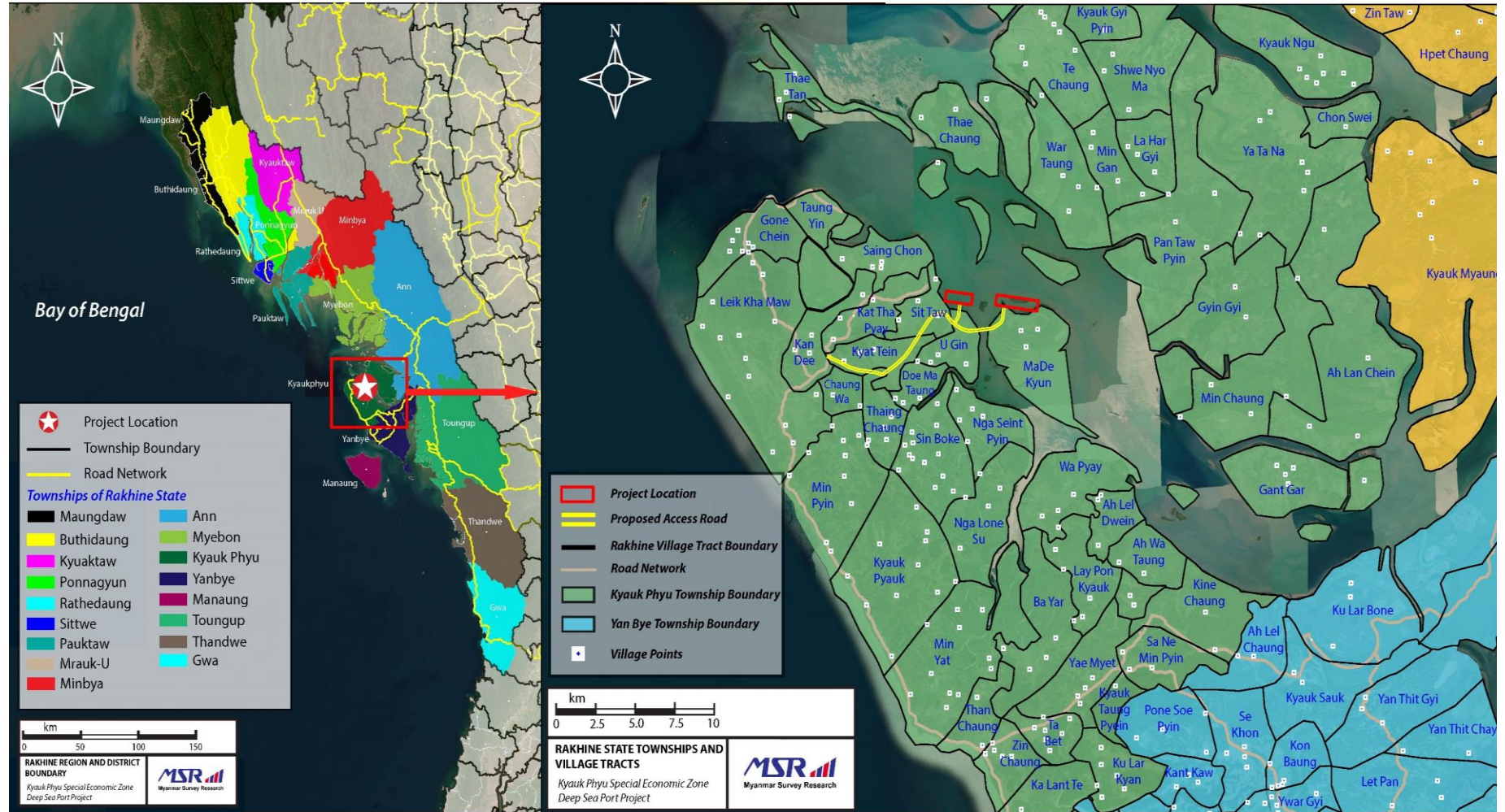


Figure 4-43: Rakhine State, Townships and Village Tracts

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal)

4.7.2 Kyauk Phyu Township Economic Development

The Township of Kyauk Phyu is a rural and natural resource-based economy with economic development in the state being affected by a lack of good roads, electrification, connectivity and racial tensions between communities. The electrification in the state capital Sittwe occurred only in 2014.

Economic development opportunities in the area include existing onshore and offshore oil and natural gas, port expansion, commercial and traditional fishing, agriculture (rice paddy) farming and eco-tourism opportunities.

Approximately 100 km south-west of the Project, there is offshore oil and gas activity exploiting a potential resource of an estimated 13 to 47 tcf of gas in the Rakhine Basin (Ministry of Electricity and Energy, 2019). In 2007, nine of Myanmar's offshore oil blocks were awarded to Daewoo, CNPC and ONGC, with nine more blocks awarded in 2013/14 to Shell, Statoil, BG, Woodside, Ophir and UNOCAL (Cliff, Carter, 2016).

As of 2019, 33 open blocks are active. Gas is currently pumped from the Shwe Gas Field via a 110 km gas pipeline to the 230 MW Kyauk Phyu Gas Power Plant. Other hydrocarbons (crude oil) arrives by ship at the Kyauk Phyu Port, is stored at the bulk terminal and then transported through a 2,520 km pipeline to Guigang in the Guangxi Zhuang Autonomous Region, China (Min, 2013). Figure 4-44 shows oil and gas development in the Project area.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

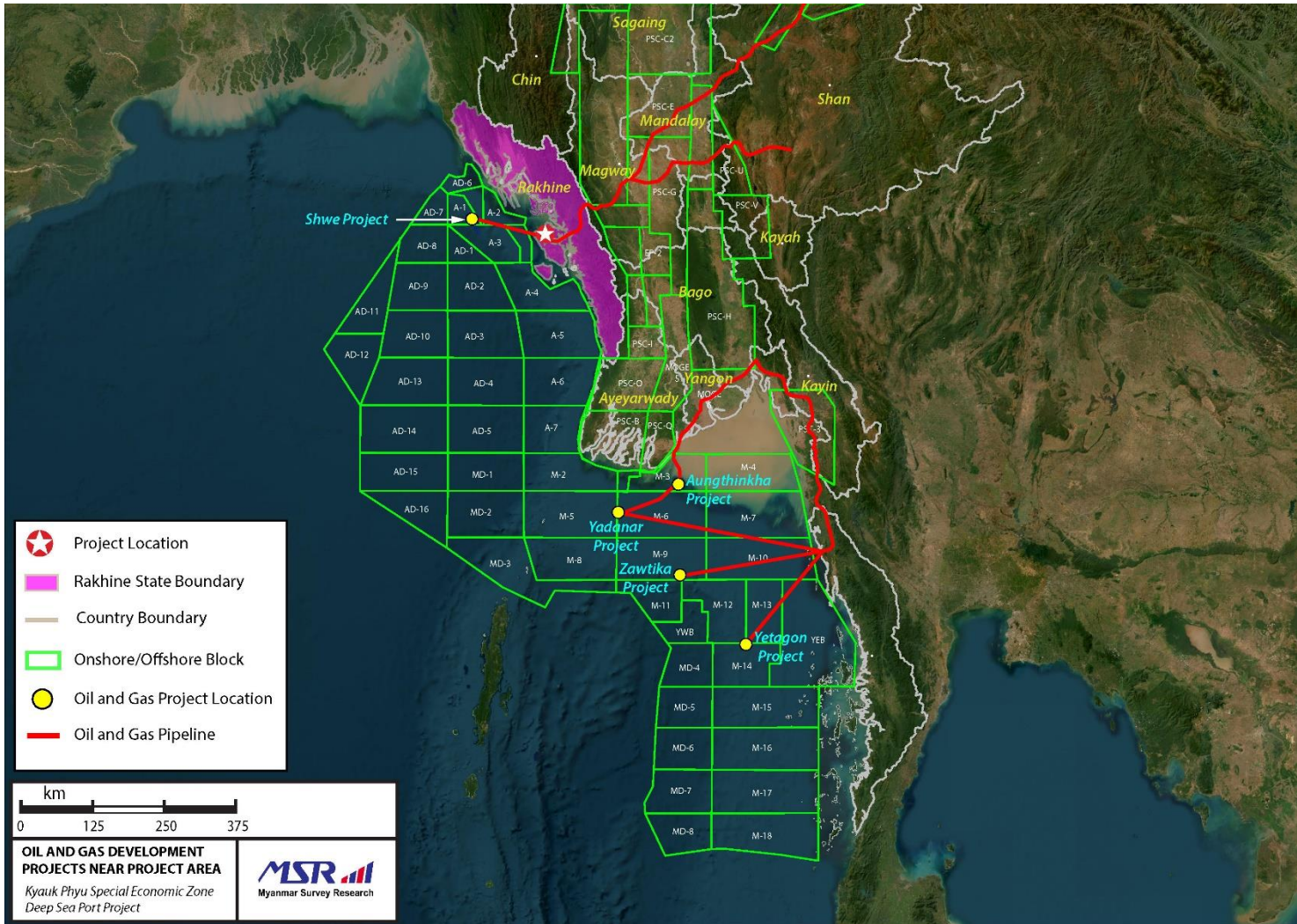


Figure 4-44: Oil and Gas Development in the Project Area

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.7.3 Overview: Yanbye Island

Located ten (10) km south east of district administration township, the proposed location of the port is on the bank of the Thanzit River of the Yanbye Island, to the west of the Made Island in Kyauk Phyu Township. It is near the Danyawaddy Naval base, the naval headquarters of Rakhine State. The villages close to the naval base are Kyan Chein, Thit Poke Taung, and Say Maw and Sit Taw. Thit Poke Taung and Sit Taw are within the naval base compound, and the other two are outside of it.

The island has (613) households and a population of about (2,899), all of them are Rakhine nationals.

Table 4-25: Household and Population Data

S.N.	Village Tract	Village	Household	Population
1	Sit Taw	Sit Taw	119	528
		Say Maw	243	1,178
		Kyan Chein	105	547
		Thit Poke Taung	146	646
Total			613	2,899

Source: Kyauk Phyu Township General Administration Department 2022

4.7.3.1 Business and Job Opportunities

(a) Fishing Business

The main business of the area is fishing in the Thanzit River. The fish and shrimp are sold in Kyauk Phyu. Some 75% of all 613 households make their living by fishing. The locality has over 250 fishing boats. Men go out fishing and women share the work of the freezing, cleaning, splitting, drying, and selling of fish. The fishing grounds are among the mangrove trees, surrounding the villages. Most people live a poor life.

(b) Agriculture

Some people grow paddy, but there are few farmland owners. There are many rivulets in the locality allowing seawater to encroach farmland. People build dams to stop the sea water from coming onto the farmland. Sit Taw and Say Maw villages mostly grow paddy.

(c) Animal Farming

Villagers raise ducks, pigs and chickens for their own use. Some farmers raise cattle. There is no animal farming of commercial scale. A pig farmer will have 3 to 5 pigs. They sell the pork within the village and the pig as a whole to people from other villages. Chickens and ducks are only for domestic consumption.

(d) Job Opportunities

Fishers work on their own fishing boats, and each boat may have two to three workers. They share the fish among themselves. Income is based upon how much fish is caught, and incomes are irregular as a result. Women work in the paddy fields in the wet season, but this only lasts for about 20 days. Most people are unemployed in the rainy season; most of them are poor.

4.7.3.2 Infrastructure and Transportation

(a) Availability of Electricity

Kyan Chein and Say Maw villages do not have electricity. The villagers use solar panels, battery or candles for lighting, and fire wood for cooking. Monasteries have their own generators.

(b) Availability of Fresh Water

Villages get fresh water from hand-dug wells or ponds.

(c) Communication

Every household has mobile phones; but telephone reception is difficult in some villages.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

(d) Disposal of Solid Wastes

Villagers burn their rubbish or bury it within their compounds. Villages do not have a special place for heaping of rubbish. Some throw the rubbish into the river.

A few households have hand-flush toilets; some have pit latrines and others defecate in the woods.

(e) Transportation

Thit Poke Taung and Sit Taw villages are within the naval base compound, where there are tarred roads leading from the naval base gate to those villages. Villagers can go to Kyauk Phyu by boat from a river near Thit Poke Taung village; the river does not have a jetty.

The road between Kyan Chein and Say Maw villages is a rough earthen road. Cars and motorcycles can use it only in the dry season; transportation is difficult in the area.

4.7.3.3 Education, Health Care and Social Life

(a) Education

Sit Taw village tract, with four (4) villages, has a high school in Sit Taw, and a middle school each in Thit Poke Taung and Kyan Chein villages. Say Maw village has a post-primary school. The village tract has 541 primary children, 258 middle school students and 159 high school students — all numbering 958. Table 4-26 shows the number of students in five villages of Yanbye Island.

Table 4-26: No. of students in 4 villages of the Yanbye Island

No. of Students in 5 Villages of the Yanbye Island in 2022																		
Sr.	Name of School	Primary Grades							Middle Grades					High Grades				Grand Total Student
		KG	G1	G2	G3	G4	G5	Total	G6	G7	G8	G9	Total	G10	G11 New	G11 Old	Total	
1	High School Sit Taw	24	35	41	28	27	40	195	-	30	88	57	175	84	52	23	159	529
2	Branch Middle School, Thit Poke Taung	16	16	23	15	15	20	105	-	16	-	-	16	-	-	-	-	121
3	Branch Middle School, Kyan Chein	8	11	15	4	15	19	72	-	14	14	10	38	-	-	-	-	110
4	Post- Primary School Say Maw	23	23	40	17	31	35	169	-	29	-	-	29	-	-	-	-	198
Total								541				258				159	958	

(b) Health Care

The locality has no station hospital or private clinic. Villagers of Thit Poke Taung and Sit Taw go to the clinic at the naval base; villagers of Say Maw and Kyan Chein take the serious patients to the Kyauk Phyu Hospital. Each village has a midwife. Common diseases are hypertension, heart trouble, diabetes, diarrhea, tuberculosis, hepatitis; and anemia in children.

(c) Social Life

Each village has a nearby monastery. Some monasteries have ancient paintings and sculptures of Buddha and ancient pagodas. Villagers have seasonal religious celebrations and ceremonies like robe-offering and lighting. They have novitating ceremonies in the dry season. Head monks of the villages have influence on the villagers. The villages don't usually have social conflicts. They hold grand traditional wedding ceremonies in the dry season.

4.7.3.4 Security

The villages close to the naval base do not have a police station. The Sit Taw village tract administrator, administrators of the villages, and assistant administrators rule the locality in cooperation with the village elders. They all observe the traditional village rules.

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

4.7.4 Villages Profile: Communities in Project Intersection

The maps of Sit Taw village, Say Maw village, Kyan Chein village, Thit Poke Taung village are described in Figures 4-45, 4-46, 4-47, and 4-48 respectively. Photos of Sit Taw village, Say Maw village, Kyan Chein village, Thit Poke Taung village can be seen in Photo Plates 4-11, 4-12, 4-13, and 4-14. Village profiles are described in the respective tables.

4.7.4.1 Sit Taw Village

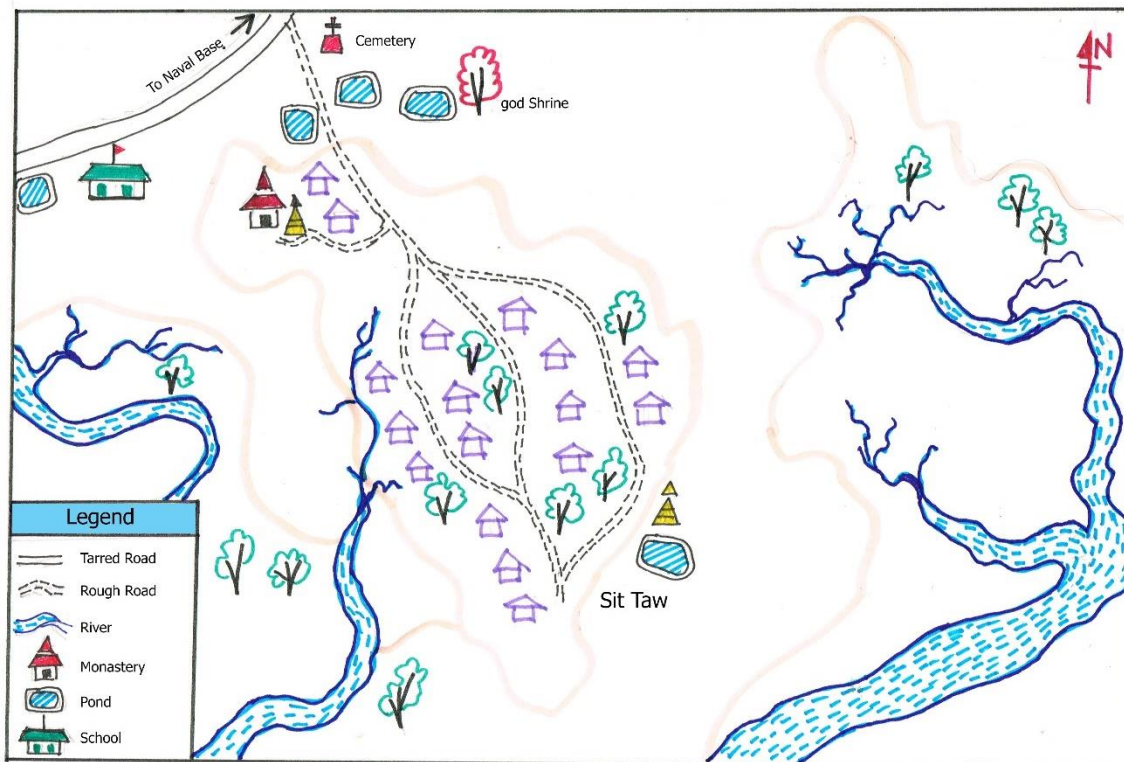


Figure 4-45: Map of Sit Taw Village

Population Data	
Population	528
No. of households	119
(a) Business and Job Opportunities	
Fishing Business	
No. of households with fishing	80
No. of powered fishing boats	93
No. of fishing boats	12
Agriculture	
No. of households farmers	25
Acreage of paddy plantation	210
Within-dam acreage of paddy plantation	-
Animal farming	
No. of households farmers	pig/chicken/cow farming within capacities - 110
Acerage of shrimp farming	-
No. of households with other business	38

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

No. of odd job workers	40						
(b) Infrastructure							
Roads and Streets							
Transport means to Kyauk Phyu	car						
Roads between villages	Tarred Road						
Streets within village	Gravel road, earthen road						
Vehicles							
No. of motorcycles	22						
No. of cars	-						
Communication							
No. of mobile phones	90 (good signal)						
Electricity users							
In percentage							
Households with electric lights	67 %						
Households with candle, solar power, or LED lights	33 %						
Availability of Fresh Water							
Water sources	Well, pond						
(c) Education (High School)							
Primary	Total Students	KG	G1	G2	G3	G4	G5
	195	24	35	41	28	27	40
Middle	Total Students	G6	G7	G8	G9	-	-
	179		30	88	57	-	-
High	Total Students	G10	G11 New	G11 Old	-	-	-
	159	84	52	23	-	-	-
(d) Health Care Facilities							
No. of clinics	nil						
No. of Health employees	nil (traditional healer)						
(e) Solid Waste disposal system							
Burying/ Burning up (in percentage)	100%						
Throwing into rivers	-						
No disposal system	-						
(f) Sewage disposal							
Hand-flush toilet (in percentage)	22%						
Pit latrine, defecation outside (field/ bush)	78%						
(g) Religion, culture, heritage							
No. of pagodas	2						
No. of monastery	1						
No. of Christian churches	-						
No. of mosque	-						
No. of god shrine	1						
No. of cemetery	1						

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Some photographs of Sit Taw Village







	
<p>Pagoda</p>	<p>Monastery</p>
	
<p>Religious Building</p>	<p>Brick Water Pond in Monastery</p>
	
<p>Pond</p>	<p>Regular Service Car</p>

Photo plate 4-11: Photos of Sit Taw village

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.7.4.2 Say Maw Village

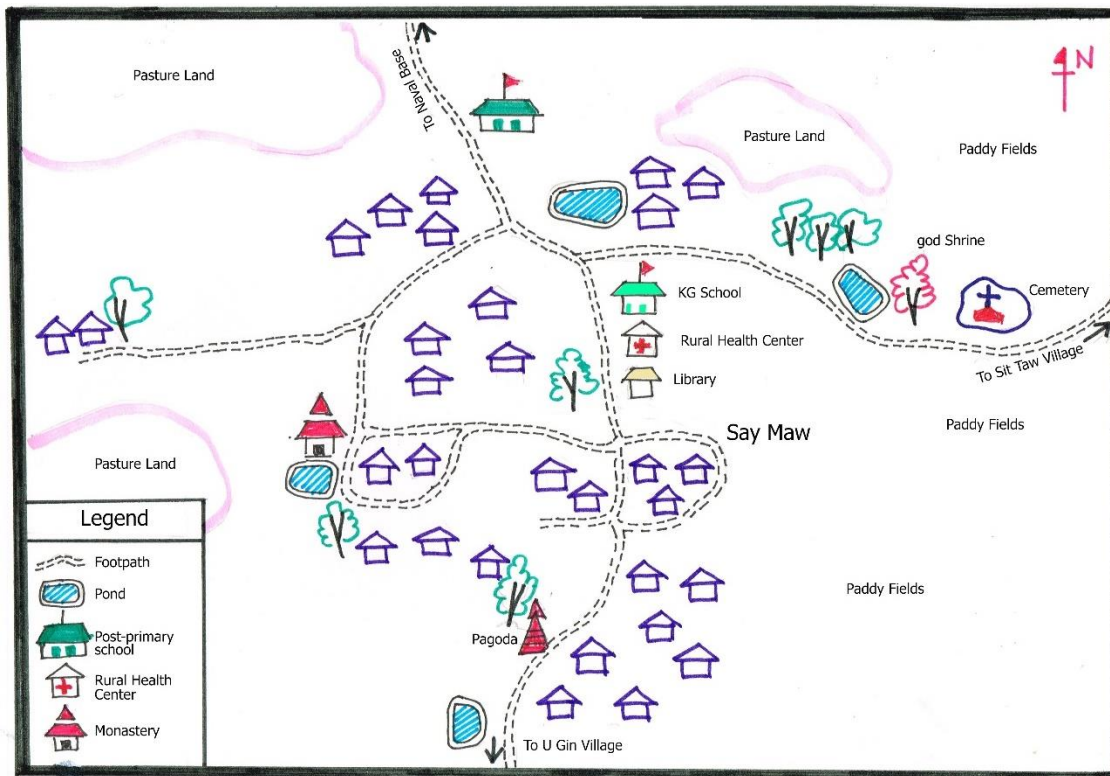


Figure 4-46: Map of Say Maw Village

Population Data	
Population	1,178
No. of households	243
(a) Business and Job Opportunities	
Fishing Business	
No. of households with fishing	45
No. of powered fishing boats	19
No. of fishing boats	7
Agriculture	
No. of households farmers	176
Acreage of paddy plantation	620
Within-dam acreage of paddy plantation	30
Animal farming	
No. of households farmers	Pig/ chicken/ cows farming within capacities - 70
Acerage of shrimp farming	-
No. of households with other business	25
No. of odd job workers	70
(b) Infrastructure	
Roads and Streets	
Transport means to Kyauk Phyu	car, footpatch in rainy season, and car, motorcycle and trailer truck in winter and summer

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Roads between villages	gravel road/earthen road						
Streets within village	gravel road/earthen road						
Vehicles							
No. of motorcycles	23						
No. of cars	3						
Communication							
No. of mobile phones	270 (good and poor signal)						
Electricity users				In Percentage			
Households with electric lights				44%			
Households with candle, solar power, or LED lights				56%			
Availability of Fresh Water							
Water sources				pond			
(c) Education (Post Primary School)							
Primary	Total Students	KG	G1	G2	G3	G4	G5
	169	23	23	40	17	31	35
Middle	Total Students	G6	G7	G8	G9	-	-
	29	-	29	-	-	-	-
(d) Health Care Facilities							
No. of clinics				clinic			
No. of Health employees				midwife			
(e) Solid Waste disposal system							
Burying/ Burning up (in percentage)				8%			
Throwing into rivers				92%			
No disposal system				-			
(f) Sewage disposal							
Hand-flush toilet (in percentage)				-			
pit latrine, defecation outside (field/ bush							
(g) Religion, culture, heritage							
No. of pagodas				1			
No. of monastery				1			
No. of Christian churches				-			
No. of mosque				-			
No. of God shrine				1			
No. of cemetery				1			

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Some photographs of Say Maw Village



	
Library	Monastery
	
Primary School Say Maw Village	
	
First Pond	Second Pond

Photo plate 4-12: Photos of Say Maw village

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.7.4.3 *Kyan Chein Village*

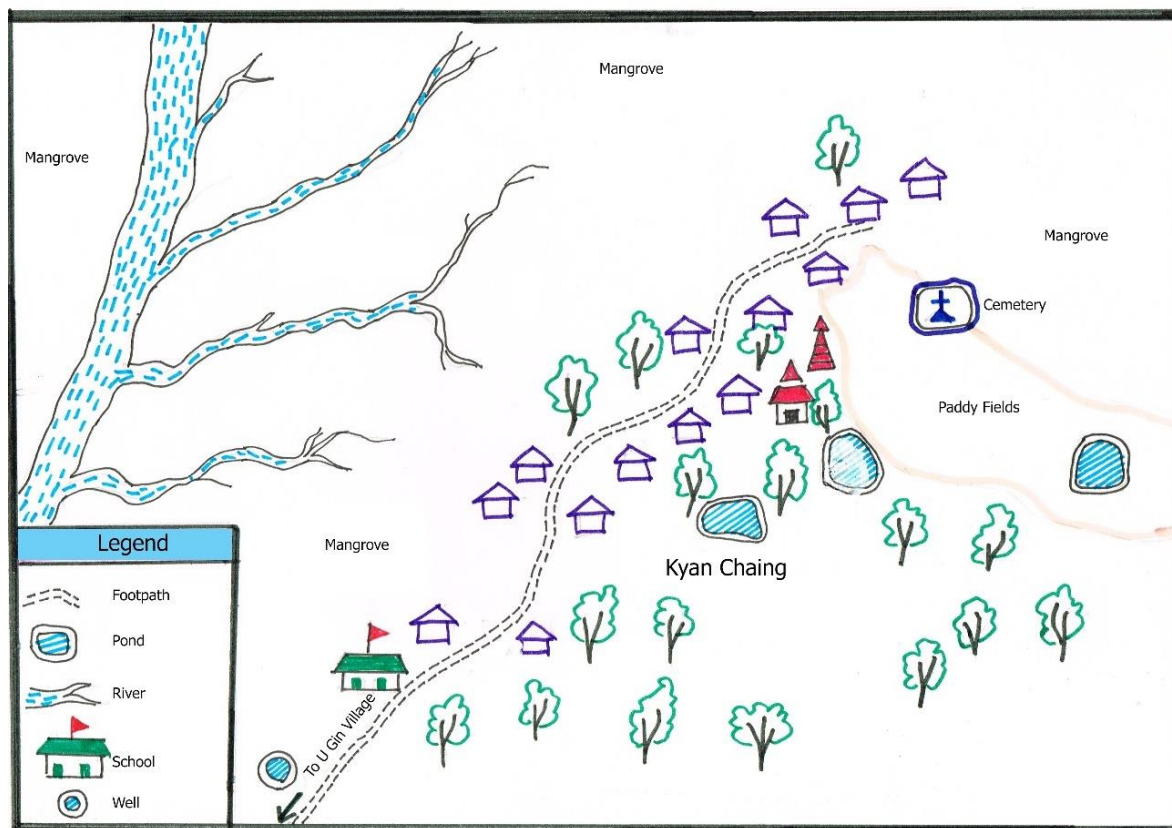


Figure 4-47: Map of Kyan Chein Village

Population Data	
Population	547
No. of households	105
(a) Business and Job Opportunities	
Fishing Business	
No. of households with fishing	90
No. of powered fishing boats	40
No. of fishing boats	18
Agriculture	
No. of households farmers	32
Acreage of paddy plantation	415
Within-dam acreage of paddy plantation	240
Animal farming	
No. of households farmers	cows, pigs , ducks farming within capacities
Acerage of shrimp farming	-
No. of households with other business	6
No. of odd job workers	10

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

(b) Infrastructure							
Roads and Streets							
Transport means to Kyauk Phyu	car, footpatch in rainy season, and car, motorcycle and trailer truck in winter and summer						
Roads between villages	gravel road/earthen road						
Streets within village	gravel road/earthen road						
Vehicles							
No. of motorcycles	2						
No. of cars	-						
Communication							
No. of mobile phones	100 (good signal)						
Electricity users							
	In percentage						
Households with electric lights	55%						
Households with candle, solar power, or LED lights	45%						
Availability of Fresh Water							
Water sources	pond						
(c) Education (Branch Middle School)							
Primary	Ttotal Students	KG	G1	G2	G3	G4	G5
	72	8	11	15	4	15	19
Middle	Ttotal Students	G6	G7	G8	G9	-	-
	38	-	14	14	10	-	-
(d) Health Care Facilities							
No. of clinics	nil						
No. of Health employees	nil (go to Say Maw / Kyauk Phyu)						
(e) Solid Waste disposal system							
Burying/ Burning up (in percentage)	20%						
Throwing into rivers	80%						
No disposal system	-						
(f) Sewage disposal							
Hand-flush toilet (in percentage)	10%						
pit latrine, defecation outside (field/ bush	90%						
(g) Religion, culture, heritage							
No. of pagodas	1						
No. of monestery	1						
No. of Christian churches	-						
No. of mosque	-						
No. of god shrine	1						
No. of cemetery	1						

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Some photographs Kyan Chein Village

	
<p style="text-align: center;">Ordination Hall</p>	<p style="text-align: center;">Religious Rest House</p>
	
<p style="text-align: center;">Monastery</p>	<p style="text-align: center;">Stairway at Monastery</p>

Photo plate 4-13: Photos of Kyan Chein village

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.7.4.4 *Thit Poke Taung*

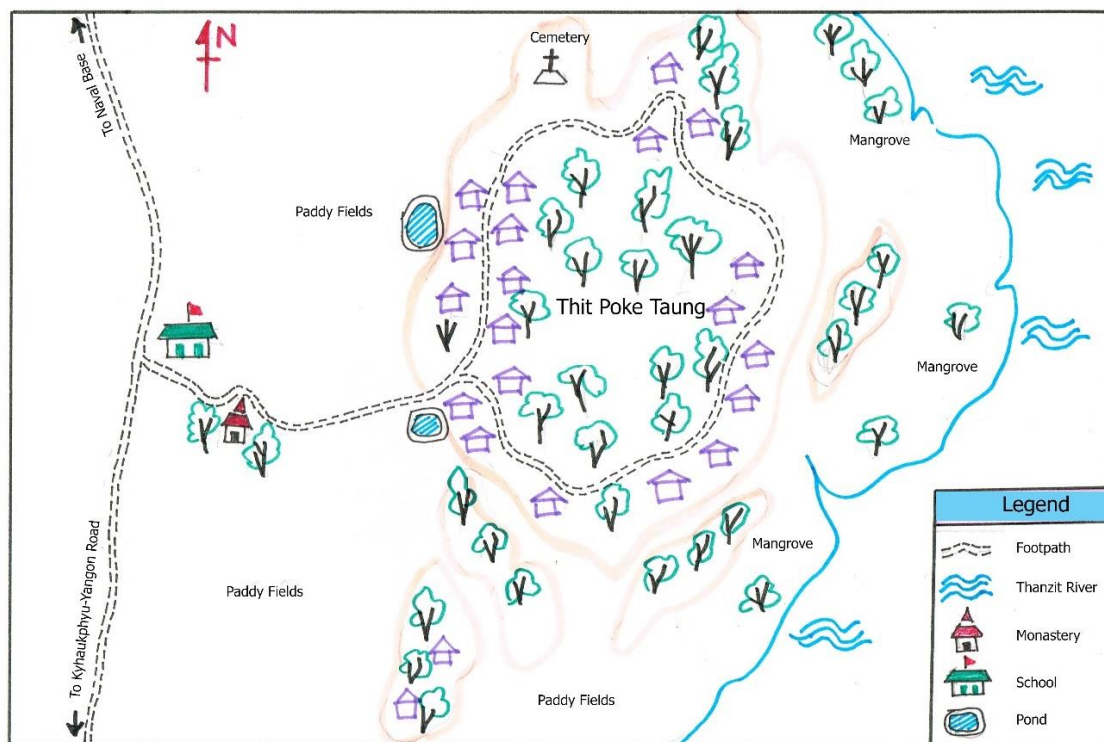


Figure 4-48: Thit Poke Taung Village

Population Data	
Population	646
No. of households	146
(a) Business and Job Opportunities	
Fishing Business	
No. of households with fishing	135
No. of powered fishing boats	110
No. of fishing boats	-
Agriculture	
No. of households farmers	17
Acreage of paddy plantation	60
Within-dam acreage of paddy plantation	-
Animal farming	
No. of households farmers	cows, pigs , chickens farming within capacities - 70
Acerage of shrimp farming	-
No. of households with other business	38
No. of odd job workers	22
(b) Infrastructure	
Roads and Streets	
Transport means to Kyauk Phyu	car

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Roads between villages	Tarred road						
Streets within village	gravel road/ earthen road						
Vehicles							
No. of motorcycles	22						
No. of cars	1						
Communication							
No. of mobile phones	300 (poor signal)						
Electricity users							
In percentage							
Households with electric lights	45%						
Households with candle, solar power, or LED lights	55%						
Availability of Fresh Water							
Water sources	pond water						
(c) Education (Branch Middle School)							
Primary	Total Students	KG	G1	G2	G3	G4	G5
	105	16	16	23	15	15	20
Middle	Total Students	G6	G7	G8	G9	-	-
	16	-	16	-	-	-	-
(d) Health Care Facilities							
No. of clinics	-						
No. of Health employees	Health Assistant						
(e) Solid Waste disposal system							
Burying/ Burning up (in percentage)	10%						
Throwing into rivers	90%						
No disposal system	-						
(f) Sewage disposal							
Hand-flush toilet (in percentage)	10%						
Pit latrine, defecation outside (field/ bush)	90%						
(g) Religion, culture, heritage							
No. of pagodas	-						
No. of monastery	1						
No. of Christian churches	-						
No. of mosque	-						
No. of God shrine	1						
No. of cemetery	1						

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Some Photographs of Thit Poke Taung Village

	
Monastery	Religious House
	
Repairing of Fishing Boat	House Shop
	
Preparing Fish Net	Village Road
	
School	Religious Rest House

Photo plate 4-14: Photos of Thit Poke Taung village

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.7.5 Ethnic Minorities and Indigenous Groups

In the IFC Performance Standard 7, the term “Indigenous Peoples” is used in a generic sense to refer to a distinct social and cultural group possessing the following characteristics in varying degrees: Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; Customary cultural, economic, social, or political institutions that are separate from those of the mainstream society or culture; or A distinct language or dialect, often different from the official language or languages of the country or region in which they reside.²⁸

Ethnic minorities within Kyauk Phyu Township are Rakhine, Chin, Kaman (Muslim ethnic group that work mainly as farmers), Maramagi and other ethnic religious minorities (Aung and Kuso, Toshiro 2012). The majority of the population is Buddhist, with some Muslim, Christian and Hindu groups.

The Rakhine people make up the largest population of indigenous people in Kyauk Phyu and continue to maintain their own culture, language and customs. They are predominantly Theravada Buddhists (one of four main Buddhist ethnic groups of Myanmar), and speak the Arakanese language. The Arakanese language is closely related to and mutually intelligible with the Burmese language. The Arakanese culture is similar to the dominant Burmese culture, but with more Indian influence, including in its literature, music, and cuisine (Wikipedia, 2019a).

4.7.6 Land Ownership and Customary Land Rights

According to the National Land Use (NLU) Policy, land classifications in Myanmar include: agricultural land (including land for animal husbandry activities, land-based aquaculture, and support facilities), forest land, and other land (including urban or village land, religious land, and public land). Land use and management is administered under committees at various levels of government, including District, State, Township, and Village Tract levels. District Land Use Committees define land use and zones, including commercial, industrial, and mining zones, protected areas, agricultural zones, and livestock breeding and fisheries zones. District Land Use Committees oversee land use change processes, which require consultation with the affected Ward or Village Tract Land Use Committees and Township Land Use Committees.

4.7.7 Marine Use Rights

The fisherpersons—nationals and foreigners—who are engaged in fisheries in Myanmar are subject to the Myanmar Marine Fisheries Law (1990), Fresh Water Fisheries Law (1991), Law relating to Aquaculture (1989), and Law relating to Fishing Rights of Foreign Fishing Vessels.

The Department of Fisheries issues registration certificates for the fishing gear (e.g. drift net, tiger net, pull net, etc.). The Township General Administration Department issues licenses for the fishing boat(s) and the engine(s) to be used with. There are two kinds of boat—fibre and wood. The common engine capacities are 6.5 HP and 25 HP. Those who hold the licenses are to operate only within the Kyauk Phyu area. Those wishing to catch fish in other townships need to obtain related licenses from the township concerned.

Authorities concerned have designated fishing areas for users of the tiger net as disputes have arisen occasionally over the fishing blocks. As the tiger-net users plant posts in the sea, to which their nets are fixed, they usually have disputes with drift-net users. The disputes, that have arisen since 2015, are settled by the government departments concerned.

Fishing boats are not allowed to enter the water areas where buoys marking the navigational route for sea-going vessels are floated. The Myanmar Port Authority takes action against the offenders, and book cases with the police station concerned.

Deep-sea trawlers are not allowed to catch fish within the 10-mile offshore area. The Department of Fisheries and the Myanmar Navy take action against offenders, who are fined. Currently, issue of

²⁸ https://www.ifc.org/wps/wcm/connect/3274df05-7597-4cd3-83d9-2aca293e69ab/PS7_English_2012.pdf?MOD=AJPERES&CVID=jiVQI.D#:~:text=In%20this%20Performance%20Standard%20the,distinct%20indigenous%20cultural%20group%20and

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

licenses for deep-sea fishing has been suspended. Measures to prevent the depletion of fish resources have been taken since the time of former NLG government.

Holders of drift-nets can catch fish anywhere except restricted areas. However, as the nets are made to drift along the currents, they are usually damaged, tangled with cruising motorboats and tiger-net posts.

The number of offshore fishing boats in Kyauk Phyu has gradually decreased in Kyauk Phyu Township. Currently, there are nearly 900 offshore fishing boats. There are no deep-sea fishing boats in the township. But there are deep-sea fishing boats from Thandwe Township (Rakhine State), Ayeyarwady Region and Mon State, but they are not allowed to enter the 10-mile offshore area.

4.7.8 Land Acquisition and Resettlement

The Government of Myanmar is responsible for land acquisition for the land required for the Project, and resettlement for any households requiring resettlement for the Project. A land survey is currently being planned to document land use in the Project area. It is expected that the majority of land acquisition and resettlement effects will be experienced by Made Island Residents, Sit Taw village, and Say Maw village. Feedback during consultation and engagement activities identified the need to ensure the land acquisition process is transparent and compensation is provided to landowners at fair market value. The Government of Myanmar will manage land acquisition and resettlement for the Project in accordance with applicable legislation and standards. Myanmar's National Land Use Policy promotes inclusive public participation and consultation in decision-making related to land use and management.

MSR has conducted HH surveys and censuses. With that baseline data and upon obtaining the necessary information from the Client, any dwellings within the project footprint who will be relocated or resettled could be determined as assumption. Property values and lost income can be calculated based on fair market rates to determine livelihood restoration and compensation estimates. This shall be described in the ESIA report.

4.7.9 Healthcare Environment and Community Health

4.7.9.1 Overview: Demographic Profile of Kyauk Phyu

Population, Household, Families, Economically active population, Unemployment, and Literacy rate etc. according to the 2014 Myanmar Population and Housing Census, Department of Population, Ministry of Labour, Immigration and Population, October 2017 Kyauk Phyu Township Report, RAKHINE STATE, KYAUK PHYU DISTRICT, 2019 Inter-Censal Survey. The Union Report, 2019 Annual Report of Kyauk Phyu District General Administration Department were as follows:

Population

The following Table 4-27 shows percent distribution of population by sex, sex ratio and urban (%), State/Region and District.

Table 4-27: Percent distribution of population by sex, sex ratio and urban (%), State/Region and District

State/ Region and Dis- trict	Union				Urban				Rural				Urban popula- tion (%)
	Both sexes	Male	Female	Sex ratio	Both sexes	Male	Female	Sex ratio	Both sexes	Male	Female	Sex ratio	
Rakhine	3,230,175	46.5	53.5	86.8	538,212	46.5	53.5	86.9	2,691,963	46.5	53.5	86.8	16.7
Sittway	1,563,653	45.1	54.9	82.2	329,219	46.5	53.5	86.9	1,234,434	44.7	55.3	81.0	21.1
Kyauk Phyu	917,814	47.0	53.0	88.7	87,980	44.5	55.5	80.1	829,835	47.3	52.7	89.6	9.6
Thandwe	748,708	48.7	51.3	95.0	121,013	48.0	52.0	92.5	627,694	48.9	51.1	95.5	16.2

Source: - The 2019 Inter-censal Survey. The Union Report

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Households

The following Table 4-28 shows head of households and mean household size by State/Region and District.

Table 4-28: Head of Households and mean Household size by State/Region and District

State/Region and District	Total number of households	Total	Male-headed households	Female-headed households	Mean household size
Rakhine	647,767	100.0	77.7	22.3	5.0
Sittway	286,630	100.0	75.3	24.7	5.5
Kyauk Phyu	199,843	100.0	75.8	24.2	4.6
Thandwe	161,294	100.0	84.5	15.5	4.6

Source: - The 2019 Inter-censal Survey. The Union Report

Population in the labour force and Unemployment

The following Table 4-29 shows population in the labour force and unemployment.

Table 4-29: Population in the labour force and Unemployment

No	Township	Population in labour force	Actual no at work places	Unemployment	Unemployment Percentage
1	Kuauk Phyu	100067	95989	4078	4.24%
2	Sanare'	3454	3264	190	6%

Source: The 2014 Myanmar Population and Housing Census, Department of Population, Ministry of Labour, Immigration and Population, October 2017 Kyauk Phyu Township Report, RAKHINE STATE, KYAUK PHYU DISTRICT

Labour force participation rate for the population aged 15-64 in Kyauk Phyu Township is 62.9%. The unemployment rate for those aged 15-64 in Kyauk Phyu Township is 8.4 per cent. There is some difference between the unemployment rate for males (7.6%) and for females (9.8%).

Literacy rate

The following Table 4-30 shows literacy rate and Table 4-32 shows percentage of literate and numerate population age 15 years and over by sex, State/Region and District.

Table 4-30: Literacy rate

No	Township	Population (Township)	Literate person	Literacy rate
1	Kyauk Phyu	163261	99829	98.94
2	Sanare'	4501	3010	93.04

The literacy rate for youth **aged 15-24** is **90.8 per cent** with 87.2 per cent for females and 95.0 per cent for males

In comparison to the percentage of Literate and Numerate population aged 15 years and over by sex, State/Region and District displayed in the 2019 Inter-censal Survey, The Union Report was less at Kyauk Phyu.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table 4-31: Percentage of Literate and Numerate population age 15 years and over by sex, State/Region and District

State/Region and District	Both sexes			Male			Female		
	Total population	Literate (%)	Numerate (%)	Total population	Literate (%)	Numerate (%)	Total population	Literate (%)	Numerate (%)
Rakhine	2,271,569	88.6	89.0	1,023,178	95.0	94.9	1,248,391	83.3	84.1
Sittway	1,086,954	84.0	88.3	489,519	94.0	96.5	597,435	75.7	81.5
Kyauk Phyu	651,233	90.0	85.5	283,638	94.5	90.7	367,595	86.5	81.4
Thandwe	533,382	96.3	94.8	250,021	97.7	96.5	283,361	95.1	93.3

Source: - The 2019 Inter-censal Survey, the Union Report

4.7.9.2 Basic Public Health Infrastructure in Kyauk Phyu

Basic Public Health Infrastructure mainly consists of accessibility to safe drinking water, availability of safe excreta disposal facilities and Hygiene also known as Water, Sanitation and Hygiene (WASH).

They are the main parameters for identifying potential health risks and health impacts. The following describes the current situation.

According to the 2014 Myanmar Population and Housing Census, Department of Population, Ministry of Labour, Immigration and Population, October 2017 Kyauk Phyu Township Report, Rakhine State, by State and Region level, Rakhine State reported by far the lowest proportion of households (44.3%) using a basic service. In Kyauk Phyu District, the proportion of households with access to improved sources of drinking water was (44.8%) and 36.2% at Kyauk Phyu Township. In Kyauk Phyu Township, 36.2 per cent of households use improved sources of drinking water, 58.1 per cent of the households use water from pool/pond/lake, 29.1 per cent use water from protected well/spring, 63.8 per cent of the households use water from unimproved sources respectively. In rural areas, 71.3 per cent of the households use water from unimproved drinking water sources.

Regarding the accessibility of improved sanitation facilities at State and Region level, Rakhine State reported by far the lowest proportion of households (54.8%) that used a basic sanitation service (an improved sanitation facility which is not shared on premises with other households). Access to improved sanitation facilities at Kyauk Phyu District was 29.2% and at Kyauk Phyu Township was 27.9% respectively.

4.7.9.3 Proportion of households with access to improved sanitation

Access to improved sanitation facilities (Improved sanitation facilities include flush or pour flush to piped sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with slabs and composting toilets) at Kyauk Phyu District was 29.2% and at Kyauk Phyu Township was 27.9% respectively. Type of toilets and their distribution in Kyauk Phyu District are described in Table 4-32.

In Myanmar, 91.4 percent of households have access to an improved sanitation facility (97.9% of urban households and 88.9% of rural households). However, only 26.1 percent of households have a flush toilet linked to a sewer system or septic tank. On the other hand, 8.6 percent of households used an unimproved sanitation facility (2.1% of urban households and 11.1% of rural households). About 5 percent of all households still practice open defecation (dispose of faeces in fields, forests, bushes, open bodies of water, beaches or other open spaces), with a higher proportion in the rural areas (6.5%).

By State/Region level, Rakhine State reported by far the lowest proportion of households (54.8%) that used a basic sanitation service (an improved sanitation facility which is not shared on premises with other households)

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table 4-32: Type of toilet and their distribution in Kyauk Phyu District²⁹

Type of Toilets	Total %	Urban %	Rural %
Flush	0.5	1.7	0.4
Water sea (improved pit latrine)	27.4	83.9	20.1
Improved sanitation latrines	27.9	85.6	20.5
Pit latrine	1.1	2.4	0.9
Bucket	1.5	1.6	1.5
Others	0.9	1.0	0.8
None	68.6	9.4	76.3

4.7.9.4 Access to safe drinking water

Proportion of households with access to improved sources of drinking water

Access to improved source of drinking water (types of supply such as piped water (into dwelling, compound, yard or plot, to neighbour, public tap/standpipe), tube well/borehole, protected dug well, protected spring, rainwater collection, and packaged or bottled water or home water purifier at Kyauk Phyu District was 44.8% and at Kyauk Phyu Township was 36.2% respectively.

About 83 percent of households (90% in urban and 80% in rural) in Myanmar had drinking water available in sufficient quantities. By State/Region level, Rakhine State reported by far the lowest proportion of households (44.3%) using a basic service. Access to safe drinking water outlets (i.e. drinking water from an improved source) should be within collection time less than 30 min for a roundtrip, including queuing. Basic drinking water services refers to drinking water from an improved source provided collection time is less than 30 min for a roundtrip, including queuing. (Basic drinking water sources can include: piped drinking water supply on premises; public taps/stand posts; tube well/borehole; protected dug well; protected spring; rainwater; and bottled water when another basic source is used for hand washing, cooking, or other basic personal hygiene purposes). Table 4-33 shows proportion of households with access to improved sources of drinking water.

Table 4-33: Proportion of households with access to improved sources of drinking water

Source of drinking water	Total %	Urban %	Rural %
Tap water/ Piped	2.0	5.9	1.5
Tube well, borehole	3.0	9.4	2.2
Protected well/ Spring	29.1	64.3	24.5
Bottled water	2.1	14.6	0.5
Total improved drinking water	36.2	94.2	28.7
Unprotected well/Spring	3.0	1.4	3.2
Pool/Pond/ Lake	58.1	0.8	5.5
River/stream/ canal	1.0	-	1.1
Waterfall/ Rain water	1.0	-	1.1
Other	0.7	3.6	0.4
Total unimproved drinking water	63.8	5.8	71.3

4.7.9.5 Health Infrastructure³⁰

Table 4-34 shows health human resources at Kyauk Phyu District (2021) and Table 4-35 shows health care facilities.

²⁹ The 2014 Myanmar Population and Housing Census, Department of Population, Ministry of Labour, Immigration and Population, October 2017 Kyaukpyu Township Report, RAKHINE STATE, KYAUKPHYU DISTRICT

³⁰ Annual Report of Kyauk Phyu District General Administration Department

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Health human resources at Kyauk Phyu District (2021)

Table 4-34: Health human resources at Kyauk Phyu District (2021)

District Medical Officer	Township Medical Officer	Station Medical Officer	Maternal / Child Health	School Health	Urban Health Center	Township Health Assistant	Health Assistant (1)	Health Assistant
1	-	2	-	-	-	1	1	6

Health Care Facilities

Table 4-35: Health Care Facilities

District Medical Officer	Township Medical Officer	Station Medical Officer	Maternal / Child Health	School Health	Urban Health Center	Township Health Assistant	Health Assistant (1)	Health Assistant
1	-	2	-	-	-	1	1	6

Health Care Facilities

Table 4-36: Health Care Facilities

District Hospitals	Station Hospitals	Dispensaries	Rural Health Centers	Sub centers
1 200 bedded Kyauk Phyu Hospital	2 Sanare and Zinchaung	2 a) Traditional Medicine b) Public Health Foundation (PHF)	8	34

4.7.9.6 Health Care delivery³¹

Table 4-37 shows health care delivery and Table 4-37 shows leading causes of morbidity and mortality.

Table 4-37: Health care delivery

Township	Population	Care (Doctors)		Care (nurses)		Care (HA)	
		No. of doctors	Doctor and Patient Ratio	No. of Nurses	Nurses Patient Ratio	No. of HA	HA patient ratio
Kyauk Phyu	163,261	32	1:5103	58	1:2815	9	1:1814
Sanare	4,501	1	1:4501	5	1:9	-	-

4.7.9.7 Leading causes of Morbidity and Mortality

Table 4-38: Leading causes of morbidity and mortality

No	Diseases	Morbidity	Mortality
1	Diarrhea (Mild)	2792	3
2	Acute Respiratory Infection (ARI)	1882	0
3	Dysentery	963	0
4	TB	181	8
5	Dengue Hemorrhagic Fever	60	0

³¹ Annual Report of Kyauk Phyu District General Administration Department 2019

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

In the Kyauk Phyu District Health Profile (5) Leading causes of diseases have been shown in the above table. In contrast (5) frequently occurring common diseases are shown in following table referring to 2019 Kyauk Phyu District GAD annual report

4.7.9.8 Frequently occur common diseases³²

Table 4-39 shows frequently occur common diseases. Table 4-40 shows Malaria and Dengue Hemorrhagic Fever and Table 4-41 shows confirmed COVID-19 cases by Township (As of 23 September 2020). Table 4-42 shows stakeholders cum collaborators of health care delivery, blood donation, ambulance services etc. Table 4-43 shows list of the potentially affected villages due to three Projects which are in the inner zone proximity to the Project site.

Table 4-39: Frequently occur common diseases

Township	Malaria		Diarrhea		TB		Dysentery		Hepatitis	
	Morbidity	Mortality	Morbidity	Mortality	Morbidity	Mortality	Morbidity	Mortality	Morbidity	Mortality
Kyauk Phyu	8	-	287	-	61	2	82	-	5	-
Snare	-	-	36	-	-	-	13	-	-	-

Prevention and control of Communicable Diseases such as Tuberculosis (TB), Malaria, Dengue Hemorrhagic Fever, AIDS and Sexually Transmitted Diseases during 2021 expressed as in Kyauk Phyu District Health Profile were as follows.

4.7.9.9 TB, Malaria, Dengue Hemorrhagic Fever, AIDS and Sexually transmitted disease Prevention and Control

Tuberculosis

The TB Control team is located at Kyauk Phyu. At present (4) posts has been vacant including a Team Leader Medical Doctor. During 2021 (181) new cases were detected.

Malaria and Dengue Haemorrhagic Fever

Table 4-40: Malaria and Dengue Hemorrhagic Fever

No of cases detected 2021	Morbidity	Mortality
Malaria	9	Nil
Dengue Hemorrhagic Fever (DHF)	60	Nil

AIDS and Sexually Transmitted Diseases

Forty-eight new HIV positive cases comprised of (47) adults and a child were identified in 2021. Out of these, (37) patients were treated with Lifelong ART drugs. (2255) pregnant mothers with HIV were newly registered and (1908) underwent the Prevention of mother to child transmission Test (PMCT Test).

Out of new (10) Syphilis (one of the sexually transmitted diseases) cases (7) cases had been treated in 2021. (HIV/STD statistics are provided from the District level Health Department.)

³² Annual Report of Kyauk Phyu District General Administration Department 2019

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Table 4-41: Confirmed COVID-19 cases by Township (As of 23 September 2020)

Kyauk Phyu	Kyuak Phyu	135
	ManAung	2
	Ramree	2
	Ann	4

Note: COVID vaccination rates are not known at the township level.

4.7.9.10 Stakeholders cum collaborators of health care delivery, blood donation, ambulance services etc.

Table 4-42: Stakeholders cum collaborators of health care delivery, blood donation, ambulance services, etc.

Civil Societies CSO	NGO and INGO	Political parties	Religious Organizations
29	8	7	12

4.7.9.11 Accessibility to Health Care Facilities

Health staff such as health assistants and midwives take care at the rural community. Major diseases are treated at health centers and if necessary, referred to the Township Hospitals where prior reservations are unnecessary but the travel can take last from an hour to a day. Health care costs, including pharmaceutical products, range from 10,000 to 30,000 Kyats per visit and the ambulance service charge ranges between 15,000 to 50,000 Kyats.

Minor ailments are self-managed by buying drugs from shops, treating with traditional medicine and/or at the local health center. In addition to the cost of pharmaceutical products, out of pocket expenses including transportation costs, range from 5000 to 10,000 Kyats.

According to the 2019 GAD Annual Report, there is one 200 bed District Hospital at Kyauk Phyu. To conform with Ministry of Health hospital guidelines, District Hospitals consists of (11) specialties, are furnished with diagnostic aid facilities, provide laboratory services, have at least one Intensive care Unit, an Accidents and Emergency Unit operate by well-trained Health care Professionals and an Ambulance. Health care expenditure is disbursed through cost sharing. Along with these medical services, District Hospitals also manage Public Health and Community Health concerns.

There are two station hospitals, one at Kyauk Phyu and the other one at Sanare, one Traditional Medicine dispensary and a dispensary run by People’s Health Foundation.

There are eight (8) Rural Health centers lead by Health Assistants and 34 sub centers run by basic health staffs such as mid wives, auxiliary midwives, Public Health Supervisor (1) and (2) throughout the Kyauk Phyu and Sanare.

4.7.9.12 Public Health and Environmental Cleanliness

Water Supply

Source: Wells and Lakes

Disinfection: Household disinfection is carry out by using cloth filters, and boiling, in conjunction with sedimentation. The proportion of households with access to an improved source of drinking water was (44.8%) at Kyauk Phyu District and 36.2% at Kyauk Phyu Township.

In Kyauk Phyu Township, 36.2 per cent of households use **improved sources of drinking water** (tap water/piped, tube well, borehole, protected well/spring and bottled water/water purifier), 58.1 per cent of the households use water from pool/pond/lake, 29.1 per cent use water from protected well/spring, 63.8 per cent of the households use water from unimproved sources. In rural areas, 71.3 per cent of the households use water from **unimproved sources for drinking water** (Drinking water from unprotected dug wells or unprotected springs or any other source where water is not protected from the outside environment)

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Source: The 2014 Myanmar Population and Housing Census, Department of Population, Ministry of Labour, Immigration and Population, October 2017 Kyauk Phyu Township Report, RAKHINE STATE, KYAUK PHYU DISTRICT. The 2019 Inter-censal Survey, the Union Report

Waste Management

Solid waste disposal: There is no specific final disposal site for solid waste. Existing practice is open dumping, open burning and throwing into river without waste categorization before disposal. Left over and food wastes are used as animal feeds.

Waste water: Untreated, flowing freely into soil and water bodies

Sanitation

Latrines:

Less than one third of the population use sanitary latrines. Open defecation in fields or bushes persists. The proportion of households with access to improved sanitation was 29.9% at Kyauk Phyu District and 27.9% at Kyauk Phyu Township respectively. Compared to other townships in Rakhine State, the proportion of households with improved sanitation facilities in **Kyauk Phyu Township is in the lowest group**. Some 68.6 per cent of the households in the township (**Urban**) have **no toilet facilities**. In the **rural areas** of Kyauk Phyu Township, 76.3 per cent of the households **have no toilet facilities**

Source: The 2014 Myanmar Population and Housing Census, Department of Population, Ministry of Labour, Immigration and Population, October 2017 Kyauk Phyu Township Report, RAKHINE STATE, KYAUK PHYU DISTRICT

4.7.9.13 Availability and Accessibility: Health Care Delivery Services in Rural Health Centres

Table 4-43: List of the potentially affected villages due to three Projects which are in the inner zone proximity to the Project site

Made Island Port Terminal of the Project			Yanbye Island Port Terminal of the Project			Access road and bridge of the Project		
Village tract	Village		Village tract	Village		Village tract	Village	
Made Kyun	1	Ywar Ma	Sittaw	6	Sittaw	U Gin	10	U Gin
Made Kyun	2	Kyauk Tan	Sittaw	7	Kyan Chein	U Gin	11	Htaunt Chaung
Made Kyun	3	Prain	Sittaw	8	Say Maw	U Gin	12	Ku Lar Bar Taung
Made Kyun	4	Pa Htain Se	Sittaw	9	Thit Poke Taung	Kyat Tein	13	Thapyu Taung
Made Kyun	5	Kyauk Hmaw Gyi				Kyat Tein	14	Kyat Tein
						Kyat Tein	15	Tha Hpan Khar

One of the rural health care facilities known as RHC (Rural Heal Centre), consists of only two beds without an Operating Theatre, labour room and diagnostic aids. It conducts a vaccination program in villages every two weeks. Villagers do not go there regularly.

Health staff such as health assistants and midwives take care of the rural community. Major diseases are treated at health centres and if necessary, referred to the Township Hospitals where prior reservations are unnecessary, but travel time ranges an hour to a day. Health care costs, including pharmaceutical products range from 10,000 to 30,000 Kyats per visit and the ambulance service charge ranges between 15,000 to 50,000 Kyats.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Minor ailments are self-managed by buying drugs from shops, treating with traditional medicine and/or at the local health centre. In addition to the cost of pharmaceutical products, out of pocket expenses including transportation costs range from 5000 to 10,000 Kyats.

According to the 2019 GAD Annual Report, there is one 200 bed District Hospital at Kyauk Phyu. To conform with Ministry of Health hospital guidelines, District Hospitals consist of (11) specialties, are furnished with diagnostic aid facilities, laboratory services, at least one Intensive care Unit, Accidents and Emergency Units operated by well-trained Health care Professionals and an Ambulance. Health care expenditure is disbursed through cost sharing. Along with medical services, District Hospitals manage Public Health and Community Health concerns as well.

Moreover, there are two station hospitals, one at Kyauk Phyu and the other one at Sanare, one Traditional Medicine dispensary and a dispensary run by People's Health Foundation.

There are eight (8) Rural Health centres lead by Health Assistants and 34 sub centres run by basic health staff such as midwives, auxiliary midwives, Public Health Supervisor (1) and (2) throughout the Kyauk Phyu and Sanare.

Rural Health Centres

These facilities comprise two beds without an Operating Theatre, labour room and diagnostic aids. It conducts vaccination programs in the villages every two weeks. Villagers do not go there regularly.

Health care facility: CNPC assisted one Rural Health Centre at Prain village. (Photo Plate 4-17)



Photo plate 4-15: Rural Health Centre at Prain village

The team arrived thrice to this place. RHC is always and almost under lock and key except the gate. The team visited this facility three times. RHC was always locked, except for the gate.

Health Manpower:

The discussants advised that the health staff deployed at the rural health care facilities and delivering health care services on Made Island include (1) Midwife (1) Auxiliary midwife and (1) Public Health Supervisor PHS1. According to the 2021 Kyauk Phyu District Health Profile eight (8) Health Assistants are being appointed. The Kyauk Phyu District Health Profile indicates that there are eight (8) Rural Health Centres. Therefore, in addition to the above-mentioned basic health staff there may be one health assistant on Made Island. In the meanwhile, one villager confirmed that there he is establishing his own practices.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Others:

Apart from that the Traditional healer and a quack in the community there are cottage retailer shops selling pharmaceutical products to self-manage most of minor ailments.

Frequently occurring major diseases

Communicable diseases such as Tuberculosis (TB), Malaria, Dengue Hemorrhagic Fever (DHF), Diarrhea, Dysentery, HIV/AIDS, and Sexually Transmitted Diseases morbidity and mortality are detailed in the 2021 Kyauk Phyu District Health Profile. These are similar to the five frequently common diseases stated in 2019 GAD Annual Report. Similar findings arose from interviews.

Non-Communicable diseases as Hypertension, Diabetes Mellitus, Asthma and Heart disease are also detailed. Some of the most common occurrences identified by respondents include accidents particularly RTA Road Traffic Accidents, injuries such as cuts, lacerated wounds and dental problems. Cancer, HIV, pulmonary diseases, disability and mental disorders were identified as rarely occurring.

Presence of Insects (Vectors)

Insects also known as Vectors (disease laden agents carrying intermediate host) such as lice, bugs, mouse, mosquitos and cockroaches are common.

Control measures

Mostly smoke, insect spray, mosquito coils are used to manage insects. The respondents did not mention mosquito repellent, application of Abate (Larvicide) and fogging or insecticide spray. One of the protective measures to avoid mosquito bites is the use of impregnated bed nests or Insecticide treated nests. These were provided to villagers two years ago but are no longer in use.

Vulnerable Populations

Vulnerable groups in the Project area are currently assessed to be:

- (i) Landless households that rely in particular for on fishing for livelihood and personal consumption.
- (ii) Female heads of households: Fisheries is a significant resource for female heads of households. 7,956 households (representing 21.4% of total households) in Kyauk Phyu Township are female-headed households (Republic of the Union of Myanmar— Department of Population, 2014).
- (iii) Ethnic or religious minorities
- (iv) Poor households that rely in particular on collecting food, firewood, and herbal medicines from the land for personal consumption or regular income.
- (v) Displaced communities
- (vi) Elderly people and households.
- (vii) Youth and children.
- (viii) People and households with mental or physical disabilities, mobility challenges.
- (ix) Marginalized people and households due to: sexual orientation, gender, physical deformities, ethnicity, literacy, race, religion, national or social origin, sickness, poverty, etc.

Vulnerable people and households may require different consultation and engagement methods and tools.

4.7.10 Heritage – Culturally Environment

4.7.10.1 Significant Sites

Myanmar has identified 46 Cultural Zones, which are defined as Ancient Monument Zone, Ancient Site Zone, or Protected and Preserved Zone. Through engagement with the Department of Archaeology and National Museum, the Project will determine if the Project is located in any cultural zone, and what potential archaeological and heritage values are in the Project area.

There are a number of cultural heritage sites close to either the Yanbye or Made Island Port Terminal of the Projects, the boundary of Project infrastructure. Key sites within one (1) km or less of the Project infrastructure include the Gonechywaing a-naukphet (Monastery), Gant Gaw Taw (pagoda) and the Kyauk-ta-lone phaya Buddhist site next to the Kyauk Phyu Gas Power plant, and the Dhatupwar pagoda and Kan Ee, A-gain and the Ntaunchang monasteries next to the Transmission Lines and Access

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Roads. For a complete account of all culturally significant sites in the surrounding Project area, please refer to Figure 4-46.

Gant-gaw-taw is a sacred Buddhist shrine, believed to have been built in the Vesali period. The Kyauk-ta-lone phaya, built by King Min-ba in the Mrauk U period, is the focal point of Kyauk Phyu's Buddhist environment, located besides Gant-gaw-taw shrine (Wikipedia, 2019b). The name Kyauk Phyu means 'white rock' in Burmese, and the old Kyauk Phyu town is located seven miles from the present town, where two large white rocks stand. Key recreational attractions in Kyauk Phyu include the Kyauk Phyu Viewpoint looking out towards the Bay of Bengal and the mouth of the Thanzit (Kyauk Phyu) River.

There are other culturally significant sites in the Township of Kyauk Phyu, and some are located within one kilometer of proposed Project infrastructure. These culturally significant sites include cemeteries, Buddha images, monuments, or temples, architectural structures (monasteries, pagodas or stupas, mosques, churches), community halls, and Kyauk Phyu beach and viewpoint. Culturally important sites may also include colonial buildings in Kyauk Phyu town.

Figure 4-46 shows some of these culturally important sites. The ESIA will further identify, describe, and assess culturally significant sites within the Project area. Furthermore, the ESIA will identify archaeological and heritage sites within the Project area.

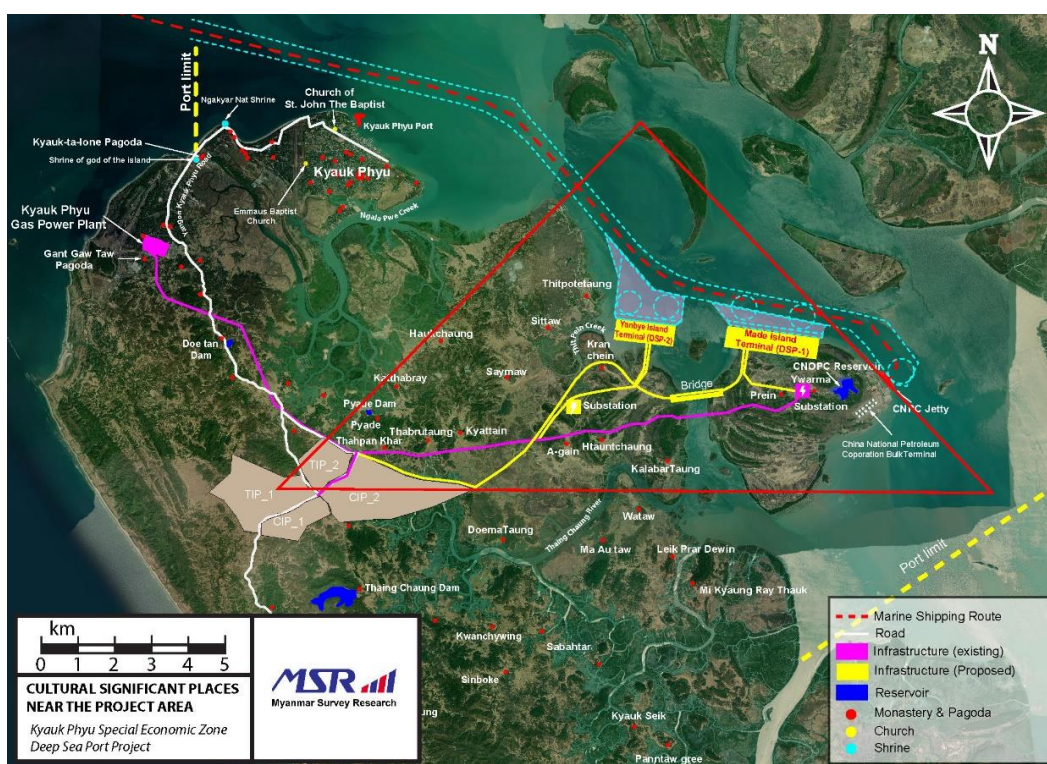


Figure 4-49: Cultural Significant Places in the Project Area

4.7.10.2 The Inventory of the Religious buildings of Project Areas

The following villages are located within two (2) km of Project infrastructure and activities:

Ma Day Kyun Ywar Ma, Kyauk Tan (within Ma Day Kyun Village Tract): close proximity to proposed Made Island Port Terminal of the Project and Substation on Made Island, access road, and transmission line.

Thit Poke Taung, Kyan Chein, Sit Taw, Say Maw (within Sit Taw Village Tract): close proximity to proposed Yanbye Island Port Terminal of the Project and Substation, access road, and transmission line.

Kalaba Taung (within U Gin Village Tract): close proximity to transmission line and Bridge to Made Island.

U Gin, Bu Ma Pyin (extinct village), Kyat Tein, Htaunt Chaung, Tha Phu Taung, Tha Hpan Khar (within Kyat Tein Village Tract): are close proximity to access road and transmission line.

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Furthermore, some villages are in close proximity to, or located along the existing road to Kyauk Phyu Town that may experience increased traffic as a result of Project activities. All residents and religious buildings of Made Ywama and Kyan Chein villages will be impacted by the proposed Projects. Table 4-44 shows the inventory of the religious buildings of Project area.

Table 4-44: The Inventory of the Religious buildings of Project Areas

Village Name	Coordinates	Mon-astery	Ordinat-ion hall	Rest House	Stupa/ Temple	Buddha Image	Spirit Tree or abode	Property/ Users
1.Ywar Ma	19° 21' 52.30"N 93° 39' 34.07"E	1	2	1	1	1	2(tree) 2(abode)	Village and local community
2.Kyan Chein	19° 22' 15.64"N 93° 36' 42.74"E	1	1	1	1		1(abode)	Village/ Navy community
3.Sit Taw	19° 22' 52.35"N 93° 35' 57.87"E	1	1	1	1	1	-----	Village/ Navy community
4.Say Maw	19° 22' 8.62"N 93° 35' 19.34"E	2	1	2	1	1	1(tree)	Village and local community
5.Thit Poke Taung	19° 23' 23.58"N 93° 36' 31.96"E	1	1	1		3	-----	Village community
6.U Gin	19° 21' 6.89"N 93° 36' 14.06"E	1	1	1	1	1	1(tree)	Village community
7.Bu Ma Pyin (ex-tinct vil-lage)	19° 20' 47.28"N 93° 36' 08.34"E				1 cave	1		No Maintain
8.Ku Lar Bar Taung	19° 20' 51.33"N 93° 37' 45.48"E	1	1	1	1		1(abode)	Village and Local community
9.Htaunt Chaung	19° 21' 10.22"N 93° 36' 45.77"E	1	1	1			1(abode)	Village com-munity
10.Tha Hpan Khar	19° 21' 02.35"N 93° 33' 27.10"E	1	1					Village community
11.Kyat Tein	19° 21' 18.48"N 93° 34' 35.61"E	1	1	1	1		1(tree)	Village community
12.Tha Phu Taung	19° 21' 08.03"N 93° 34' 03.10"E	1	1				1(tree)	

The villages within Project areas have Buddhist religious buildings and strong Buddhist culture, tradition and ritual worshipping to guardian spirits. Most of the villages have their own monastery, stupa and Buddha image for religious practice. Almost all monasteries are two storey buildings with single spire which usually built of wood and brick. There are two kinds of worshipping and offering to the guardian spirits. In Some villages, an abode called *Nat Sin* for guardian spirit was built for ritual and offering food, but in some villages, there was defined a huge tree called *Nat pan* for ritual and offering. The villagers usually define a huge tree, especially *Sitpan*, *Pyarpan* and *Zakatpan* were used for the spirit residing. Out of above villages certain sample potential Cultural Impact Assessments, baseline studies with inventories were made in the villages, Ma Day Ywama (T-1), Kyan Chein and Say Maw (T-2) and U Gin (R&B).

Made Ywarma Village

The village is situated in Made-island to the south of Kyauk Phyu township. The village is located within about one (1) km of Project infrastructure and activities of T-1. Every household makes offerings of food, cooked with rice and all villagers annually meet at an abode and worship Ywa Shin Ma with offerings.

was built about sixty years ago. The complex of monastery including stupa and Buddha image is about three (3) acres in extent. Within the complex, there is a two-storey monastery (Photo Plate 4-16), two

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

rest houses, one dining house, two stair ways leading to the monastery (Photo Plate 4-17), one stupa, two simas (ordination halls) and two shrine halls with the huge seated Buddha images (Photo Plate 4-18). Surrounding this monastery are agricultural farms and village houses. The Head Monk, who preaches the Dhamma and resides in the monastery is worshipped and donated to by all people in the five villages on Made Island: Ywar Ma, Prain, Kyauk Tan, Kyauk Maw Gyi and Pan Htein Sai. The monastery and pagoda are very important to the people living on Made Island and its surrounds.

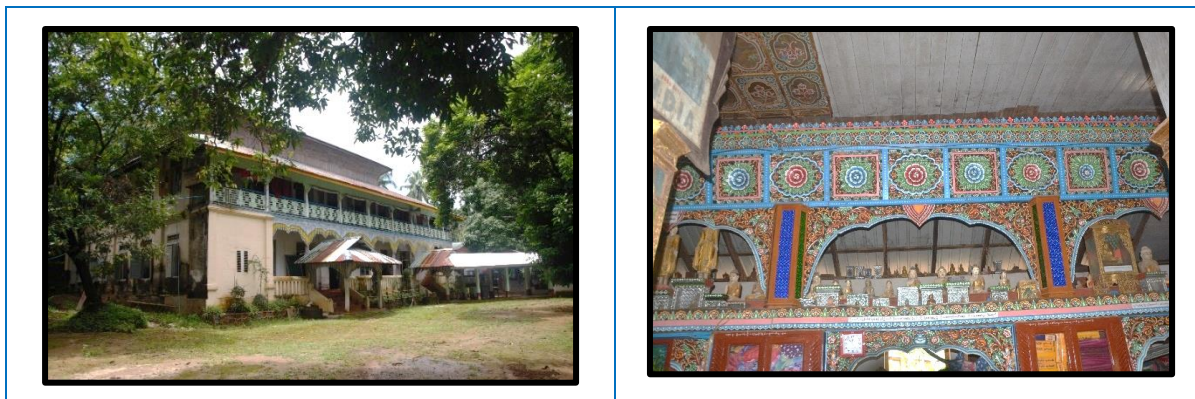


Photo plate 4-16: Ywar Ma Monastery with its artworks



Photo plate 4-17: Two Stairways Leading to Monastery situated on the hill

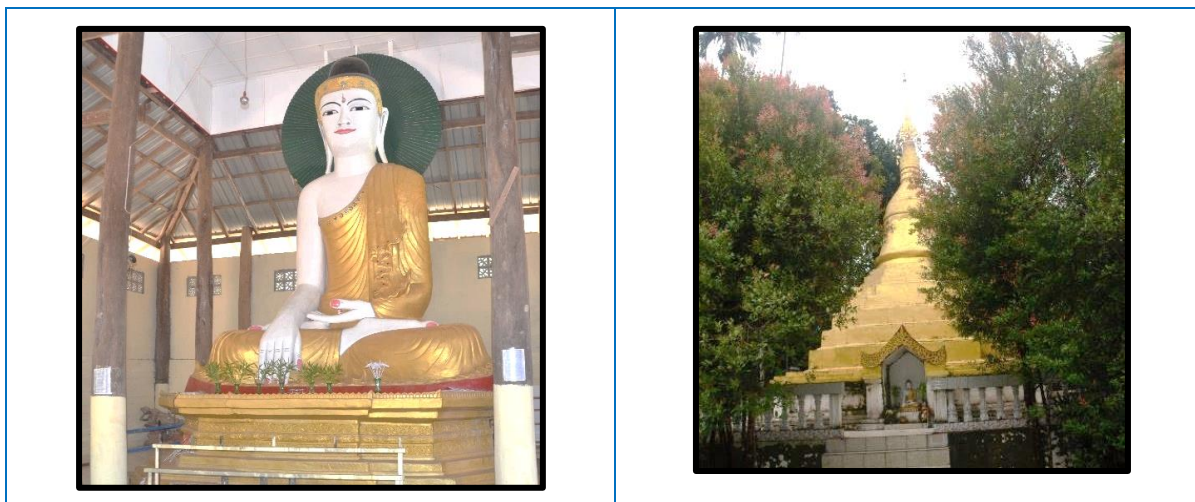


Photo plate 4-18: The Seated Buddha Image and Stupa

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Kyan Chein

The village is situated on Yanbye Island, south of Kyauk Phyu township. The village is very close to T-2 and located within one (1) km of Project infrastructure and activities. A 60 year old, two-storey monastery constructed of wood is situated at the top of the hill. The head monk lives in the monastery. The monastery complex covers three (3) acres, and comprises a sima, a rest house and a long stair way leading to the monastery. Near the monastery is a stupa that was reconstructed about 30 years ago and enshrined with the relics of five (5) old stupas. Photo Plate 4-19 shows monastery stupa and sima at the hill top of Kyan Chein village.

The pagoda precinct covers an area of about one (1) acre. Agricultural farms and village houses surround the monastery and pagoda. Like other villages in the area, the indigenous people follow Buddhism and animism.

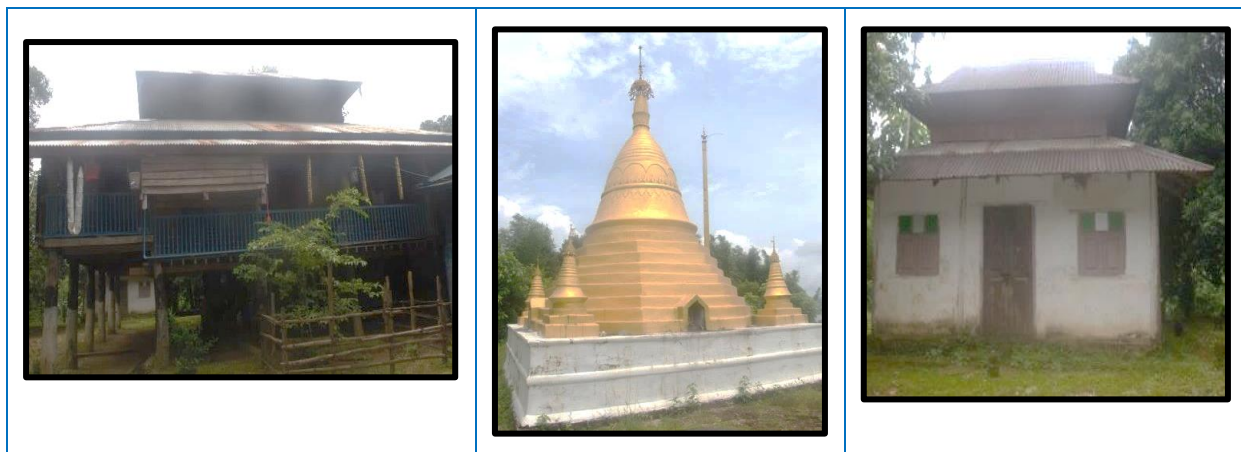


Photo plate 4-19: Monastery, Stupa and Sima at the Hill top of Kyan Chein village

Say Maw

Say Maw village is situated on Yanbye Island, to the south of Kyauk Phyu township. The village is close to T-2 and R&B and is located within two (2) km of Project infrastructure and activities. All villagers follow Buddhism and are devoted to the Three Gems (Buddha, Dhamma and Sangha). An old two-storey monastery constructed of wood and brick, in which a head monk resided, is situated at the centre of the village. The old monastery was reconstructed in 1961. Photo Plate 4-20 shows the new and old monasteries of Say Maw village.

As interior decoration, *Vidhura Jatak* illustrates wooden painted panels in the monastery. Photo Plate 4-22 shows artworks illustrating the story of Vidhura Jataka

A new monastery in which a head monk resides was recently built of brick in a modern architectural style. Within the monastery complex, which covers two (2) acres, there are two monasteries, a Sima, two rest houses and a stairway and a bodhi tree. Photo Plate 4-21 shows the stairway to the monastery and rest house.

The indigenous people follow animism of the guardian spirit, usually defined as a huge tree, especially *Sitpan* (*Albizia Procera Benth, Fabaceae*) for spirit worshiping and its shelter. To bring good business, they usually show the tree spirit called *Ywa Shin Ma* their farming and fishery tools such as newly purchased oxen and fishery nets. Photo Plate 4-23 Bodhi Tree and Spirit Tree Called Sitpan (*Fabaceae*) at the Say Maw Village.

In this village, there is a very popular Rakhine sporting tradition called Kyin (wrestling), which is similar to Sumo wrestling of Japan. The village produces many famous wrestlers who traditionally received the highest rewards called golden gongs.

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)



Photo plate 4-20: The new and Old Monasteries of Say Maw Village



Photo plate 4-21: The Stairway to the Monastery and Rest House

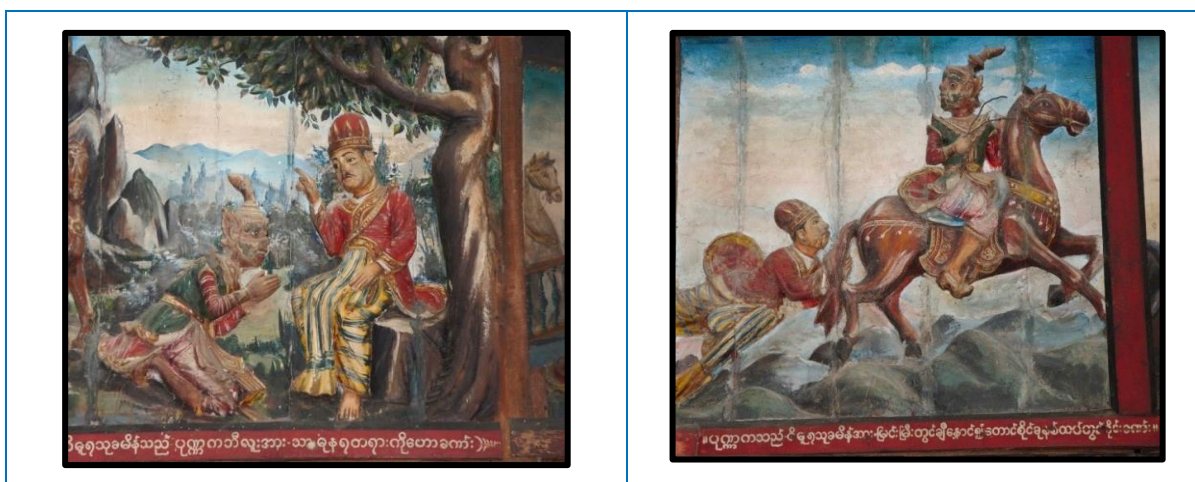


Photo plate 4-22: Artworks Illustrating the Story of Vidhura Jataka

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)



Photo plate 4-23: Bodhi Tree and Spirit Tree Called Sitpan (Fabaceae) at the Say Maw Village

U Gin

U Gin village is situated on Yanbye Island to the south of Kyauk Phyu township. The village is close to R&B and located within two (2) km of Project infrastructure and activities.

It is an old village named after U Gin, the head of elephant-shape mountain. Traditional medicos and carpenters lived in this village. An old two-storey monastery reconstructed of wood and brick is about 60 years old in which a head monk resided, is situated outside the village and a recently built Stupa enclosed with walls is situated besides the monastery.

The pagoda festival is held annually by the indigenous people. Within the monastery complex, which covers two (2) acres, there is one monastery, one Sima, one rest house and a stairway to the monastery. The Sima, ordination hall is over a hundred years old, in which seated Buddha images are enshrined.

In the monastery, the wood pillars are decorated with mosaics and floral screens, and the history of Maha Muni Pagoda is illustrated and captioned with wooden painted relief panels. Agricultural farms surround the Pagoda and monastery. To the southwest of this village is an extinct old village and a small stone cave in which a stone seated Buddha is enshrined. The cave is located at GPS point 19° 20' 47.28"N and 93° 36' 08.34"E. The cave and image were probably constructed and carved during the Mrauk U period. Photo plate 4-24 shows stupa and monastery of U Gin village, Photo plate 4-25, shows the interior artworks, mosaic pillars and painted wood relief, Photo plate 4-26 shows sima in which Buddha stupas enshrined, Photo plate 4-27 shows the cave in which the Ancient Seated Buddha Stupas Enshrined

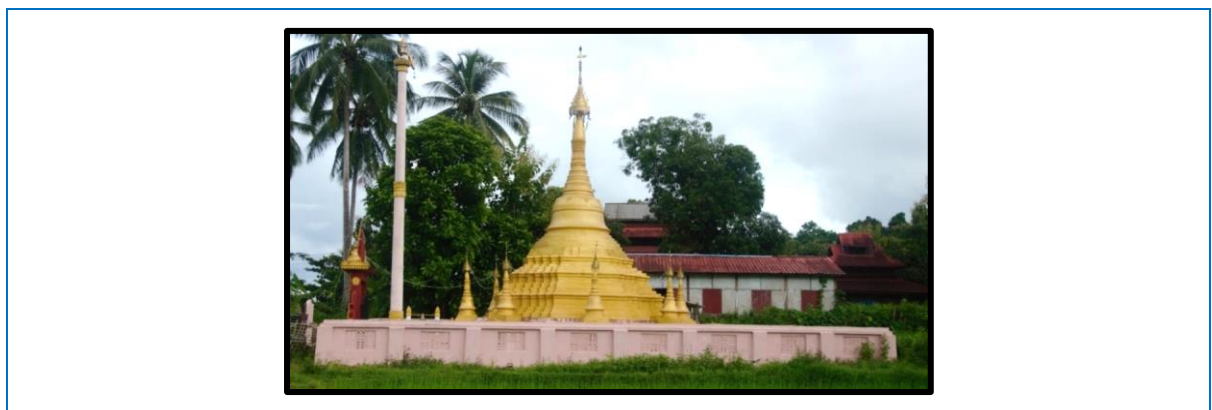


Photo plate 4-24: Stupa and Monastery of U Gin Village

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

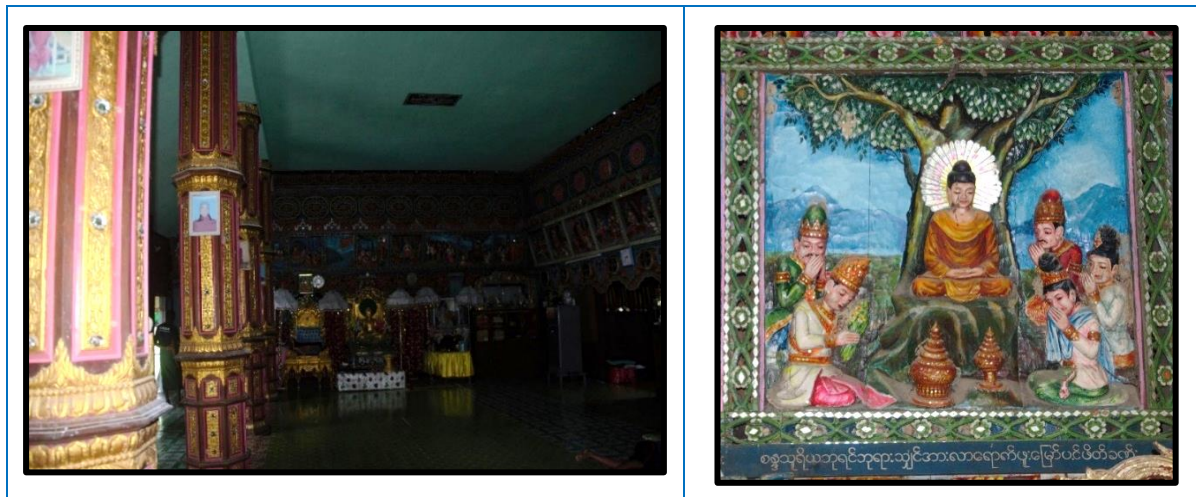


Photo plate 4-25: The Interior Artworks, Mosaic Pillars and Painted Wood Relief



Photo plate 4-26: Sima in Which Buddha Stupas Enshrined



Photo plate 4-27: The Cave in Which the Ancient Seated Buddha Stupas Enshrined

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.7.10.3 Intangible Culture

Boats are widely constructed in Saw Maw village and involve significant craftsmanship. Rakhine people always use the local huge tree called Thingan in the nearby woods to build fishery boats.

They look for that particular tree and when they find that tree in the nearby woods, they stand the axe that will be used to stroke, against the tree. The next day, when they find the axe in the standing position, they believe that they will have good fortune in the future.

In this village, it was observed that some carpenters build fishing boats in the workshop. There are three kinds of boats, large, medium and small built in the area. They classified these kinds of boats by the numbers of timber slabs and the length of boat. Boat carpenters of Thit Poke Taung were interviewed. Photo Plate 4-28 shows boat repairing and constructing workshop shelter at Thit Poke Taung and Photo Plate 4-29 shows wood sawing and cutting by Chief Carpenter at Thit Poke Taung.



Photo plate 4-28: Boat Repairing and Constructing Workshop Shelter at Thit Poke Taung



Photo plate 4-29: Wood Sawing and Cutting by Chief Carpenter at Thit Poke Taung

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1. Distinct Animism

It was noted that the local people of Yanbye and Made islands practiced Buddhism as well as traditionally distinct Animism. These two beliefs -systems have dominated their own life-style, culture and tradition for thousands of years.

There are two kinds of worshipping and offering to the guardian spirits: *Ywa Shin Ma*_ guardian spirit of village, *Kywan Shin Ma*_ guardian spirit of Island and *Pyin Shin Ma*_ guardian spirit of rice field and garden. It can simply be classified according to dwelling places called *Nat Sin*, abode and *Nat Pin*_ spirit tree. They always hold spiritual festival before the abode or spirit tree at the Full moon day of *Nayone*. In some villages, an abode called *Nat Sin* for guardian spirit (Photo Plate 4-31) was built for ritual and offering food, but in other villages, there was defined a huge tree called *Nat pan* for ritual and offering.

The villagers usually define a huge tree, especially Sitpan, (Photo Plate 4-30) Pyarpan and Zakatpan (*Magnoliaceae*) as where the spirit resides. They especially define Sitpan (*Albizia Procera*) for spirit worshipping and its shelter because of its straight and tall tree trunk. To ensure good business outcomes, the villagers usually show the tree spirit their farming and fishery tools such as newly purchased oxen and fishery nets.



Photo plate 4-30: Sitpan (*Albizia Procera*), Say Maw Village



Photo plate 4-31: Abode or Shrine of Guardian Spirit, Ku Lar Bar Taung Village

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1. Spirit Dance and Music Performance

This ritual performance or spirit dance is traditionally performed on the day of the spirit festival usually before the time of cultivation. The local people of the two islands annually offered five trays of different food to the guardian spirit of village, Ywa Shin Ma.

On that ritual day, they dance in the dancing patterns of *Zam* and *Azame Zeikkay* with the song of *Nat Chin* (literally Spirit Song) or *Pat chin* (literally song sung with drum). As part of the music performance, the villagers play a kind of drum called *Nat Pantra Si* (Spiritual Drum). The meaning of the term *Pantra* which was used in the Bagan period cannot be interpreted / translated, but there are a few clues supported by the local tradition. This tradition of music performance is rarely found through the rest of the Rakhine region. Female drummers called *Pat Saya* always play *Pantra Drum* and female spirit-mediums called *Nat Sayama* usually dance in ritual festival. This tradition is also found in Kyan Chein Village and other villages of outside scoping area in these two island regions. Photo Plate 4-32 shows stamps of drum figures attributed to Rakhine traditional musical instrument and Photo Plate 4-33 shows playing auspicious drum with drum stick.



Photo plate 4-32: The Stamps of Drum Figures Attributed to Rakhine Traditional Musical Instrument



Photo plate 4-33: Playing Auspicious Drum with Drum Stick

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

2. Zam Dalay (Zrf;"avh) Zam Custom

Zam Dalay is a type of rare woo custom of Rakhine tradition that has been practiced by the Rakhine people. This custom is associated with *Zam Yeim* which literally means Woo Dance and *Zam Sakar* or *Zam Chin* (literally Woo Conversation or Verse). *Zam Yeim* is a traditional choral dance for wooing that is patterned on the base of woo verse.

3. Literature and Kyauk Phyu-Yanbye Indigenous Language

The **Rakhine people** also known as the **Arakanese people**, are an ethnic group in Myanmar forming the majority along the coastal region of present-day Rakhine State, although Rakhine communities also exist throughout the country, particularly in Ayeyarwady and Yangon Regions.

Rakhine Communal life is mostly dominated by Buddhism, ancient animism and historical tradition. The earliest Buddhist religion arrived in the regions of Rakhine kingdoms during the 3rd century to 6th century according to the Sanskrit inscriptions written in the Nagari letter of Gupta era, that describes Buddhist scriptures. Rakhine script and language are derived from those of northern India, especially Sanskrit and Pali like Burman people. These are very similar to script (writing Language) and spoken language but in spoken language, many usages and pronunciations are different from those of Myanmar.

In the Rakhine state, spoken languages are different from one another according to different locations. There are two famous spoken languages, Yanbye and Manaung Indigenous languages in the scoping region. In Kyauk Phyu- Yanbye Region, the stone Sanskrit inscriptions written in small stone stupas that can be dated 3rd to 6th centuries were also found outside the Project areas. Small stone Stupas with inscriptions (Photo Plate 4-34) were found in the villages situated in the Yanbye island region, Ganga or Kankaw, Zinchaung, Chaung Net, Kantka and Masarine. Some epigraphic plates are mentioned in the 5 portfolios compiled by G.H. Luce, with dating. We assume that the Indigenous people of this region can be regarded as the earliest civilized people in Myanmar like those of Pyu kingdom. Photo Plate 4-35 shows Shitthaung Pagoda, Ananda Candra inscription..

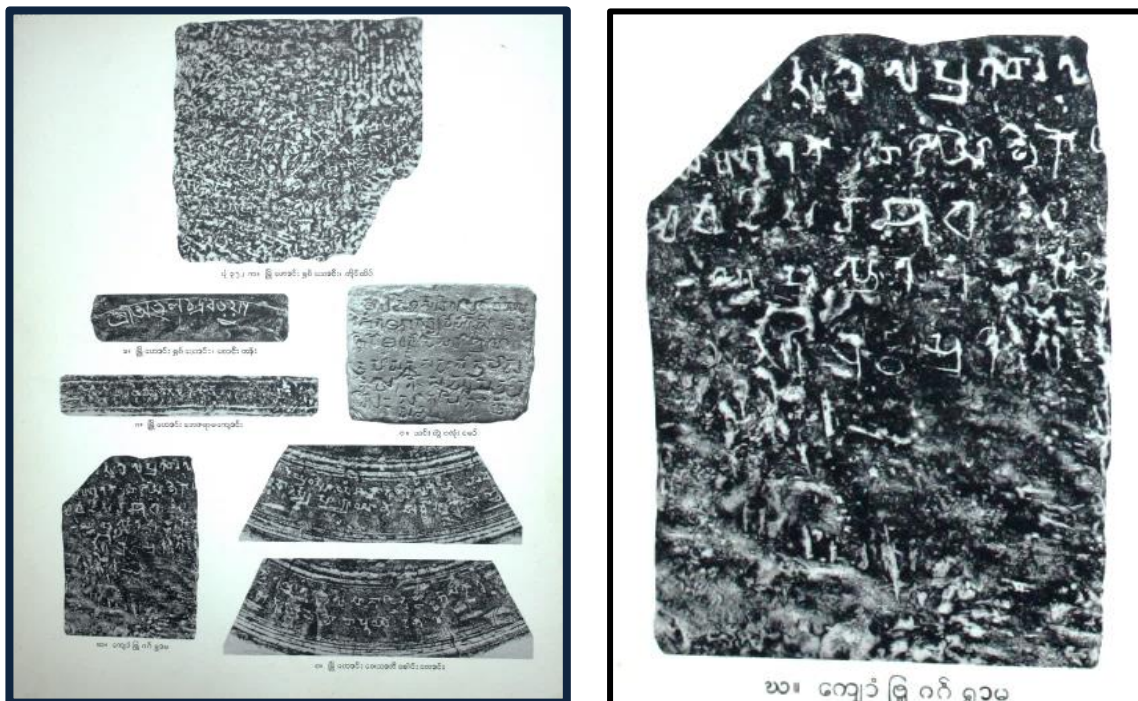


Photo plate 4-34: Kyauk Phyu Inscription Ganga or Kantkaw village

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)



Photo plate 4-35: Shitthaung Pagoda, Ananda Candra Inscription

4. Rakhine Traditional Sport

There is a very popular Rakhine sport tradition called *Kyin* (wrestling) like Sumo wrestling of Japan. This famous tradition can widely be found throughout the Project area. It is noted that Say Maw village produces many famous wrestlers who have received traditional highest rewards called golden gongs called *Shwe Maung*.

5. Traditional Symbolism

In the region, two kinds of national symbols are usually found everywhere; they are Vyala Symbol and national flag. Vyala is recently very popular among the Rakhine people. This origin of symbolical creature can be seen in sculpture of Shitthaung Pagoda, Mrauk U, the ancient city of Rakhine kingdom. It is also called Nava Rupa because this symbol is portrayed with nine parts of nine animals and mythical creatures. Today this pair of symbolic creatures is represented at the entrance gates of monastery as the guardians (Photo Plate 4-36).



Photo plate 4-36: Entrance gates of monastery

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

6. **Rakhine national flag** is illustrated with national symbols. This symbol is composed with Srivatsa _ house of Sri goddess and national flower, Thazin (Photo Plate 4-37).

This similar figure can be seen on ancient coins of Vesali kingdom of Rakhine. Buddha Pujaniya (Pagoda Festival)



Photo plate 4-37: Rakhine national flag

7. Buddha Pujaniya (Pagoda Festival)

The Pagoda Festival is very important for local Buddhist people in the region. The festival is held every three years. Some entertainment and wrestling sports are also held in the pagoda and monastery complexes of Say Maw and Ku Lar Bar Taung villages.

In these ICH, the positive impacts would be found in all the time of Project phases. Vocational schools, language schools and it schools would appear and develop in the future. Due to the development, Buddhist culture could be developed and hidden and extinct customs, traditions and performances could be explored and recovered.

These above sources of intangible cultural heritage are found in Project area. The respect, preservation, protection and maintenance of traditional knowledge, innovations and practices can be supported and inappropriate behaviour should be avoided in the religious and auspicious places. Dual respect on cultural heritage should be adhered to. The positive impacts of cultural heritage on other aspects of community life would be enhance. The discovery or the enhancement of cultural heritage elements could positively affect social and economic development, including the self-esteem of local communities or Indigenous people, the rise of new economic activities, and improved access to infrastructure.

Positive or negative impacts on cultural landscapes, including historic landscapes, have influence on the overall impacts on landscape.

4.8 Local Infrastructure and Services

The area where Project is to be implemented and the surrounding site is remote and pristine in nature because no other public nor private Project is registered within the primary Aol of 2 km radius of the proposed Project site. Made Island ferry quay and coastal waterway route are the only observed infrastructure which is the main transportation and communication route for those communities residing on the Made Island. The China National Oil Corporation (CNOOC) project, officially launched in 2015 is the only prominent foreign investment situated at south-eastern domain of Made Island associated with the oil and gas industry. It has a terminal of 12 storage tanks with a combined capacity of 22 million gallons of oil according to Tank and Terminal Insight Global³³. This infrastructure including the navigational channel are have caused the CNOOC project to be a controversial project among local people.

In the district context, Kyauk Phyu township has minimum local infrastructure and service such as transportation, health care facilities and services, education facilities, religious buildings, community halls, policing and emergency infrastructure, public utilities, amenities, jetties and Kyauk Phyu airport. Each entity of these provincial infrastructure is being developed under the administrated by district authorities that are the principal stakeholders of Project development. As of Rakhine ECD bureau, those private and commercial projects being implemented to date are presented in the appendix.

³³ <https://tankterminals.com/news/myanmar-opens-deep-sea-port-terminal-for-pipeline-carrying-mideast-oil-to-china/>

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

4.9 Valued Environmental and Social Components (VECs)

VECs are environmental and social attributes that are considered to be important in assessing risks; they may be:

- physical features, habitats, wildlife populations (e.g., biodiversity),
- ecosystem services,
- natural processes (e.g., water and nutrient cycles, microclimate),
- social conditions (e.g., health, economics), or
- cultural aspects (e.g., traditional spiritual ceremonies).

The Projects activities and actions can have apparent impacts on VECs either directly or indirectly. Initial VECs identification are conducted at this scoping step to define study limits and the ultimate recipient's ore receptor of impacts driven through entire stage of the Made Island Port Terminal Development Project.

VECs Identification

The initial Value Environmental and Social Components (VECs) was performed systematically in a number of steps (Figure 4-50) formulated by International Finance Corporation (IFC³⁴) in the Good Practice Handbook: Cumulative Impact Assessment and Management.

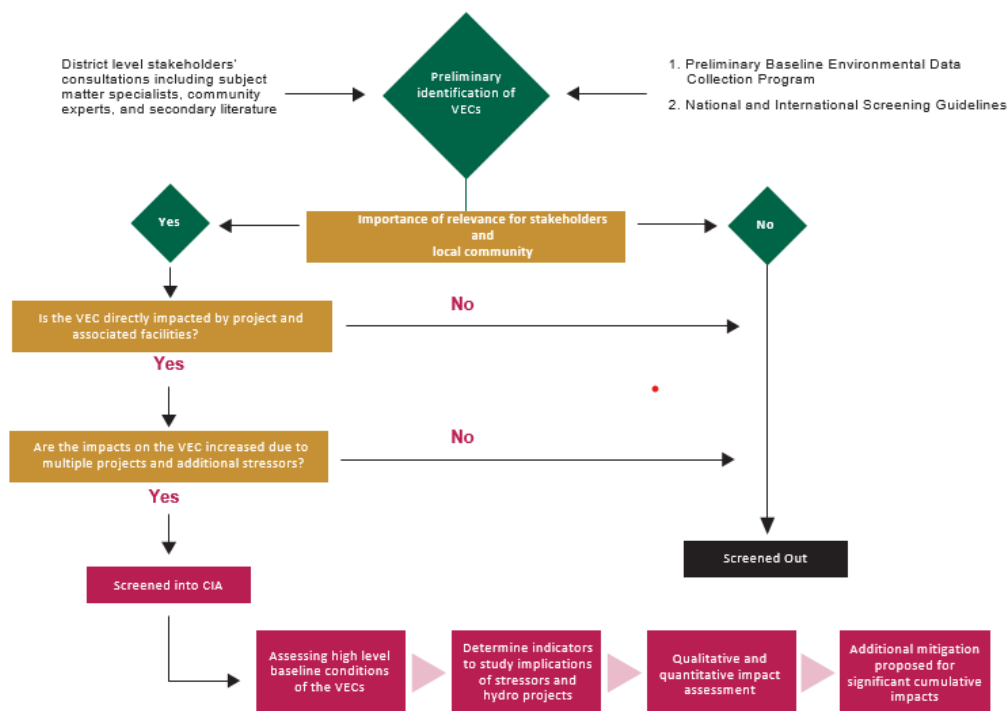


Figure 4-50: VECs Identification for Scoping Study

This section describes the process and identifies the issues and concerns (i.e., issue scoping) and potential environmental effects of proposed Project by examining the pathways (or linkages) through which Project activities may affect the environment. The initial VECs identification are based on;

1. prior experience with similar Projects
2. data that were collected as part of the baseline environmental program
3. information available with regards to species that are afforded protection by legislation
4. guidance from regulatory agencies (e.g., ESIA (scoping) Guidelines), and
5. direct consultation with stakeholders and native communities.

³⁴ https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_cumulativeimpactassessment

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

After sensitive or valued receptors are identified, any potential impacts are to be uncovered this will further relate to cumulative impacts which is the end points of impact assessment. The following table (Table 4-45) summarizes VECs identified in the initial identification of the scoping stage of ESIA process.

Table 4-45: Summary of VECs necessary for the Yanbye Island Port Terminal Project Environmental and Social Impact Assessment

Environmental Components	Preliminarily Identified (VECs)	Project Interaction on Preliminarily Identified VECs
Physical Environment	Atmospheric Environment (Ambient air, Dust and Particulates, and light levels)	There will be releases to air as the result of the Project that could impact physical environmental quality in the study area. Artificial light will be required at the Project site for construction and operation for health and safety reasons that could disturb human and non-human activities and/or well-being.
	Visual and Micro-climate	Land use change could result visual changes in the area: in addition, development of impervious surface and concrete pavement are the precursor of microclimate change that is unavoidable.
	Climate	The Project Proponent requires to assess its GHG emissions within the national and industry contexts, as well as the potential impact of climate change and risks to the Project
	Terrain and Soils (Topography and Hydrology)	There will be physical alteration to terrain and soils including coastal hydrology, and the potential for the spill and deposition of releases to change soil and/or water quality.
	River Hydraulic and Morphology	Due to the massive dredging operation, the river hydraulic and morphology is to be disturbed. This could results changes in surface stream flows (river hydraulics and morphology) of Thansit River.
	Coastal Hydrology	The coastal hydrology of the Thansit river is subjected to be altered due to the establishment of port and terminal.
	Surface water quality	Drainage on and around the Project site will likely alter surface water quality of Thanzit river during construction stage when no proper water treatment system could not be installed because of project nature.
	Surface water quantity	The Project needs substantial volume of water in all stage of the Project but the source of project for consumption could be at risk for water resource availability
	Streamflow sediments	Streamflow and sediments may be affected by releases of dredge plume and changes to streamflow of surface waters. Streamflow sediments are habitat for aquatic biota and are a consideration for sediment (cohesive and non-cohesive) pathways modelling.
Vegetation	Forest Cover (Terrestrial and Coastal)	Land clearing activities to develop terminal infrastructure, as well as port and terminal operations, may impact forest cover (terrestrial forest and mangrove forest).

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Environmental Components	Preliminarily Identified (VECs)	Project Interaction on Preliminarily Identified VECs
Aquatic Resources	Plankton	Turbidity and water pollution may be happened during construction and operation periods. Moreover, invasive species may be introduced via ballast water during operation phase.
	Benthic communities	Habitat loss and water pollution could be affected on benthic organisms such as macroinvertebrates and coral reefs by Project activities.
	Fish, Sharks, Rays and their Habitats (Breeding and Nursery)	Locally importance species: Threadfin, Anchovy, Snapper, Grouper, Sardine Some fish habitats loss will be likely by the development of the Terminal through the alteration and destruction of some local water bodies and water courses.
Wildlife	Migratory birds	A few numbers of migratory birds use the Project site and surrounding area. Land clearing activities to develop Terminal infrastructure, as well as Terminal operations, may impact migratory birds (feeding or resting activities and/or distribution). A range of migratory birds have been identified as of ecologically and culturally importance by ecosystem services and native people.
	Marine mammals	In the waters of the Project area, two marine mammal species such as <i>Orcaella brevirostris</i> (Ayeyarwady dolphin) and <i>Neophocaena phocaenoides</i> (Finless porpoise, locally known as “Lin-Shu”), have been identified. These animals are rare, globally threatened species and serve as indicator species as Dolphins play a crucial role in maintaining the balance of the marine food chain and help to keep the ocean ecosystem healthy and their conservation is important for the health of the ecosystem and the species that rely on it. Myanmar has given complete protection to these species. However, the activities of construction and operation of the terminal Project may potentially have a considerable impact on these marine mammals’ natural behaviors.
	Sea turtles	In the waters of the Project area, two species of sea turtles, namely the Green turtle (<i>Chelonia mydas</i>) and the Olive Ridley turtle (<i>Lepidochelys olivacea</i>), have been identified. Both of these species are listed as endangered (EN) and vulnerable (VU) on the IUCN Red List, and Myanmar has given complete protection to these species. No nesting sites were recorded in the Project area. Sea turtles play an important role in maintaining the health and functioning of marine ecosystems, and their conservation is crucial for the long-term sustainability of these ecosystems. However, the construction and operation of the terminal Project (e.g, noise, collision and plume turbidity) may have significant impact to these animals’ natural behavior, movement and injury.
	Tortoises	The Yellow tortoise, <i>Indotestudo elongata</i> , is a critically endangered species found in the project area's terrestrial environment. Land clearing for terminal infrastructure

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Environmental Components	Preliminarily Identified (VECs)	Project Interaction on Preliminarily Identified VECs
		development and terminal operations can negatively impact the tortoise's behavior and even harm them. Tortoises are a crucial part of ecosystems and play a significant role in maintaining the balance of their habitats.
	Monkeys	The Crab-eating monkey (<i>Macaca fascicularis</i>) inhabits the project area's land environment. It is considered endangered (EN) according to the IUCN Red List 2021. Additionally, it is listed among the 100 World's Worst Invasive Aliens. Land clearing for terminal infrastructure development during construction and operations can adversely affect their behavior and lead to displacement. The Crab-eating monkey also plays several ecological roles in its habitat.
Species at Risk	Seagrass	There are some patchy of seagrass (<i>Halophila beccarii</i>), assign as Vulnerable (VU) by IUCN red list in global category, occurred near the terminal areas which could be impacted adversely by the Project activities.
	Coral reefs	Some species of coral near the Project vicinity are IUCN red listed species (Near Threatened: <i>Acropora digitifera</i> , <i>Favia lacuna</i> , <i>Goniastrea minuta</i> , <i>Favites abdita</i> , <i>Favites acuticollis</i> , <i>Favites halicora</i> ; Vulnerable: <i>Pavona cactus</i> , <i>Pavona decussata</i> , <i>Paraontastrea serageldini</i> , etc.). Coral reefs support habitat for marine life. These community are declining in global scale due to anthropogenic threats such as coastal development and climate change.
	Mangrove	According to IUCN Red List, the two species were mentioned as <i>Sonneratia griffithii</i> (Critically Endangered) and (<i>Heritiera fomes</i> (Endangered). On the other hand, <i>Xylocarpus moluccensis</i> should be conserved because of rare in the area although it was mentioned as Least Concern in IUCN Red List.
Social Environment	Demographics	The demographics of local and native communities may change in response to people moving into these communities for economic opportunities.
	Housing	The cost and availability of housing in local and native communities could be affected in response to people moving into these communities for economic opportunities.
	Education and training	The capacity of the education systems in local and native communities could be affected in response to people moving into these communities for economic opportunities
	Infrastructure	The capacity of infrastructures for wellbeing of local communities could be affected in response to people moving into these communities for economic opportunities.
	Community services	Access to community services for local community members and native people could be influenced by the development of the Project.

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Environmental Components	Preliminarily Identified (VECs)	Project Interaction on Preliminarily Identified VECs
	Health and emergency services	Access to health and emergency services for local community members and native people could be influenced (positively or negatively) by the development of the Project.
	Traffic	Traffic levels and patterns in and around local communities could be affected by the Project.
	Community and Workers' health	The development of the site and the operation of the Project could directly or indirectly affect human health, including that of native people and those workers influx immigrated to the Project sites. Noise will be created as the result of the construction and operation of the Terminal that may disturb well-being of human and non-human.
Economic Environment	Employment and Income Distribution	The Project will both directly and indirectly create relatively high paying jobs in a variety of sectors in the local and regional economies, including native communities.
	Land Use and Tenure	The development of deep seaport, road and bridge will require considerable areas of land. The major impact resulted from the development of Projects will be loss of farm lands. Land confiscation will be one the major issue during land acquisition. Land use and tenure changes because of Project development will make land loss and land use change that could subsequently impact livelihood.
	Local Livelihood	The deep seaport Project will have considerable impacts directly and indirectly on the communities whose livelihoods rely on fishing in/around the areas where Project is be implemented
	Workers Influx	The deep seaport Project will fuel workers influx that could results considerable impacts directly and indirectly on the communities causing increased consumption to resources available in the area where Project is be implemented
	Land Ownership	The landownership is one of the socioeconomic challenges that is being at risk under land concession and acquisition for Project implementation and development across different phases.
	Socioeconomic Equity	The proposed Project is expected to create a great deal of job opportunities. However, the local people have very limited skills and education to access and be benefited from these job opportunities.
Land, Water and Resource Use	Recreation and tourism	The development of the Project site could negate the sites as a use for recreational use either temporarily or permanently once the Project development commences.
	Navigable waters	Development of the Project site will impact "navigable waters" for those communities living in the area, the Project

CHAPTER 4: Description of the Surrounding Environment

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Environmental Components	Preliminarily Identified (VECs)	Project Interaction on Preliminarily Identified VECs
		site where it is to be implemented as important waterways used for produces freight and people commuting.
	Forestry (Ecosystem Services)	The Project may affect some forestry values on small island (Gonn Kynn) and part of Made Island (North).
	Agriculture (Ecosystem Services)	The Project may affect agricultural land where seasonal farming is used for such purposes at the vicinity of the Project.
Cultural Heritage (Tangible and Intangible)	Built and Cultural Heritage	The development of the Project site could affect built and cultural heritage resources, though none were identified in/inside project site during baseline studies.
	Archaeological Resources	The development of the Project site could affect archaeological resources, though none were identified during baseline studies.
Native Rights	Native Rights	The development of the Project could have controversial disputes and issues related to Human Rights
	Customary land, Natural Resources, Native Identity, Minority Rights, and Vulnerable People Rights	The development may affect traditional land uses of native people as it pertains to the following indicators: animal harvesting, plant harvesting, fish harvesting, timber harvesting, and Pastures. The introduction of modern facilities and influx of foreign workers could pose the native Rakhine identity (culture and tradition) at risk.

These initially identified VECs will be performed full assessment with respect to spatial and temporal boundaries within the study limit to support cumulative impact assessment in the EIA stage of the study. The complete assessment methodology is presented at the TOR section of this scoping report; the preliminary impacts identification is further discussed in next chapter.

4.10 Port security and national security

The Kyauk Phyu DSP occupies a strategic position between China and India, playing an important role in supporting economic development in Myanmar and enabling global trade. World events have shown that the maritime transportation system is not immune to safety and security threats. An emergency event could pose a threat to common regional interests as well as a national security risk and affect the physical and socio-economic well-being of Myanmar’s unitary multi-ethnic state. To mitigate these threats, important port infrastructure and related transport systems must be secured to ensure that criminal and security threats do not weaken the competitiveness of the Kyauk Phyu Port.

The Project must consider potential security threats during the construction and operational phases of the development and develop a thorough and adaptive safety and security and risk management plan. The risk assessment should understand not only the risks posed to its operations and personnel but also whether its operations could create or exacerbate existing ethnic or religious conflict. To guide in the process of implementing a high standards safety and security management system, the EIA process should incorporate a risk level assessment of the proposed development and consider the political, social, economic, legal and military developments in the region (IFC 2012³⁵).

³⁵ International Finance Corporation. (2012). Guidance Document 4—Community Health, Safety and Security.. Accessed July 18, 2019. [PDF] https://www.commdev.org/wp-content/uploads/2015/05/P_Guidance_Note_4_Community_Health_Safety_and_Security.pdf

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

The results of the risk assessments will be applied to implementing a high-standard safety and security risk management system developed by the Safety and Security Management Committee (CITIC 2015). This system will be guided by the principles of proportionality and good international practice including practices consistent with:

- The United Nations (UN) Code of Conduct for Law Enforcement Official
- Safety of Life at Sea (SOLAS),
- International Ship and Port facility Security (ISPS),
- International Maritime Dangerous Goods Code (IMDG) and
- UN Basic Principles on the USE of Force and Firearms by Law Enforcement Officials.

To ensure the safety, security and efficient movement of goods and passengers through the Kyauk Phyu Port, CITIC Group has committed to the design and installation of a Project security management system equipped with infrastructure and facilities that comply with AEO Security and ISO 28000 standards. This includes:

- Boundary security facilities: detection system, security fences
- Access control facilities: entrance control systems, restricted area for dangerous goods
- Inspection facilities: electronic monitoring system, patrol cars, electronic patrol devices
- Communication facilities: safety and security management system, security phone and inter-com system
- Safety and security identification and signs (CITIC 2015)

The safety and security and risk management plan should outline the Project's general approach to security and define how security is undertaken and how risks are mitigated. To accomplish this the safety and security risk management plan shall describe how and by whom security will be managed and delivered, the resources required, and the behaviour that is expected of security personnel. It should cover their equipment and responsibilities, as well as the security risks related to security personnel. To ensure that CITIC Group meets the above noted standards and policies, the Safety and Security Management Committee should consider the record and capacity of local law enforcement and judicial authorities to respond lawfully and appropriately to situations involving local violent conflict (IFC 2012).

4.11 Natural Disasters and Hazards

According to the Emergency Events Database (EM-DAT)³⁶ classification, the disasters can be grouped into the hazards that provokes to occur around the world which is linked to:

1. Geophysical
2. Hydrological
3. Meteorological
4. Climatological
5. Biological, and
6. Extra-terrestrial

This section discusses natural disasters and hazards, matters which are worthy of consideration by stakeholders involved with project engineering and management of risk.

4.11.1 Earthquakes

Directly associated to the geophysical, Myanmar is an earthquake prone country. A review of available literature has shown that Myanmar is seismologically unstable and vulnerable to earthquakes due to its location in the active Alpidic seismotectonic belt and the young Alpine Himalayan-Sumatran orogenic belt (Theilen and Pararas-Carayannis, 2009). Located right on the adjacent to the Eurasian tectonic plate, the proposed Project site is located in-between active fault lines thus, provision for earthquake load need to be considered along with structural load assumption and steps in design calculation. Historic records show that at least 15 major earthquakes with magnitudes $M \geq 7.0$ RS have occurred in Myanmar in the last hundred years (Figure 4-51). Within the last hundred years earthquakes have occurred at Bago (5 May 1930), at Yangon (27 March, 16 May and 21 May 1931), at Sagaing (16 July

³⁶ EM-DAT is created by The Centre for Research on the Epidemiology of Disasters (CRED) since 1988

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1956) and at Bagan (8 July 1976) (Union of Myanmar, 2009). More recently, a 6.8 RS earthquake occurred west of Chauk, adjacent to Rakhine State (24 August 2016). Historical records of earthquakes are noted within the Study Area and the magnitudes of the earthquakes were reported to reach 5.0 to 5.5 (Union of Myanmar, 2009).

According to the seismic zone map of Myanmar shown below, the proposed Project lies within strong earthquake zone ((Figure 4-52). Thus, all project engineering and design shall consider seismic load that could withstand equivalent modified Mercalli scale of category VIII. The early warning signs of structural deformation can be noticed under the circumstance that there is soil settlement driven by any geophysical manifest; thus, consequently potential economic and environmental costs could follow. Thus, earthquake design is prime importance to any infrastructure projects that is being planned to introduce in the area.

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

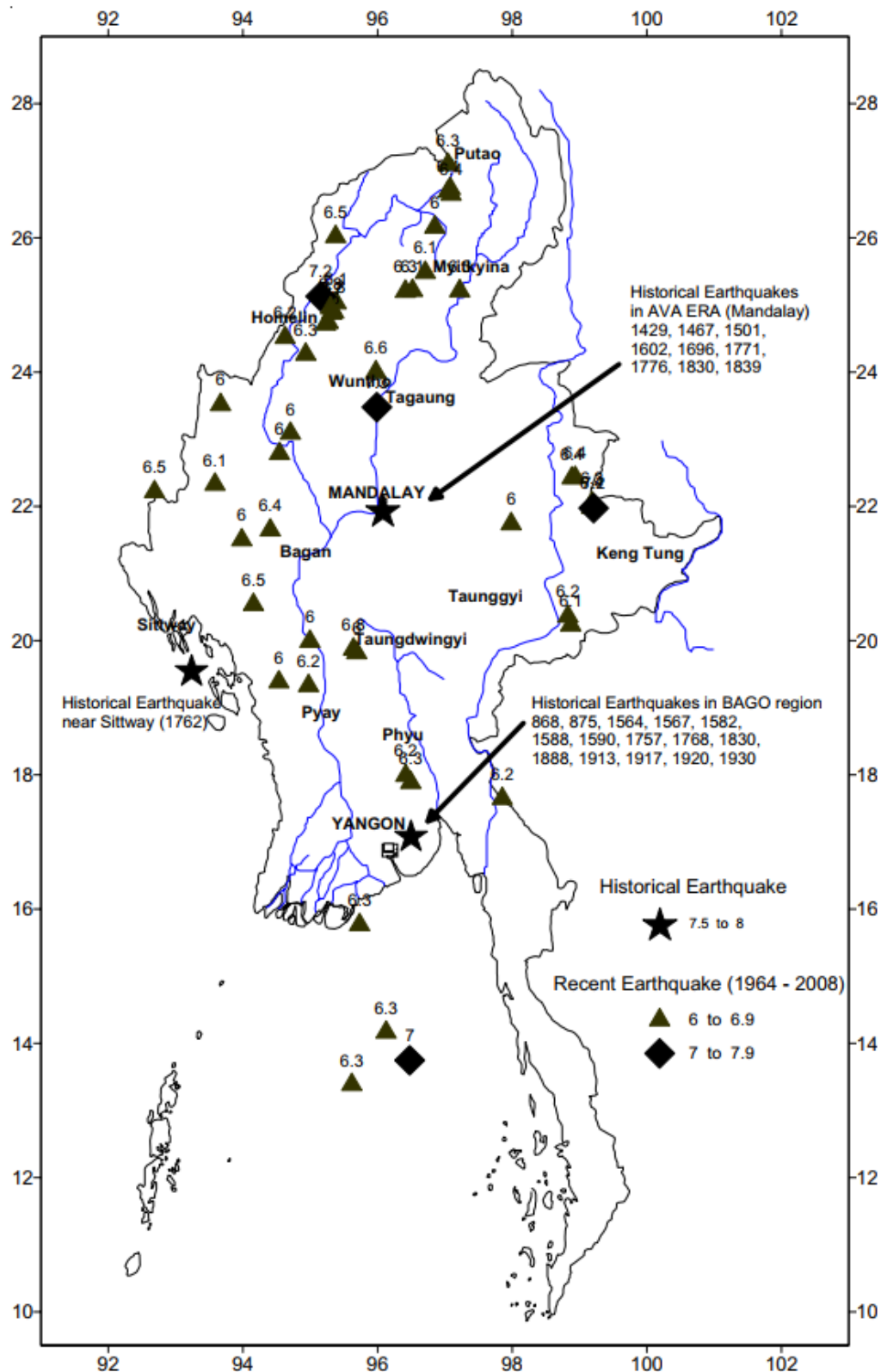


Figure 4-51: Distribution of historical and some recent earthquakes in Myanmar (M. Thein et al., 2009)

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

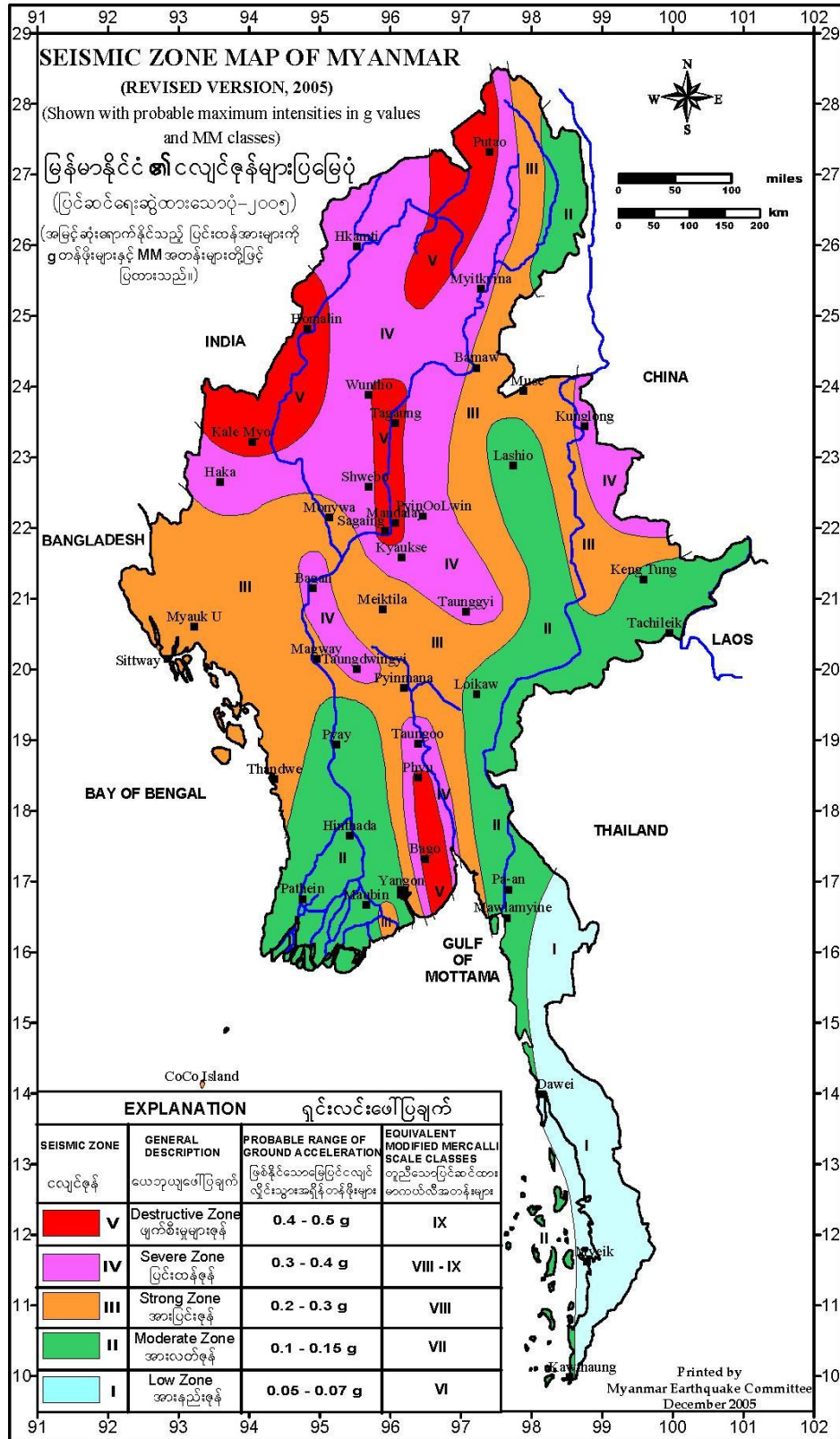


Figure 4-52: Seismic Zone Map of Myanmar

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.11.2 Mud Volcano

In connection with geophysical activity, Yanbye island has a long history of volcanic activity. Mud volcanoes are a feature of these coastal waters, forming temporary islands up to four (4) m high, which are planed off by waves to form shoals. There seven groups of mud volcanoes within the Miocene formation reported on Yanbye island. Three groups of mud volcanos lie east of Kyauk Phyu. One of these volcanos erupted near the Sai Ching village east of Kyauk Phyu in 2008 and similar eruptions have been reported in 2006, 2000, 1886 and 1990 (MEI, 2017). The location of mud volcano is described in Figure 4-53.



Figure 4-53: Location of Mud Volcanos identified within Kyauk Phyu Township.

To avoid potential harm caused by mud-vent eruptions, future industry and port developments will be located outside the high-risk zone of these volcanos and will be constructed at least 2.5 km away.

Where the consequences of an unforeseen event extend beyond the Project footprint, the client is required to design emergency response plans based on risks to the health and safety of the affected community and other stakeholders (IFC 2012). Emergency plans should be developed in collaboration with potentially affected stakeholders and communities and provide guidance on safeguarding the health and safety of the environment, workers and local communities (IFC 2012).

4.11.3 Tsunami and Storm surges

Myanmar is at moderate risk for tsunamis. Several tsunamis have been recorded in Myanmar coastal areas. In 2004, a tsunami generated by the Sumatra earthquake caused moderate damage to the Rakhine Coast, Ayeyarwady Delta and the Tanintharyi Coast with more than 60 lives and hundreds of boats lost. Much of the southern Rakhine Coast is generally rocky and sandy without mangrove protection. As such, this area is considered comparatively more vulnerable to a potential tsunami.

4.11.4 Flood and Inundation

The incidence and frequency of flood and inundation is becoming more concerning in Myanmar. Driven by the climate change related hydrological risks, there is growing flood risks annually around the world including the coastal area of Rakhine State of Myanmar where rainfall anomalies occur along with rising sea levels.

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

According to the Coastal flood screening tool of climate central database³⁷, global climate change is controlled about 1.5 degrees Celsius 2100 (Figure 4-54) according to the Paris treaty, the coastal flood risk of land projected to the vicinity of proposed Project and Made Island is identified alarming (figure below).

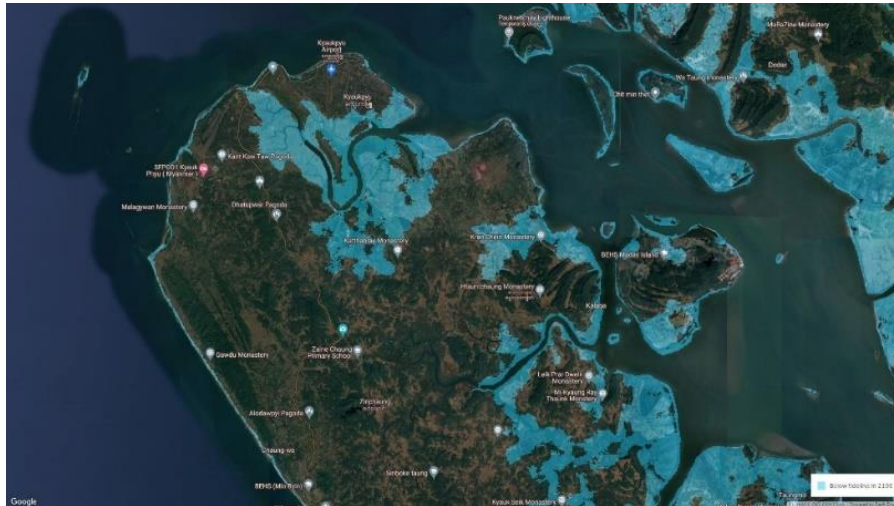


Figure 4-54: land projected to be below tideline in Year 2100 at 1.5°C in GWP

The land project below the tideline can be greatly impacted if the Global Warming Potential continues to increase to a level which is somewhere between 1.5° and 4.5°C, as estimated by scientists and researchers.³⁸

Thus, in the worst-case scenario of 4.5°C GWP (Figure 4-55), the land projected below the tide line becomes a threat to the existence of communities and infrastructure in the area (show below aerial map). Flood and inundation hazards must be highlighted for disaster risk reduction efforts and planning, for either mitigation or adaptation for both the Project Proponent and provincial policy makers.

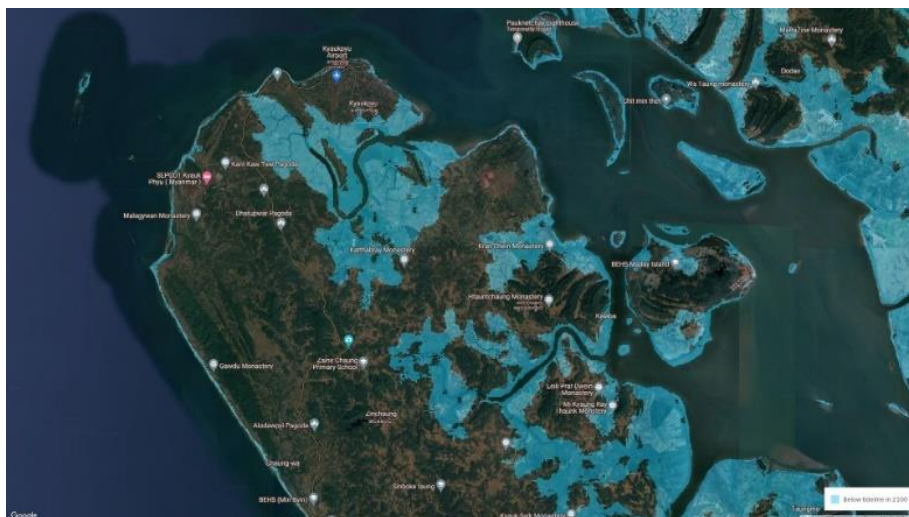


Figure 4-55: Land projected to be below tideline in Year 2100 at 4.5 °C in GWP

4.11.5 Cyclones and Storms

Myanmar ranks second out of 183 countries as countries most affected by extreme weather events (Horton et al., 2016). The Rakhine Basin within the Bay of Bengal is prone to cyclones and storm surges.

³⁷ <https://coastal.climatecentral.org/>

³⁸ <https://www.carbonbrief.org/explainer-how-scientists-estimate-climate-sensitivity/>

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Located inside the north Indian ocean storm basin and inside the Bay of Bengal, it is prone to tropical cyclones. Data detailing storm path and intensity for the period 1980 to 2022 is presented in the Figure 4-56.

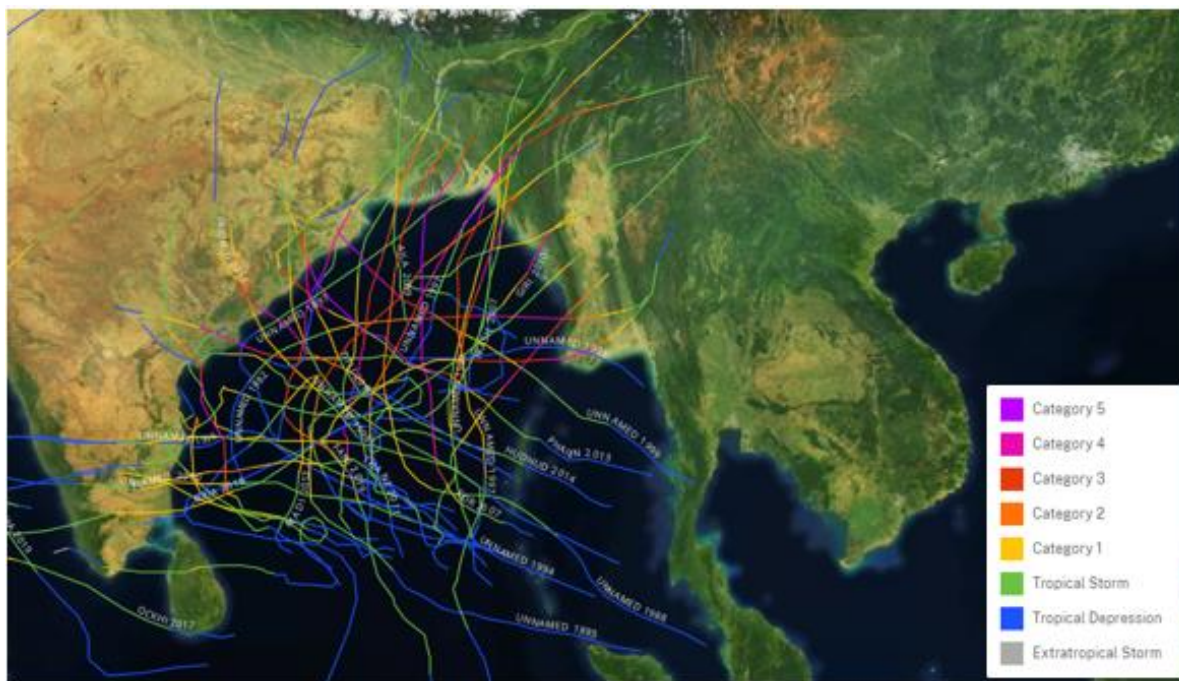


Figure 4-56: Historical storm tracks in Bay of Bengal since 1980s (Source: NOAA)

Over the last 40 years, over 35 cyclones have impacted coastal communities in Rakhine state. Several of these cyclones have led to the loss of lives and caused significant impacts to houses and the agricultural and fishing industries (Asian Disaster Preparedness Center, 2011).

IN 2010, cyclone Giri struck the Rakhine coast as a category 4 storm. Wind speeds, recorded when the storm made landfall, reached 177 km/hr at its peak and damaged or destroyed many houses, bridges and infrastructure. Across Rakhine state, 46,687 households (or 241,500 individuals) were affected, with the Kyauk Phyu Township being one of the most affected townships (International Federation of Red Cross and Red Crescent Societies, 2010). Even though the majority of Yanbye Island faces severe cyclonic storm risk, the port terminals, surrounded by islands, will be sheltered from the impact of cyclones.

4.11.6 Landslide

A type of natural disaster, landslides occur under the combined influence of geophysical, hydrological and meteorological factors. The proposed projects are to be implemented on the topographic confluence of Yanbye and Made Islands (Figure 4-57); naturally driven livelihood threatening and fatal landslide hazards have not been reported to date. However, this perception could be changed if topographic settings are disturbed by anthropogenic activities that result in hydrological changes in the area. The disaster risk and hazards to landslide hazards could escalate if geophysical and meteorological influences become the driving forces in the area.

CHAPTER 4: Description of the Surrounding Environment
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

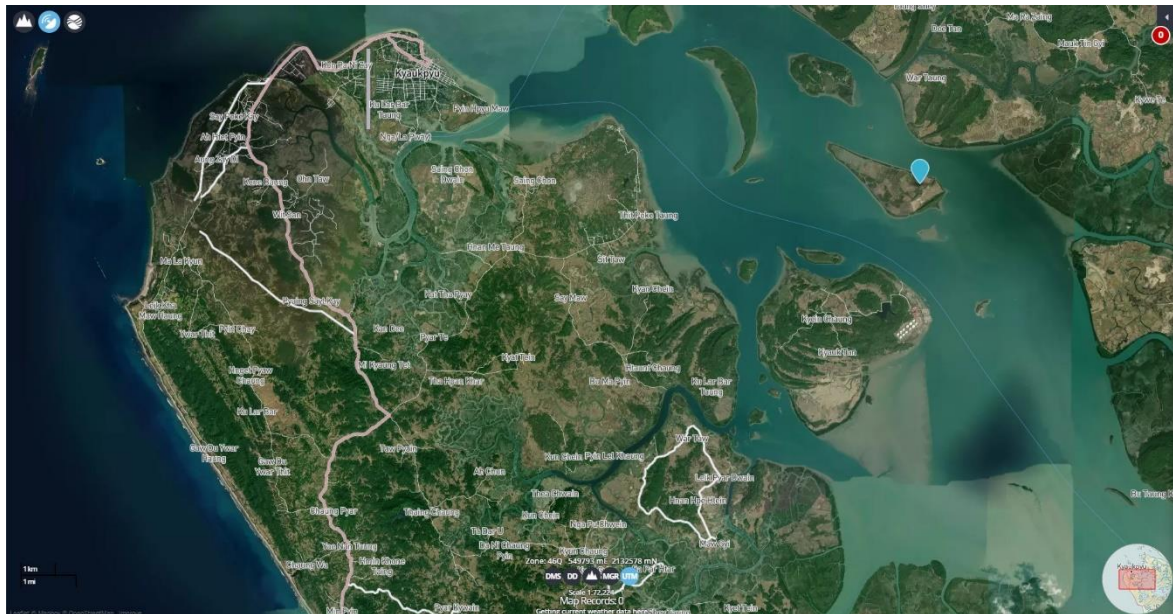


Figure 4-57: Topographic map of Yanbye and Made Islands (Source: USGS)

According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA³⁹) sources, landslides in Myanmar occur with the conjunction of heavy rains and floods that have been further aggravated by an already extremely challenging climatological and meteorological situation in the south-eastern parts of the country particularly in Kayin, Mon, and Tanintharyi division. This can occur with the absence of manmade hydrological changes

However, in states such as Chin, Kachin, Sagaing, kayah, and Kayin state, increasing landslides in recent years were reported to be due to human intervention in hydrological and topographical settings in the area by mining, mineral extraction, and township expansion on highlands, resulting in fatalities and livelihood loss in those disasters prone areas. Thus, there is high likelihood of landslide risks if Project activities and works have direct intervention to the topographic settings both on land and near shore without ensuring disaster risk reduction and mitigation measures are thoroughly introduced in environmental management plans in course of Project stages.

4.11.7 Wildfire

Wildfire, driven by natural phenomenon on the Rakhine coast is not reported due to the high humidity and the coastal climate. However, localized opened field burning is an underlying problem on Yanbye and Made Islands. Most importantly, manmade wildfire for farmland encroachment into forests and grasslands is one of customary agricultural practices prevalent across Myanmar. Myanmar.

4.11.8 Drought

Likewise, extreme heatwave associated with drought is not reported in Kyauk Phyu township of Rakhine state due to geographical location advantage and tropical climate⁴⁰ as per the Köppen-Geiger climate classification system. The area can experience alternate dry and wet periods in severe climatological conditions which lead to desperately hot and humid periods as the results of winds pattern from the Bay of Bengal.

4.12 Related projects and developments

The brief information about other major existing and future projects in the surrounding area of the proposed Project which may have impacts on the same environment and in connection with Cumulative Impact Assessment are described below.

³⁹ <https://reliefweb.int/disaster/fl-2021-000095-mmr>

⁴⁰ <https://www.nature.com/articles/sdata2018214>

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1. Myanmar-China Crude Oil Pipeline and Oil Terminal Project

The 300,000-ton oil terminal, which is jointly invested by CNPC and its partners, was built on Made Island in 2009, in support of the Myanmar-China Crude Oil Pipeline. The Myanmar-China Crude Oil Pipeline is jointly invested and constructed by SEAP and MOGE; their joint venture, South-East Asia Crude Oil Pipeline Company Limited (SEAOP), is responsible for its operation and management. The 771-kilometer-long pipeline extends from Made Island on the west coast of Myanmar to Ruili in the southwestern Chinese province of Yunnan, running through Rakhine State, Magwe Region, Mandalay Region, and Shan State. The Pipeline is 813 mm in diameter and is able to deliver 12Mt/a upon completion of the Phase I project, and 22Mt/a upon completion of the Phase II project, with a total annual delivery of 2 million tons to Myanmar. A 300,000-ton crude oil terminal has been built, with an annual capacity of 22 million tons. On April 10, 2017, the Myanmar-China Crude Pipeline project was officially put into operation.

2. Myanmar-China Gas Pipeline Project

The Myanmar-China Gas Pipeline Project is jointly invested and constructed by SEAP, MOGE, POSCO DAEWOO, ONGC CASPIAN E&P B.V., GAIL and KOGAS; their joint venture, South-East Asia Gas Pipeline Company Limited (SEAGP), is responsible for its operation and management.

The Myanmar-China Gas Pipeline starts at Yanbye Island on the western coast of Myanmar and ends at Ruili in China's Yunnan Province. Running in parallel with the Myanmar-China Crude Oil Pipeline, the crude pipeline is 1,016 mm in diameter with a distance of 793km in Myanmar. It can deliver 5.2 billion m³ per year upon completion of the Phase I project, and 12 billion m³ per year upon completion of the Phase II project. Pursuant to the cooperation agreement, four gas off-take stations (Kyauk Phyu, Yenangyaung, Taungtha and Mandalay) were established to unload less than 20% of the pipeline's total delivery in Myanmar. On July 28, 2013, the Myanmar-China Gas Pipeline became operational and started to deliver natural gas to the Myanmar market through its off-take stations.

3. Combined Cycle Power Plant Project

The Kyauk Phyu combined cycle power plant project with a capacity of 135 MW came into service and it can generate 1,000 million KW hours of power per year by using 22 million cubic feet of natural gas per day to meet the country's power need. The Project was developed by Kyauk Phyu Electric Power Company, a joint venture between Chinese state-owned firm Power China Resources Ltd. and Supreme Group Ltd. of Myanmar. It recycles the waste heat and uses seawater instead of underground water. The GIS substation is installed at the plant and so the power system will be stable and reliable. The power will be distributed via the 230-MW Kyauk Phyu sub-power station to houses, businesses, industries and power systems in Rakhine State.

4. Shwe Gas Project

Shwe gas project comprises the development of three fields, namely Shwe, Shwe Phyu, and Mya, which are located in in Blocks A-1 and A-3 in the Bay of Bengal, offshore Rakhine. The three fields are together estimated to hold 4.5 trillion cubic feet of gas. The Project is jointly owned by Posco Daewoo Corporation (PDC, 51%), Myanmar Oil and Gas Enterprise (15%), ONGC Videsh (India) (17%), GAIL (India) (8.5%), and Korea Gas Corporation (8.5%). Posco Daewoo has been producing gas from three fields located under a 30-year supply contract with Chinese state gas company China National Petroleum Corp. (CNPC).

5. LNG Power Plant Project

The Hong Kong-based CNTIC VPower Group's liquefied natural gas (LNG) power plant was built in Kyauk Phyu township to generate 150 MW of electricity. Construction of the gas kit which will supply gas to this power plant was also completed. Running on natural gas, the plant will have the advantage of much lower emissions and better efficiency than that of traditional fuels and will stand out as the more cost-effective power solution.

6. Yanbye Island Deep Sea Port, Road and Bridge and other components of KPSEZ

The Yanbye Island Deep Sea Port with 4 berths will have the estimated area of total project footprint is 96 ha. The components of the port are container terminal, multi-purpose terminal, heavy container yard,

CHAPTER 4: Description of the Surrounding Environment

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

quay apron area, general cargo yard, 66 kV transmission line, fire station, water treatment plant, sewage treatment plant, office building, electricity substation. The total design annual capacity of the Project is 2.72 million TEU of container a 2.6 million tons of bulk and general cargo.

An external access road connecting the deep-sea ports on Made and Yanbye Islands to the Industrial Park will be constructed. The whole length of access road is about 15 km (including the bridge linkage). The access road to Made Island Port Terminal of the Project is a four (4) lane road and the branch access road to Yanbye Island Port Terminal of the Project is a two (2) lane road. A bridge (length to be confirmed) connecting Made and Yanbye Islands will be constructed alongside the development of Made Island Port Terminal of the Project. The bridge with dual four (4) lanes is planned. The Industrial Park is also the component of KPSEZ.

7. EIA-type future projects in Kyauk Phyu Township

The following EIA-type future projects located in Kyauk Phyu township (Table 4-45) may also have impacts on the same environment and in connection with Cumulative Impact Assessment.

Table 4-46: EIA-type future projects located in Kyauk Phyu

No.	Project Name	Project Proponent	Location	Size	Latitude	Longitude
1.	Refinery	MCM Co., Ltd.	Wa Pyay	10 million metric tonnes per annum (mmta)	19° 17' 37.20" N	93° 41' 44.76" E
2.	Gas based Power Plant	MCM Co., Ltd.	A Lae Dwin	100 MW	19° 16' 50.17" N	93° 42' 53.59" E
3.	Oil Terminal	MCM Co., Ltd.	A Lae Dwin	11.67 acres of vacant, fallow and virgin land	19° 16' 38.16" N	93° 42' 42.00" E

Chapter 5: Key Potential Environmental Impacts and Mitigation Measures

Chapter 5. Key Potential Environmental Impacts and Mitigation Measures

5.1 Summary

Preliminary impacts were identified based on project works and activities during preconstruction, construction, operation and decommissioning / transfer phases to existing environmental, social, health, economic and heritage components in the study areas of the Project site.

Impacts were determined based on the life cycle assessment (LCA) method (Guinée et al. 2002: CML 2002 LCA Handbook), IFC Performances Standards, preliminary baseline data investigations to confirm presence/ absence of sensitive receptors, and also from feedback gathered during public participation and scoping workshops. There are key potential positive as well as negative impacts on the biophysical, and social environment including health and culture aspects due to different Project activities. The positive impacts can be improved by the enhancement measures and negative impacts can be avoided or reduced by the mitigation measures.

During the pre-construction phase, the majority of land acquisition and resettlement effects will be experienced by Yanbye Island Residents. During the construction and operation phases, the Project will have negative impacts such as elevated dust and noise levels, traffic disruptions, solid and liquid construction waste, soil erosion and sedimentation, loss of aquatic habits, loss of livelihood (fishery), and community and worker safety that can be managed effectively with standard construction and operation practices. The potential impacts and mitigation measures listed in this scoping stage are not meant to be exhaustive, and will be confirmed throughout the ESIA process, and through consultation and engagement with potentially affected communities, households, and stakeholder groups in particular

Although the Project has potentially negative impacts on the biophysical and social environment, it is also beneficial to the local community in various ways. The benefits for the community can be enhanced by the Corporate Social Responsibility (CSR) activities. The Project Proponent will allocate budget to support and implement public welfare programs which will cover vocational training, local community development, anti-disaster and emergency rescue, medical care and education, etc.

In the scoping stage, since exact technology and configuration for each individual component of Yanbye Island Port Terminal of the Project facility is not available so far, the comprehensive recommendation for potential mitigation measures towards identified adverse and negative impacts cannot be made at this point. Therefore, in the EIA stage, based on full project blueprints and detailed engineering design, the comprehensive impact and risk assessment including residual, cumulative, transboundary, human rights related, and livelihoods related impacts, and associated mitigation measures will be performed and addressed. Moreover, Environmental and Social Management Plans (ESMPs) and sub-plans will be developed in details in the EIA report.

5.2 Procedure of Scoping for Environmental and Social Impact Identification

Preliminary impacts were identified based on the potential impact on the identified Valued Environmental Components (VECs) for project works and activities during preconstruction, construction, operations and decommissioning/transfer phases to existing environmental, social, health, economic and heritage components in the study areas of the Project site. Impacts were determined based on the life cycle assessment (LCA) method (Guinée et al. 2002: CML 2002 LCA Handbook), IFC Performances Standards, preliminary baseline data investigations to confirm presence/ absence of sensitive receptors, and also from feedback gathered during public participation and scoping workshops. Type of impacts can be either negative or positive impacts. The difference between these impacts can be distinguished as follows;

Negative Impacts: Situations and circumstances in which Project driven activities and works lead to harm or damage to any settings (i.e., science, business, and policy) of the environment in which changes are irreversible/reversible.

Positive Impacts: Situations and Circumstances in which project driven activities and works are either harmless or are advantageous to the environment through the merits of science, business, and policy.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

5.3 Methodology and Approach to be taken in EIA study

The ESIA shall provide information on potential impacts (direct, indirect and cumulative) and the magnitude and frequency of potential impacts on physical, biological, socio-economic, cultural and heritage resources resulting from preconstruction, construction, operation and decommissioning/ transfer phases of the proposed Project.

5.3.1 Impact Identification and Assessment Methodology

In addition to the impacts identified in the scoping report, more aspects and their associated impacts of the activities on the physical, biological, social and socio-economic environment, health and culture will be identified considering a life cycle perspective.

5.3.2 Impact Significance Assessment

The aspects that have or can have a significant impact is determined by using established criteria. The impact significance will be assessed by using the following methodology. The assessment will also use standardized predictive methods, such as models, to determine the specific range of impacts on environmental and socio-economic resources.

The impact level will be calculated based on scores (high, medium, low and negligible) of extent, duration and magnitude, reversibility and frequency of effects.

Extent: The spatial scale over which the impact will occur.

Duration: Time scale over which the consequence of the effect on the receptor/s will last. [Note that this does not apply to the duration of the Project activity]. The terms 'Intermittent' and 'Temporary' may be used to describe the duration of an impact.

Magnitude: A term describing the actual change predicted to occur to a resource or receptor caused by an action or activity or linked effect.

Reversibility: This describes the degree to which an impact on an environmental parameter can be successfully reversed upon completion of the proposed activity.

Frequency of effects: This describes the frequency of occurrence of an impact.

Sensitivity: A rating given to the importance and/ or vulnerability of a receptor (e.g., conservation value of a biodiversity feature or cultural heritage resource or social receptor).

- Social Receptors: Individuals, communities or groups of stakeholders
- Ecological Receptor: Species, habitats or ecosystems including processes necessary to maintain ecosystem functions
- Physical Abiotic Receptors: Water quality, sediment quality, air quality, noise levels

The levels of impact significance will be calculated by multiplying impact level scores and receptor sensitivity scores. Positive Impact has a positive effect on the environment or socio-economic conditions.

Table 5-1: Criteria used to determine Impact Significance

Criteria	Score	Detail
Extent	3	High – Area of impact is beyond 5 km and impact extends to regional and national level
	2	Medium – Area of impact is beyond the Project area but is in a limited area of 1-5 km
	1	Low – Area of impact is in the Project area within a radius of 1 km
Duration	3	Long Term – Permanent impact and impact will remain after decommissioning of the Project. Impact occurs in long term duration (> 5 years)
	2	Medium Term – Impact can be reversible overtime (1-5 years), period of impact occurrence is within the Project period, impact occurs over mid-term duration (1-5 years)

CHAPTER 5 Key Potential Environmental Impacts and Mitigation

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Criteria	Score	Detail
	1	Short Term – Impact can be quickly reversible (< 1 year), period of impact occurrence is less than the Project period, impact occurs in short-term duration (<1 year)
Magnitude	3	High – Impacts predicted to exceed resilience limits of social and environmental components, causing a considerable change in existing conditions of local environment beyond the range of natural variability
	2	Medium – Impacts predicted to be considerably above background conditions, causing a detectable change in social and environmental components of the Project area within the range of natural variability
	1	Low – Impacts predicted to be somewhat above typical background conditions, but within established standards and social perceptions
	0	Negligible – No change from background conditions predicted
Frequency	3	Continuous – Impacts occurring continuously over the assessment period
	2	Frequent – Impacts occurring repeatedly over the assessment period
	1	Infrequent – Impacts occurring once or more
Reversibility	3	Irreversible – Impacts which do not diminish upon the removal of impacts and do not diminish with time
	2	Partially reversible – Impacts remain upon the removal of the source of impacts but diminish with time
	1	Reversible – Impacts diminish upon the removal of the source of impacts
Receptor Sensitivity	3	High – High value/sensitivity receptor or resource, rare or endangered species or habitat impacted on a national or international level, exceeding standards, large permanent change in human use and/or quality of life and/or livelihoods at the local or regional levels, long-term or no reversible.
	2	Medium - Medium value/sensitivity receptor or resource, impact disturbs an area that has a value for conservation or causes change in species diversity. Impact important on a local or regional level, within standards, moderate change in human use and quality of life values at moderate level over a long-term duration, reversible over medium-term.
	1	Low - Low value/sensitivity receptor or resource, impact disturbs degraded area or slightly disturbs area with value for conservation, causes small changes in species and diversity, within standards, small local change in human use and quality of life values over a short-term duration, reversible over short-term.
	0	Negligible – no detectable sensitivity

Analysis of Impact Level

Impact Level = Extent + Duration + Magnitude + Frequency + Reversibility

Table 5-2: Impact Level Score

Total Score for Impact Level	Impact Level	Score
11-15	High	3
7-10	Medium	2
3-6	Low	1

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Receptor Sensitivity Ranking

Table 5-3: Receptor Sensitivity Score

Level of Receptor Sensitivity	Score
High	3
Medium	2
Low	1

Impact Significance Evaluation

Significance of Impact = Impact Level x Receptor Sensitivity

Table 5-4: Significance Level Score

Significance Level of Environmental Impact			Impact Level		
			Low	Medium	High
Receptor Sensitivity	Low	1	Negligible (1)	Low (2)	Medium (3)
	Medium	2	Low (2)	Medium (4)	High (6)
	High	3	Medium (3)	High (6)	High (9)

Table 5-5: Categories of Impact Significance

Significance Level	Definition
High	Impact is classified as high and can cause numerous effects. Major impacts affect an entire population or species in sufficient magnitude to cause a decline in abundance and/or change in distribution. Large permanent change in human use and quality of life values at a local or regional level. Fatality from an accident or occupational illness. Severe environmental damage requiring extensive rehabilitation, recoverable within 2-5 years, or exceedance of a statutory or prescribed limit over 2-5 years. Impacts can be managed or resolved by mitigation measures.
Medium	Impact may result in changes that affect the value of resources and environment. Moderate impacts affect a portion of a population and may bring about a change in abundance and/or distribution but does not threaten the integrity of the population. Moderate change in human use and quality of life values at a local level over a medium long-term duration. Major injury or health effects (including Permanent Partial Disability). Impacts exceed a statutory or prescribed limit but can be managed or resolved by mitigation measures to almost insignificant effects within 12 months.
Low	Impact may result in changes in resources and environment, but this change does not decrease value of these resources and environment. Minor impacts which affect individuals within a population over a short period of time. Minor change in human use and quality of life values at a local level over a short-term duration. Minor injury or health effects (Lost Time Injury). Impacts can be managed or resolved by mitigation measures without permanent effect or exceedance of a statutory or prescribed limit.
Negligible	Impact has a small / limited amount of environmental damage which can be controlled within the site.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

5.3.3 Risk Assessment Methodology

Significant aspects / impacts can result in risks associated with either adverse impacts (threats) or beneficial impacts (opportunities). Results of the Impact Assessment will be analysed and evaluated using quantitative and qualitative techniques to analyse the risk considering two uncertainty factors.

- i. Likelihood - Probability of Occurrence
- ii. Consequence - Severity of Impact

(Refer to the Table 5-6: Consequence/probability matrix)

Each risk will be categorized as either Extreme, Medium, Low using a combination of Likelihood and Consequence factors to establish an overall risk score for all risks listed. The risk score will be used to establish priority in addressing identified risks. (Refer to the Table 5-7: Risk ranking matrix)

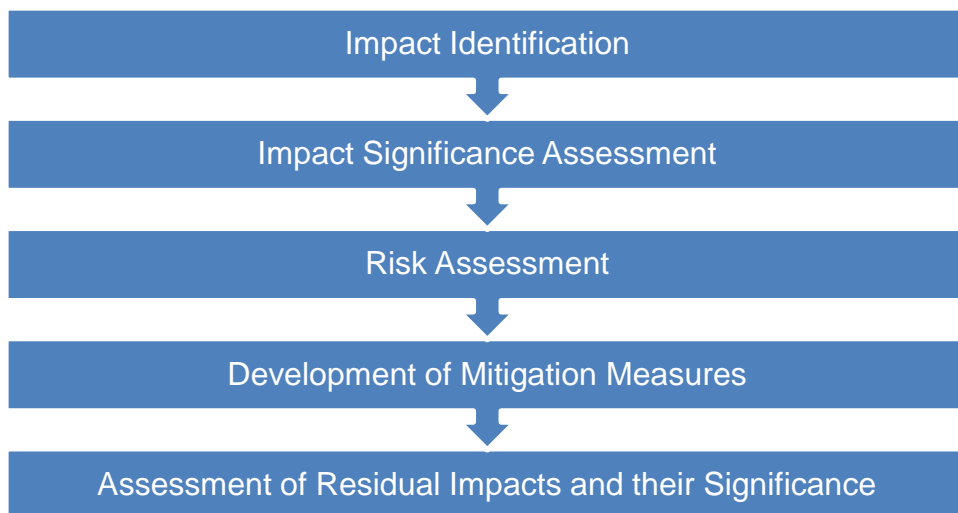
Table 5-6: Consequence/probability matrix

Highly Probable / Almost Certain	3	3	6	9
Possible / Occasional / Moderate	2	2	4	6
Rare	1	1	2	3
Likelihood Probability of Occurrence		1	2	3
	Significance of Impact (Consequence) / Severity of Impact	Low / Marginal	Medium / Serious	High / Extreme

Table 5-7: Risk ranking matrix

7 – 9	High	Requires senior management attention / Requires detailed research and management planning at an executive level
4 – 6	Moderate	Can be managed by specific monitoring or response procedures
1 – 3	Low	Can be managed through routine procedures

The process diagram of impact assessment methodology is shown below.



KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

5.4 Key Environmental and Social Impacts

This section will present preliminary impacts identified, the mitigation measures for negative impacts, improvement proposals for positive impacts and monitoring programs. The potential impacts listed in this section are not meant to be exhaustive, and will be confirmed and extended to add important ones throughout the ESIA process, and through consultation and engagement with potentially affected communities, households, and stakeholder groups in particular.

5.4.1 Environmental and Social Impacts and Mitigation Measures Needed during the Pre-Construction Phase

5.4.1.1 Biological Environment

1. Flora/Fauna and Ecosystem

Geophysical survey (e.g., seismic survey, excavation and drilling) and ESIA study can damage some plants and some animals and some parts of habitats and can disturb on animal and marine ecosystem.

Mitigation Measures

The surveys will be carefully conducted to find the magnitude of impacts and measures reduce impact on biodiversity and ecosystem (e.g., foraging, roosting and resting site).

5.4.1.2 Social Environment

1. Land Acquisition and Resettlement

It is expected that the majority of land acquisition and resettlement effects will be experienced by Yanbye Island Residents. Feedback during consultation and engagement activities identified the need to ensure the land acquisition process is transparent and compensation is provided to landowners at fair market value.

Project-related land acquisition and resettlement have the potential to cause the following impacts:

- Loss of land as source of livelihoods by households and communities
- Loss of land as source of firewood for household heating (to distribute heat to room) and cooking.
- Loss of land of pastures that can impact negatively on livestock breeding in the villages
- Loss of community infrastructure
- Loss of community cohesiveness, health, and wellbeing as a result of resettlement, and
- Changes to cultural, ethnic, and religious composition of host-communities to resettled populations.

Mitigation Measures

The Government of Myanmar will manage land acquisition and resettlement for the Project in accordance with applicable legislation and standards. Myanmar's National Land Use Policy promotes inclusive public participation and consultation in decision-making related to land use and management.

The National Land Use Policy recognizes customary land use tenure systems and rights of ethnic nationalities. Customary lands of ethnic groups that fall under current forest or farmland or vacant, fallow, and virgin land classifications will be reviewed, registered, and protected as 'customary land.' Leaders of ethnic groups with knowledge of customary land use practices will be consulted, and ethnic leaders, elders, and women will be involved in decision-making processes related to land tenure rights.

The Ministry of Home Affairs will arrange for the survey and transfer of land that is located in the area where a SEZ is specified (Pyidaungsu Hluttaw, 2014). A Ministry of Home Affairs representative will participate in the SEZ Committee, and will work with Kyauk Phyu Township Administration and Village Tract leaders to ensure the land acquisition resettlement and compensation process conforms to Myanmar's requirements and protects land use, tenure, and rights. The Project Proponent will assist KPSEZ MC in this process. The Project will seek to mitigate negative impacts related to land acquisition and resettlement through the following measures:

- The Project will include and consider existing land use plans and livelihoods, land uses, land

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

use rights, land availability, protected areas, encroachments, and other socio-economic considerations, as related to land acquisition and resettlement.

- Coordination and communication with Ministry of Home Affairs, as well as relevant Land Committees to ensure Myanmar and international standards and best practices are being met with regards to land acquisition and resettlement.
- Coordination and communication with local government representatives to measure and monitor impacts related to land acquisition and resettlement.
- Robust grievance mechanism to ensure open communication channel for filing complaints or grievances.

2. Temporary Use of Land

The mobilization of construction equipment and construction materials will require space for storage and parking of construction vehicles and equipment, construction material storage yards, and small labour camp.

Mitigation Measures

The land for temporary use will be selected by considering the need to avoid environmental impact and public inconvenience. These locations will comply with local laws and regulations, will get approval from local authorities and will be situated away from highly populated areas, water bodies, natural flow paths, residential areas. The selection of temporary lands will be at least 50m away, depending on practicability as per local site conditions from highly populated areas, water bodies, natural flow paths, agricultural lands, important ecological habitats and residential areas. Removal of trees and green cover vegetation will be minimized during preparation of facilities where possible.

When protected species are identified, relocation and rehabilitation are performed according to Rehabilitation and Vegetation Management Plan.

3. Psychological impact

Of the four villages in the inner zone, residents of Sittaw, Kyan Chein and Thit Poke Taung and a few households of Say Maw rely on fishing. The residents are also overwhelmed with worries that they may lose their fishing grounds when the DSP Project is undertaken. It is not only the fishers who are feeling worried about their livelihoods, paddy farmers whose farmlands are near the proposed deep-sea ports are also worried.

Mitigation measures

Effective measures are needed to deal with this concern. If the fish migrate to other water areas, perhaps deep seas, fishers also need to move for fishing. Under CSR and community development initiative scheme, the project developer is encouraged to set financial contribution for subsidies and provisions for subsistence fishing to support fishery livelihoods of those households of the communities affected by project development. Another major requirement of the boatowners is fuel, which will be made available at reasonable price.

Concrete measures will be taken for reclaiming land near the river, outside the Project area, and allotting this land to the farmers whose lands are confiscated. Farmers are not financially robust enough to build embankments to prevent river water from entering cultivated areas.

5.4.2 Environmental and Social Impacts and Mitigation Measures Needed during the Construction Phase

5.4.2.1 Physical Environment

1. Water Quality (Water Pollution)

During the construction phase, water quality could be impacted due to spills and leaks, surface runoff during earth works, cleaning and washing, dredging activities, construction activities and garbage and sewage contamination. Concentration of water pollutants across different Project phases and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit and leading international standards.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Mitigation Measures

The following mitigation measures will be applied to reduce impacts on seawater quality from construction activities, including the sedimentation and suspended sediments, dredging, spills and discharge-related impacts:

- Erosion and sediment control measures will be proposed to minimize sediment release resulting during construction of new navigational areas, conferred dam, and terminal foundation structures.
- Silt curtains and/or other industry good practice management controls will be used to restrict the spread of sediment released during construction processes, particularly when working in mangroves, or adjacent to the reef and seagrass areas of shallow waters and fragile aquatic ecosystem.
- Selection of dredging equipment using a combination of trailing suction hopper dredgers, cutter suction dredger, and bucket excavator or grab on barges by the contractor will be appropriate to the depths and material types to be dredged and to minimize the creation of plumes.
- Marine habitat or seafloor disturbance and mangrove clearing for the construction of the multi-purpose terminal facility will be controlled and supervised as minimum as possible for construction.
- Marker tape will be used to identify project boundaries that warn not to be encroached by construction works nor workers.
- The Project will adhere to international environmental guidelines or similar with respect to dredging and disposal of dredged material (including protocols for investigating contamination and suitability of material for disposal, alternative options for use of material, management of dredging operations and site selection).
- Water management measures will be in place during construction

2. Air Quality (Air Pollution)

Air emissions will be generated from transport equipment moving staff and material to site, various construction activities at terminal construction location, use of generators, earth moving machinery, tipper lorries, cranes, JCBs etc. for various construction and earth moving activities, and Odors related to use of fuel - during storage and use. Ambient air quality across different Project phases and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit and leading international standards

Mitigation Measures

Construction phase atmospheric emissions will be managed as follows:

- Incorporate fugitive dust and emission management procedures within the air emissions management plan for the terminal facility site including all infrastructures involved under the Project scheme.
- Speed limits on site will be controlled by speed limit signs and warnings.
- Vehicles will be confined to marked trafficable areas which will be maintained in a damp and compacted condition, as required, to enhance safety; and manage to minimize dust and gases emission.
- Water trucks will be used to keep trafficked surfaces (i.e., terminal surface) damp when conditions are dry, i.e., when generation of dust is more likely.

3. Noise and Vibration (Noise Pollution)

Noise and vibration during the construction phase is generated from vehicular traffic movement, alarms, sirens, power generating equipment, pile driving activities and dredging and reclamation activities. Ambient Noise Quality across different Project phase and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit and leading international standards.

Mitigation Measures

- The Project will adhere to specific criteria for construction and operations that are aligned to the NEQG permissible standards which satisfied the IFC (2007) and WHO (1999) guidelines limit on environmental noise management.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- The boundary noise limit will be set at 65 dBA L_{eq} during the day period and 45 dBA L_{eq} during the night from noise generated from the construction and operation of noise generating sources to protect receptors, especially vulnerable groups residing nearby. Site perimeter fence line will be constructed around Project boundary to coincide with the calculated night-time noise limit of 45 dBA L_{eq} .
- Construction action and operation of heavy vehicles/machines of the project's sites including roads, access ways, facilities and auxiliary plants will implement the following noise mitigation and management measures, where appropriate:
 1. Construction work will be carried out under the schedule which is developed in conformity with enforced law and public consent.
 2. Where practical, noise mitigation measures will be implemented at drilling sites to minimise the noise level as much as possible. **Local citizens will be informed construction schedule and purpose at least 7 days prior to drilling activities.**
 3. Construction plant and equipment will reflect industry good practice, with OHS operating and monitoring standards set out in the environmental management plans to be developed prior to construction
 4. Noise suppression devices on construction vehicles and equipment will be fitted and maintained, where required.
 5. Blasting mitigation measures will be described in a noise management plan that does not compromised community health and safety.

4. Soil and Marine Sediment Degradation (Soil and Sediment Pollution)

Soil and sediment degradation can be caused due to dredging activities, land Reclamation from dredge spoils, surface runoff during earth works, garbage and Sewage contamination, plastic contamination, clearing of trees and vegetation and wind / dust movement. Soil and Sediment quality across different Project phase and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit (if any) and leading international standards.

Mitigation Measures

Civil works will generally be accomplished more quickly, safely and at less cost by limiting landform changes, and so it has been a Project planning objective to locate channel routes as close to existing or previously used roads and channel as practical where works need to break new ground and marine territory, the normal engineering, planning and design preferences will have the effect of reducing land disturbance to a minimum. For example:

- Routing Navigational area and access ways along adjacent to Thanzit Channel; and shortest ROW along flat terrain rather than include side slopes.
- ROWs and access ways for maritime navigation route will be located within or adjacent to existing disturbed areas where practicable
- Watercourse crossing construction management plans will be incorporated into the water management plan to address the sensitivities of crossings on an individual watercourse basis. Plans will consider, where relevant:
 1. Watercourse diversions requirements.
 2. Disturbance limits.
 3. Equipment limitations.
 4. Erosion control measures.
 5. Fine-scale routing at crossing sites to limit disturbance of particularly large and established riparian vegetation and complex bank habitat structure.
 6. Delay of clearing of banks for temporary vehicle crossing until the need for the crossing is imminent, where practicable.

5. Light Pollution

Light pollution can be occurred due to setting up of temporary lighting at night time for construction related activities. Lighting system installation for night visibility configuration shall be inspected periodically lest usable light pollutes well-being of terrestrial and marine fauna across different Project phase.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Mitigation Measures

During construction, major measures to mitigate potential impacts to minimize light pollution in the Project site can be anticipated. The following mitigation measures will be adopted for both fixed and temporary lighting.

- Adopt the lowest safe lighting levels possible for task being undertaken.
- Using lighting for construction workers in the absence of daylight for visibility and safety for sites where necessary.
- Use a high-quality luminaire with good optical direction control where required
- Use the lowest possible mounting for the luminaire for the required level of illumination for visibility and occupational safety.
- Direct luminaires into the area to be lit (light from the boundary inwards).
- Ensure the luminaire is mounted that the light propagation is targeted to ground surface, where **possible, and objects and avoid tilt, where possible, to minimize light propagation** to the horizon.
- If required, custom shields are designed through consulting among optical experts and manufacturer.
- Turn off lighting when not required by installing intermediate switches for control from the main system.

6. Landscape and Visual Impact

The obstruction of access to the Project area and facilities to be constructed can impact on landscape and visual effect. The integration of any new features or changes in the landscape can have negative impact on visual amenity of local communities. Pollution load on sensitive locations will increase. Barriers, Walling, Greening, and Buffers areas will be inspected periodically lest visual appearance annoys locals residing in nearby communities.

Mitigation Measures

Local communities will be consulted during the construction phase to provide information and receive any concerns that can be acted upon. Their visual amenity may be protected by the erection of visual screening, such as vegetation or bunding. However, such screening will not be installed where it would impede safety or security requirements.

7. (a) Greenhouse Gases Emission

The construction progress can contribute to the climate change potential and significance.

Global Warming Potential (GWP) Eq. CO₂ kg emission will be evaluated for climate change impacts; but the subject is completely dependent of Project emission inventories that must be provided by Project Proponent.

Mitigation Measures

Mitigation measures to minimize CO₂ emissions from the construction phase include the following:

- Consultation with a wider inclusion and participation to both internal and external stakeholders/rights holders to ensure all project relevant GHG formation/scopes is included in the development of the GHG emission reduction plan and;
- Implementation of a Traffic Management Plan which will form part of the specification for the construction works.
- Turning off vehicular engines when not in use unless the idle function is necessary for security or functionality reasons;
- Regular maintenance of plant and equipment.
- Undertake regular technical inspection of vehicles to ensure they will perform efficiently.
- Materials will be selected on the basis of recyclability and environmental friendly merit where possible even in the design stage.

(b) Microclimate

Microclimate alteration is identified noticeable scale. Adverse microclimate impacts will be evaluated by means of mean temperature (Degree Celsius) changes and fluctuation. Benchmark temperature is

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

taken as those figures of preconstruction period which will be compared against annual increment or fluctuation.

Mitigation Measures

Mitigation measures to minimize microclimate change driven by formation of heat island or reservoir in the construction structures by considering interplay of climatic factors such as soil and air temperature, solar radiation, air humidity, soil moisture, wind, and rain at local levels. Sample phase consideration include;

- Integrate Greening Measures.
- Include green and sustainability design principles, where appropriate, in the Project Engineering and Environmental Management Plan.

8. Coastal Hydrology

Coastal hydrology can be impacted due to improper dumping of construction waste materials, improper dredge disposal locations, incorrect land levelling and reclamation techniques, building of shore protection measures to control erosion, change in sedimentation and siltation patterns, beach erosion / accretion, Impact on tidal exchange and flow, choking of inland drainage during rainy seasons leading to flooding and hydrological impacts, and barrier to movement of species that use the natural habitats to switch between marine and terrestrial water environments for breeding and feeding. Adverse impacts to hydrological settings will be evaluated by means of coastal process changes and changes in hydrological settings of project sites and vicinity. Benchmark bathymetry is taken as those figures of preconstruction period which will be compared against annual alternation or fluctuation to river morphology.

Mitigation Measures

During the construction phase, the following measures will be implemented to mitigate potential impacts to the existing hydrological and sediment transport regime within potentially affected catchments:

- Clearing of riparian vegetation will be limited to the amount necessary to undertake construction activities in a safe manner.
- Delineate environmentally sensitive areas to prevent construction labours and workers from entering outside of project areas for any non-construction activities to minimise damage to vegetation.
- At new or improved road crossings, maintain connectivity of wet season flow in watercourses, avoiding the creation of high-velocity 'chutes' or step-down cascades in order to enable fish migration.
- As far as practicable, disturbed areas will be reinstated to former landforms and revegetation of exposed areas will occur as soon as practicable once construction activities are completed in any particular location.
- Areas prone to erosion will receive particular attention.
- All watercourse crossings, diversions and culverts will be designed to accommodate expected stream flows. Similarly, the drainage system within the multipurpose terminal Facilities site will be designed to minimise changes to flow regimes and sediment transport of existing channel.

Specific design details will be developed designed for coastal environment management plan along with pertinent environmental management plans for contractors to implement during construction. Adherence to management plans will form part of the environmental conservation obligations and will be monitored under the proposed environmental management, monitoring and reporting program.

9. Biological Hazards

Biological hazards can be caused due to removal of Vegetation and trees, dredging, breakwater construction, change in land use, direct impact on exiting terrestrial and marine fauna leading to fatality, and new species can become predatory in nature and wipe out local species. Biological Hazards will be evaluated for all Project phases through accident, incident, emergency and contingency report.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Mitigation Measures

The project will establish and enforce project-wide quarantine management protocols for inspection of equipment and imported materials and ballast management.

10. Traffic Congestion (Land and Maritime)

The construction activities can cause to traffic volume Increment in both land and maritime transportation. Traffic impacts in both off-road and on road traffic is envisaged during construction. Traffic (both land and maritime) monitoring and management report will be evaluated for timely responses, management, and reporting of both traffic mode applied for proposed Project.

Mitigation Measures

Mitigation measures proposed during the construction phase of development are:

- Traffic Construction Management Plan
- Daily and weekly working hours;
- Travel arrangements for construction personnel;
- Appropriate on-site parking arrangements for construction personnel to prevent overspill parking on the local road network;
- Temporary construction entrances to be provided;
- Temporary construction signage to be put in place and maintained; and
- Any proposed traffic management measures such as temporary traffic lights and signage on any public roads.

11. Resource Depletion

Land and marine use, water and consumable materials and energy can be negatively impacted due to the construction activities. Resource depletion and toxicity will further be evaluated from material balance and inventories of Project from procurement to disposal stage.

Mitigation Measures

Selected mitigation measures will reduce resource depletion during the operation phase by promoting the followings measures in every project decision where applicable:

- Reduction in consumption
- Save electricity
- Opting power-efficient devices
- Avoid plastic
- Minimize deforestation
- Recycle and reuse
- Reduce waste
- Renewable energies

12. Waste Management

The construction activities will generate general construction waste, inert waste, hazardous waste, uncontrolled discharges and domestic waste. Waste Management will further be evaluated from material balance, Material safety data sheet and inventories of Project from procurement to disposal stage.

Mitigation Measures

Waste Management Mitigation measures proposed during the construction phase of development are:

- Continuously review and implement any required changes in the waste management plan in order to avoid and minimize the potential effects of vessel generated wastes.
- Provide adequate reception facilities at the port.
- Encourage the responsible management of waste, including minimization and recycling, at the point of generation on ships, reception in ports/harbours, transportation and disposal, and ensure that port and harbour employees and users dispose of wastes responsibly in facilities provided.
- Ship's Waste Management Plan will continuously evolve to effectively capture materials generated to help ensure that recyclable materials are handled and diverted accordingly.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- Waste management plan is under preparation. The full mitigation measures will be proposed in EIA report.
- Develop specific Construction Waste Management Plan
- If possible, select suppliers whose products' packaging are minimal or direct them to participate in a packaging waste recollection scheme.
- Waste Management Plan will included in EIA report.
- Waste materials will be segregated on-site into appropriate categories.
- Appropriate receptacles and recycling bins will be clearly labelled for the collection and segregation of each of these waste materials and will be provided throughout the development and open space areas, as appropriate. Wastes will be stored in these receptacles in a designated, easily accessible area of the site until collection by an appropriately licensed waste management Contractor.
- All waste types and amounts will be recorded and reviewed at regular intervals, to allow for continuous analysis and review of procedures that will be made to reduce waste to landfill, increase the percentage of recycling and reduce waste overall as much as possible.
- All wastes generated will be managed in accordance with appropriate waste management legislation and policy, and will be transported and recovered / disposed of by licensed waste management Contractors.

5.4.2.2 Biological Environment

1. Depletion of biotic resources and loss of biodiversity

The major threats of constructing a port construction are the impacts to marine biodiversity which may contains the loss of habitat (deforestation, benthic), fragmentation (mangrove), soil transported to the sea (can cause turbidity) and dust dispersion on land which may cover plants and change terrestrial habitats.

Before reclamation, the site is cleared, which leads to the destruction of mangrove species within the reclaimed area. This could lead to permanent loss of habitat for marine organisms and wildlife. The destruction of mangrove forests that accompanies the reclamation of tidal swamplands can have serious adverse effects on estuarine fisheries due to loss of habitat for spawning, foraging and nursery grounds of aquatic organism. The potential impacts effect on marine biodiversity and mitigation measure were described as follows.

The Project will follow IFC Performance Standard 6 for the mitigation hierarchy that includes biodiversity offsets, which may be considered only after appropriate avoidance, minimization, and restoration measures have been applied for the protection and conservation of biodiversity. Suggesting no-net loss of mangroves, the Project will replant mangroves in other areas.

1.1 Forest Cover (Coastal mangrove)

Potential negative impacts

- The construction of a deep sea port may require clearing of land, dredging, and filling of coastal areas, which can result in direct loss or fragmentation and destruction of mangrove habitat. Destruction of mangrove habitat can result in loss of biodiversity and ecosystem services, such as shoreline protection, carbon sequestration, and water quality regulation.
- The construction of a deep sea port may alter the hydrological processes of mangroves, such as changes in water flow, sedimentation patterns, and tidal dynamics, which can impact the growth and survival of mangrove trees, as well as the composition and structure of mangrove ecosystems.

Mitigation measures

- Minimizing land clearance, dredging, and filling activities to reduce direct impacts on mangroves.
- Implementing mangrove restoration and rehabilitation measures, such as replanting mangroves in impacted areas, to compensate for the loss of mangrove habitat and promote recovery of the ecosystem.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Maintaining natural hydrological processes, such as maintaining adequate freshwater inflow to mangroves, to ensure their health and functioning.

1.2 Plankton

Potential negative impacts

- High turbidity levels can reduce the penetration of sunlight into the water column, limiting the availability of light for phytoplankton to carry out photosynthesis which can alter the species composition and diversity.
- Suspended sediments can adsorb and sequester nutrients, making them less accessible to phytoplankton for uptake.
- Turbidity can disrupt the timing and success of phytoplankton reproductive cycles, leading to changes in phytoplankton population dynamics and potentially affecting higher trophic levels that depend on phytoplankton as a food source.
- High turbidity levels can reduce the visibility of phytoplankton, making it harder for zooplankton to locate and feed on their food source.
- Turbidity can disrupt diel vertical migration patterns of zooplankton in the water column to optimize feeding and avoid predation.

Mitigation measures

- Implementing sediment control measures such as silt fences, sediment basins, sediment ponds, and sediment curtains can help to prevent sediment from entering the water column and causing turbidity.
- Constructing settling ponds or sedimentation basins can help to allow sediment-laden water to settle and the sediment to settle at the bottom before the water is discharged.
- Utilization of dredging techniques that minimize sediment disturbance, such as hydraulic dredging or suction dredging, which can reduce the amount of sediment resuspended in the water compared to mechanical dredging methods.
- Properly managing dredging activities, including sediment removal and disposal, can help to minimize the amount of sediment released into the water column. Spoil (sediment) management plans can include strategies such as dewatering sediment before disposal, using geotextile tubes to contain sediment, and selecting appropriate disposal sites to minimize turbidity impacts.
- Planning dredging activities during periods of dry weather periods and low tide or reduced water flow to minimize the dispersion of sediment-laden water. Avoiding dredging during periods of high tide or strong currents, which can increase the spread of sediments in the water.

1.3 Benthic Communities

Benthic communities include macroinvertebrates, molluscs and gastropods.

Potential negative impacts

- Construction activities such as dredging, filling, and shoreline modification can result in direct habitat loss for macroinvertebrates and molluscs.

Mitigation measures

- Activities that cause physical disturbance to the benthic habitat, such as dredging, trawling, or anchoring, will be minimized or avoided altogether.
- The loss of habitat is a major factor contributing to the decline of many species. Protecting and restoring wetlands, streams, and other aquatic habitats can help ensure that benthic organisms have suitable places to live and reproduce.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1.4 Fishes, Sharks, Rays and their Habitats (Breeding and Nursery)

Potential negative impacts

- The activities such as dredging, land reclamation, and shoreline modification, which can result in the loss and alteration of fish, shark, and ray habitats. These activities can destroy or degrade critical habitats of mangroves, which is important nursery and feeding grounds for many fish, shark, and ray species.
- Pile driving, vessel traffic, and underwater blasting, can generate noise and vibrations that can impact fish, sharks, and rays. These impacts can disrupt their behavior, including feeding, mating, and communication, and may result in avoidance or displacement from affected areas.
- Many fish, sharks, and rays rely on natural light cues for important behaviors such as feeding, reproduction, and navigation. Light pollution can disrupt their natural behaviors and physiology, such as altering their circadian rhythms, reducing their ability to locate food, and affecting their reproductive patterns.
- Light pollution can disrupt migratory patterns by interfering with their ability to navigate using natural light cues, leading to potential changes in their distribution and abundance.

Mitigation measures

- Planning dredging activities during periods of dry weather periods and low tide or reduced water flow to minimize the impact on breeding status.
- Minimizing noise during sensitive periods, such as fish spawning or feeding times.
- Implementing responsible lighting practices, such as using shielded fixtures, directing lights downwards, and using low-intensity lights, to minimize the amount of light that escapes into the surrounding environment.

1.5 Seagrass

Potential negative impacts

- Seagrass meadows can be physically destroyed during coastal development activities, such as dredging, land reclamation, and shoreline modification. These activities can result in direct burial or removal of seagrass beds, leading to their loss and degradation.

Mitigation measures

- Throughout the construction process, efforts will be made by workers to minimize disturbance to areas with vegetation, which are susceptible to damage, by avoiding them whenever possible while carrying out their tasks.
- Implementing seagrass habitat restoration and enhancement efforts, such as seagrass transplantation, habitat creation

2. Decreasing of seawater quality and eutrophication

Runoff erosion during rains from unprotected excavated areas resulting in excessive soil erosion that can be damaging to marine ecology. Organics in the suspended material can deplete available oxygen from the surrounding waters and temporarily create stressed conditions for many aquatic animals. Light penetration into the water column may be reduced due to sedimentation that negatively impacted on photosynthetic algae, corals and other aquatic organisms. Breakwaters, groynes, training walls and similar structures provide the biggest problems when such structures are built in a zone of high littoral sediment transport.

2.1 Forest Cover (Coastal mangrove)

Potential negative impacts

- Pollution from sedimentation, chemicals, and other pollutants can reduce water quality, which can affect the health and growth of mangrove trees.
- The toxic compounds can penetrate the tissues of mangroves, causing physiological damage, disrupting cellular processes, and leading to plant stress or death.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Mitigation measures

- Provision of dykes will be applied to hold runoff to settle soil particle, where required (use flocculating agents where affected resources are sensitive, such as corals). Moreover, the design of the quay structure will include a storage area for stormwater that can be collected and allowed to pass through a separator before being discharged.
- Accidents or other disruptions of utility services (water, gas, etc.) will follow appropriate planning and prompt repairs when accidents occur. Moreover, careful planning for spoil disposal management with the international best practices will be applied. The Project will also apply the guideline of National (Myanmar) Environmental Quality (Emission) Guidelines for commercial ports, harbours and terminals for cargo and passenger transfer, and covers all aspects of on-shore operations.
- Oily ballast, bilge water, sewage etc. will be disposed in a designated proper managed area or port reception facility in accordance with the prevention and control of pollution of the marine environment from ships of the International Maritime Organization (IMO). The Project will use the best technology and practices for the dredging process to minimize the sedimentation.

2.2 Plankton

Potential negative impacts

- Phytoplankton populations can be adversely affected by water pollution, including nutrient pollution, sedimentation, and chemical contaminants.
- Excessive nutrients can lead to eutrophication, causing an overgrowth of phytoplankton known as harmful algal blooms (HABs).
- Pollutants can be toxic to zooplankton, affecting their survival, growth, reproduction, and overall fitness. Toxicity from water pollution can disrupt zooplankton populations and lead to changes in community structure and diversity.

Mitigation measures

- Installation of silt curtains or turbidity barriers around the dredging area.
- Utilization of dredging techniques that minimize sediment disturbance, such as hydraulic dredging or suction dredging, which can reduce the amount of sediment resuspended in the water compared to mechanical dredging methods.
- Planning dredging activities during periods of dry weather periods and low tide or reduced water flow to minimize the dispersion of sediment-laden water. Avoiding dredging during periods of high tide or strong currents, which can increase the spread of sediments in the water.
- Implementing nutrient management strategies, such as advanced wastewater treatment technologies and nutrient removal systems, can help minimize nutrient inputs and reduce the potential impacts on plankton communities.
- Developing and implementing best management practices for port construction and operation, including proper waste management, stormwater management, and maintenance of port infrastructure, can minimize pollution risks and protect plankton communities.
- Developing and implementing spill prevention and response plans that adhere to best practices and regulations can minimize the risk of accidental spills during port construction.

2.3 Benthic Communities

Benthic communities include macroinvertebrates, molluscs and gastropods.

Potential negative impacts

- Changes in water quality, including changes in salinity and chemical composition, can have direct impacts on the health, survival, and reproductive success of macroinvertebrate populations.

Mitigation measures

- Implementing pollution prevention measures to minimize chemical pollution during construction activities, such as proper handling, storage, and disposal of construction-related chemicals, fuels, and materials.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

2.4 Fishes, Sharks, Rays and their Habitats (Breeding and Nursery)

Potential negative impacts

- Sedimentation, pollution, and changes in water quality due to construction activities can directly affect fish, sharks, and rays.

Mitigation measures

- Implementing best management practices for handling and storing hazardous materials, proper waste disposal, and regular monitoring and maintenance of equipment and facilities to prevent leaks, spills, and other pollution incidents.

3. Marine aquatic ecotoxicity

Disruption of bottom sediments can cause a variety of environmental impacts. Problems arise where sediments have been contaminated by chemicals, petroleum hydrocarbons and domestic wastes. Toxics or contaminants released from the disturbed soils can go into solution or suspension and contaminate or cause severe mortalities among marine and estuarine fishery resources.

3.1 Plankton

Potential negative impacts

- Phytoplankton populations can be adversely affected by water pollution, including nutrient pollution, sedimentation, and chemical contaminants.
- Pollutants can be toxic to zooplankton, affecting their survival, growth, reproduction, and overall fitness. Toxicity from water pollution can disrupt zooplankton populations and lead to changes in community structure and diversity.

Mitigation measures

- Developing and implementing best management practices for port construction, including proper waste management, stormwater management, and maintenance of port infrastructure, can minimize pollution risks and protect plankton communities.

3.2 Benthic Communities

Benthic communities include macroinvertebrates, molluscs and gastropods.

Potential negative impacts

- Changes in chemical composition (resuspension), can have direct impacts on the health, survival, and reproductive success of macroinvertebrate populations.

Mitigation measures

- Developing and implementing best management practices for port construction, especially on dredging.

4. Impacts of noise and light

Water is an excellent medium for sound transmission that travels more than four times faster underwater than in air and absorption is less compared to air. Consequently, many aquatic organisms use sound as their primary mode of communication – to locate a mate, to search for prey, to avoid predators and hazards, and for short- and long-range navigation. Marine species migrating through harbours and rivers may not be able to avoid exposure to dredging sound as they can in open waters.

Additionally, noise and motion from passing vehicles can cause behavioural stress and further affect the dispersion of wild populations (Reijnen and Foppen 2006). The life of many aquatic species is linked to light intensity. Feeding, schooling and migration of fin fish depend on specific light intensities. Changing these intensities can therefore change the behaviour of individuals. Moreover, zooplankton move diurnal migration (up and down) in the water column. They avoid surface predators during the day and feed on surface phytoplankton at night. The decline in vertical migration of zooplankton leading to a proliferation of microalgae on the water surface. In the long term, these changes could have repercussions on the balance of aquatic ecosystems: changes in prey/predator relationships, impact on food chains and water quality.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4.1 Fishes, Sharks, Rays and their Habitats (Breeding and Nursery)

Potential negative impacts

- Pile driving, vessel traffic, and underwater blasting, can generate noise and vibrations that can impact fish, sharks, and rays. These impacts can disrupt their behavior, including feeding, mating, and communication, and may result in avoidance or displacement from affected areas.
- Many fish, sharks, and rays rely on natural light cues for important behaviors such as feeding, reproduction, and navigation. Light pollution can disrupt their natural behaviors and physiology, such as altering their circadian rhythms, reducing their ability to locate food, and affecting their reproductive patterns.
- Light pollution can disrupt migratory patterns by interfering with their ability to navigate using natural light cues, leading to potential changes in their distribution and abundance.

Mitigation measures

- Minimizing noise during sensitive periods, such as fish spawning or feeding times.
- Implementing responsible lighting practices, such as using shielded fixtures, directing lights downwards, and using low-intensity lights, to minimize the amount of light that escapes into the surrounding environment.
- The Project will follow the international guideline and practices such as WODA, 2013 (Technical Guidance on: Underwater Sound in Relation to Dredging) and IMO's Marine Environment Protection Committee (MEPC) 2014 (Guidelines on Reducing Underwater Noise from Commercial Shipping, to Address Adverse Impacts on Marine Life).
- Lighting will be minimized as much as possible.
- Lighting best practices will be implemented

5. Fragmentation and loss of forest

Fragmentation and loss of forest will occur with the removal of vegetation, forest and land clearance during terminal construction activities.

Mitigation measures

Planting of native plant species in a designated area will be conducted to restore the loss of forest and habitats in accordance with existing forest law 2018 in chapter 5 and section 13.

6. Loss of aquatic habitats for aquatic animals

Loss of habitat for aquatic animals (coastal birds, marine mammals and sea turtles) will occur with the removal of vegetation, including coastal mangrove and river bed in the capital dredging during construction activities in the Project area.

Mitigation measures

Planting of native plant species in a designated area will be conducted to restore the loss of forest and habitats in accordance with existing forest law 2018 in chapter 5 and section 13. The following mitigation measures will be implemented to reduce the impact on sea turtles by the Project in the water of the Project area.

- Keeping noise levels within limits to reduce the impact on sea turtles' communication and behaviour.
- Reducing speed limits in the vicinity of the Project area to mitigate the significant threat of boat strikes to sea turtles and minimize the incidence of collisions.

High levels of turbidity can interfere with sea turtles' feeding and visibility, so appropriate measures such as sediment control or reducing sediment runoff from construction activities are necessary.

7. Loss of wildlife

Harm, including fatalities of slow-moving animals (e.g., endangered species of yellow tortoise) will occur with the removal of soil and habitats during construction activities in the Project area.

Mitigation measures

Ensure animals are identified, disturbed or driven away prior to work commencing a potential wildlife area.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

8. Disturbance and displacement of wildlife

Disturbance and displacement for wildlife both terrestrial and aquatic animals will occur during construction activities especially the removal of habitats through dredging activities, and disturbance of noise, vibration and turbidity during dredging. Noise levels below 1KHz are unlikely to cause damage to marine mammals' auditory systems. Similarly, loud noises will disturb sea turtles and coastal birds.

Mitigation measures

Wildlife habitat or planting of native plant species nearby the Project area will be undertaken to restore the loss of terrestrial habitats in accordance with existing forest law 2018 in chapter 5 and section 13.

Suitable times for dredging works (e.g., tide cycle) will be chosen, and dredging work will be stopped or delayed in a dolphin active time and place, and ecological sensitive habitats (e.g., coral, seagrass and breeding ground) will be avoided as much as possible.

Cargo ships or vessels will be required to reduce their engine speed and slow down when entering the Project zone.

9. Disturbance and Habitat Loss of Migratory birds

The impact of land clearing activities, dredging during construction on migratory birds can be significant due to habitat change and loss, disturbance on migratory pattern. The construction activities can also cause water pollution, noise and light pollution, which can disrupt the behaviour and migration patterns of migratory birds which can lead disorient birds.

Mitigation Measures

Mitigation measures proposed during the construction phase are:

- Identification and protecting critical habitats, such as feeding and roosting areas, for migratory birds.
- Minimizing land clearing activities and preserving mangrove vegetation and natural habitats as much as possible.
- Minimizing the disturbance during construction, such as timing activities outside of migratory seasons.

10. Disturbance of Marine mammals

The activities associated with the construction of the terminal Project, such as underwater noise, plume turbidity, and habitat change, can potentially disrupt the natural behaviours of these dolphins, including feeding, movement, social communication, and even cause injury. This can have negative effects on the health and survival of the dolphins, as they rely on their natural behaviors to find food, interact with other individuals, and maintain their overall well-being.

Mitigation Measures

Mitigation measures proposed during the construction phase are:

- Delay or stop any project activities (e.g., dredging, and pilling) at dolphin active times to prevent any disturbance on dolphin behaviours.
- Minimizing plume turbidity, such as using silt curtains or alternative disposal methods.

11. Disturbance of Sea turtles

The construction of the terminal can cause harm to sea turtles. During the construction of the terminal could produce high levels of noise, which could disturb the natural behaviour of sea turtles (e.g., sea turtles rely on hearing to navigate and find food, and excessive noise could interfere with these processes).

During the construction of the terminal could also lead to increase sedimentation and turbidity in the water, which could impact the visibility of sea turtles and their ability to find food.

Mitigation Measures

Mitigation measures proposed during the construction phase are:

- Noise levels should also be kept within limits to reduce the impact on sea turtles' communication and behavior.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Reducing sediment runoff from construction activities are necessary as high levels of turbidity can interfere with sea turtles' feeding and visibility.

12. Impact on Forest Cover

The Project's impact on the terrestrial forest would depend on the extent of land-use change required for the construction of the port terminal. If the Project involves clearing a significant portion of the remaining natural forest, it could result in the loss of valuable habitat for wildlife and lead to a decline in biodiversity. The removal of trees could also cause soil erosion, disrupt local hydrology, and increase the risk of natural disasters (e.g., landslides).

Mitigation Measures

If some forest clearing is unavoidable, compensatory measures should be implemented to offset the impact. This could include reforestation efforts and habitat restoration for wildlife.

5.4.2.3 Social Environment

1. Distance from Sensitive Receptors

There are four (4) villages on the island: Sit Tau village, Say Maw village, Kyan Chein village and Thit Poke Taung village within the vicinity of the Project area.

Sensitive receptors include nearby schools, temples/monasteries, residential houses, shops whose occupants and/or activities may be temporarily affected by noise, dust, vibration, emissions, traffic, and other socio-economic disturbances during the construction of the terminal.

Mitigation Measures

Storage of construction materials will be avoided beside the road, around water bodies, residential or public sensitive locations. Construction materials will be covered as required to ensure protection against dust generations (particulate emissions) and such materials will be stockpiled in environmental friendly and nuisance free manner.

2. Community Wellbeing and Quality of Life

The Project has the potential to impact community wellbeing in a number of both positive and negative ways.

During the construction phase, the Project has the potential to cause a number of community health and wellbeing effects on local communities, including Kyauk Phyu town and affected villages in Kyauk Phyu Township, as a result of the following:

Positive Impacts:

According to the Project Proposal Report by the Project Proponent, the following aspects can be recognized as potential benefits of the Project for the community.

- Improved employment, income, and livelihoods in local communities, and corresponding benefits related to community health and wellbeing.
- Improved education and healthcare for local communities through creation by the Project Proponent of local education facilities and provision of medical facilities.
- Improved living standards (with corresponding health and education outcomes) due to infrastructure improvements and higher income levels.
- Development of the local and national economy.

Negative Impacts:

- Health and wellbeing impacts related to air quality changes, noise and vibration changes due to construction activities. Livelihood impacts related to loss of fishing area, agricultural area, scrubland and woodland areas due to construction activities.
- Changes to labour market as a result of an influx of workers and migrants seeking employment and other economic opportunities.

Enhancement of Positive Impacts and Mitigation Measures of Negative Impacts

The Project will seek to enhance positive impacts and mitigate negative impacts to community health and wellbeing through the following measures:

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- The Project is committed to support local economic development in Kyauk Phyu Township. CSR projects adhere to a 'people-oriented' approach of supporting local economic development as well as environmental priorities.
- Local employment, procurement, and training opportunities through construction phases of the Project.
- CSR activities will be carried out systematically in the area directly affected by the Project by presenting the CSR Plan to the public.
- Mitigation, management, and monitoring measures regarding air quality, noise, and vibration changes.
- Coordination and communication with local government representatives, local community leaders and representatives to measure and monitor impacts to community health and wellbeing.
- Robust grievance mechanism to ensure open communication channel for filing complaints or grievances.

3. Local Infrastructure and Services

The influx of workers and people into the Project area during the construction phase will cause changes to the demand for, price, quality, quantity, and/or carrying capacity of local infrastructure and services.

Local infrastructure and services may include roads, bridges, railways, housing and accommodation, maintenance facilities and service, social services, transportation services, transportation infrastructure, health care facilities and services (including hospitals and clinics, physicians and nurses, mental health services), education facilities (including schools, training centers), religious buildings (including temples, monasteries, churches), community halls, policing and emergency infrastructure, public utilities, waste facilities, and Kyauk Phyu airport

The Project will have impacts, both positive and negative, on local infrastructure and services, including:

Positive Impacts

According to the Project Proposal Report by the Project Proponent, the following aspects can be recognized as potential benefits of the Project for the community.:

- Improvements to local infrastructure and services as a result of Project contributions.
- Improved emergency response procedures developed by communities in response to the Project, or provided to local communities by the Project.

Negative Impacts:

- Pressure and strain on local infrastructure and services due to increased worker and other populations in the Project area.
- Changes to prices and availability of local infrastructure and services, and in particular housing and accommodation.

Enhancement of Positive Impacts and Mitigation Measures of Negative Impacts

The Project will seek to enhance positive impacts and mitigate negative impacts to local infrastructure and services by:

- CSR activities will be carried out systematically in the area directly affected by the Project by presenting the CSR Plan to the public.
- Worker accommodation at Project site(s) to reduce housing and accommodation impacts in local communities.
- Provision of healthcare and education services and infrastructure in Project area.
- Coordination and communication with local government representatives, local community leaders and representatives to measure and monitor impacts to local infrastructure and services.
- Robust grievance mechanism to ensure open communication channel for filing complaints or grievances.

4. Psychological impact

If the worries of the residents of the four villages near the DSP Project site cannot be managed adequately, psychological impacts of the Project will continue. Of the four villages in the inner zone, residents of Sittaw, Kyan Chein and Thit Poke Taung and a few households of Say Maw rely on fishing. In

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Say Maw village, there are paddy farmers who work on land plots near the river building embankments around them to prevent sea water from entering. Their cultivation plots will be lost in the sea port construction.

Mitigation measures

The main concern of the residents, whose livelihoods are fishing and paddy farming, is the potential loss of their livelihoods. Under CSR and community development initiative scheme, the project developer is encouraged to set financial contribution for subsidies and provisions for **subsistence agriculture/farming** to support livelihoods of those households of the communities affected by project development.

5. Heritage-Culturally Significant Sites

The preliminary survey has identified culturally significant sites in the vicinity of the Project area. There are four villages such as Thit Poke Taung, Kyan Chein, Sit Taw and Say Maw villages located within 2 km of proposed Yanbye Island Terminal Project infrastructure and activities. Villages have their own monastery, ordination hall, stupa/temple and Buddha image which could have experience temporary disturbance.

The Project has the potential to impact culturally significant sites in the following ways:

- Increased worker and other populations in Project area could increase users and observers of culturally significant sites, which in turn could boost revenues or prestige or sites, or degrade sites through overuse.
- Cultural or religious tension due to changes in use and access to culturally significant sites.

Mitigation Measures

The Project will mitigate impacts to culturally significant sites through the following measures:

- If disturbance of culturally significant sites is unavoidable, follow all application legislation as well as cultural norms in full consultation with site users, owners, and representatives.
- Coordination and communication with local government representatives, local community leaders and representatives to measure and monitor impacts to cultural significant sites.
- Robust grievance mechanism to ensure open communication channel for filing complaints or grievances.

6. Community Health and Safety

It is essential to protect the community from physical and chemical hazards, and from inadvertent or intentional trespassing, including potential contact with hazardous materials, contaminated soils and other environmental media, buildings that are vacant or under construction, or excavations and structures which may pose falling and entrapment hazards unduly presence under construction and decommissioning.

Mitigation measures

- Restricting access to the site, through a combination of institutional and administrative controls.
- Removing hazardous conditions on construction sites such as covering openings to small confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials.

6.1. Disease Prevention

Increased incidence of communicable and vector-borne diseases attributable to construction activities represents a potentially serious health threat to project personnel and residents of local communities.

Mitigation measures

6.1.1 Communicable Diseases

Communicable diseases of most concern during the construction phase due to labor mobility are sexually-transmitted diseases (STDs), such as HIV/AIDS, Seasonal Influenza and Covid 19.

Preventing illness among workers in local communities by:

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- Expansion of routine immunization programs in collaboration with rural health stations for health promotion of workers in local communities
- Providing health services
- Ensuring ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers
- Promoting collaboration with local authorities to enhance access of workers families and the community to public health services and promote immunization

6.1.2 Vector-Borne Diseases

Reducing the impact of vector-borne disease on the long-term health of workers is best accomplished by eliminating the factors that lead to diseases.

In collaboration with community health authorities, an integrated control strategy for mosquito and other arthropod-borne diseases will be effectively carried out.

Mitigation measure

- Exploring methods to minimize transmission of disease through mosquito control measures (e.g., removal of mosquito breeding sites where possible; using larvicides)
- Stagnant pools of water will be avoided and managed as part of a stormwater management plan for the overall site to minimize vector borne disease
- Considering the application of residual insecticide to dormitory walls
- Implementation of integrated vector control programs
- Promoting use of repellents, clothing, netting, and other barriers to prevent insect bites
- Consult with responsible persons from Vector borne Disease Control Programs of corresponding Health Department to help control disease reservoir
- Collaboration and exchange of in-kind services with other control programs in the Project area to maximize beneficial effects
- Educating project personnel and area residents on risks, prevention, and available treatment
- Dissemination of health Information, Education and Communications materials
- Following safety guidelines for the storage, transport, and distribution of pesticides to minimize the potential for misuse, spills, and accidental human exposure

6.1.3 Traffic Safety

Mitigation measures

- Adoption of mitigation measures, protective measures, and safety measures for the most vulnerable project workers and of road users
- Adoption of best transport safety practices
- Emphasizing safety aspects among drivers
- Adopting limits for trip duration and arranging driver rosters to avoid overtiredness
- Avoiding as much as possible dangerous routes and times of day to reduce the risk of accidents.
- Minimizing pedestrian interaction with construction vehicles by means of (1) road trustworthy improvement (2) stringent road and vehicle regulations (3) erection of road signals.
- Collaboration with local communities and responsible authorities to improve signage, visibility and overall safety of roads, particularly along stretches located near schools or other locations where children may be present.
- Collaborating with local communities on education about traffic and pedestrian safety (e.g., school education campaigns)
- Coordination with emergency responders to ensure that appropriate first aid is provided in the event of accidents

7. Occupational Health and Safety

Specific occupational health and safety issues relevant to port operations primarily include the following:

- Physical hazards;
- Chemical hazards;
- Confined spaces;

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Exposure to organic and inorganic dust; and
- Exposure to noise.

7.1 Potential impacts tend to arise from physical hazards

The main sources of physical hazards at ports are associated with cargo handling and the use of related equipment, machinery, and vehicles.

Mitigation measures

Dust

- Applying water or non-toxic chemicals to minimize dust from vehicle movements
- PPE, such as dusk masks

Confined Spaces and Excavations

- Controlling site-specific factors including the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning
- Avoiding the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated
- The commonly adopted Buddy System (U.S. OSHA) whereby a third worker acting as a Safety Watch person would be positioned nearby to watch all persons working within a confined space and call for help in case of an OHS situation
- Safety training for all workers regardless of seniority or experience will be mandatory
- Conduct Occupational First Aid Training courses

Follow the preventive measures where necessary and adhere to directives of Ministry of Health and Sports for Seasonal Influenza and Covid 19 such as

- (a) Social Distancing
- (b) Wearing Face masks
- (c) Regular hand washing practices
- (d) Aware of cough and sneeze etiquette
- (e) Vaccination with two booster doses

5.4.3 Environmental and Social Impacts and Mitigation Measures Needed during the Operation Phase

5.4.3.1 Physical Environment

1. Water Quality (Water Pollution)

During the operation phase, water quality could be impacted due to surface runoff from open storage yards, maintenance dredging activities, waste and effluent disposal from terminals, bilge and ballast water from ships, anti-fouling paints from ships bottom, improper handling of sewage and garbage from ships, oil transfer operations, hazardous Cargo operations, effluent from treatment plants. Concentration of water pollutants across different Project phases and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit and leading international standards.

Mitigation Measures

It is expected that maintenance efforts in dredging of the access to the berthing facilities or the turning circle (navigational area) will be required during the life of the Project. In the event that sedimentation does occur to the extent that requires dredge-removal, the amounts and frequency will be low and managed as for construction dredging, with minimal impacts to adjacent habitats.

Discharge of Brine (from Desalination) and Wastewater

- Reject brine from the desalination process will not be discharged inside Myanmar waters strictly following international compliance with the required environment (waste discharge) permit conditions.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- Sanitary wastewater will flow closed conduit sewer network to sanitary treatment plant or lift stations for pumping to a treatment plant for biological oxidation, clarification and chlorination.
- Treated effluent will be sent to the retention pond for polishing and discharged into water bodies in accordance with the required environment (waste discharge) permit condition.
- The chemically contaminated wastewater drains will collect effluent associated with process activities on the multipurpose terminal Facilities site.
- This effluent will be sent to the retention pond, where trace hydrocarbons will be separated, skimmed and sent to the oily water treatment system.
- The Project will consider disposing the brine and wastewater from the wastewater treatment systems in same vicinity, which would achieve salinity similar to existing conditions at the near the discharge points.

Accidental Spillage of Restricted Substances

Offshore emergency response procedures appropriate to the Project phase will be established in the spill response plan and will include staff training at induction to inform workers of their responsibilities under the plan. This will include identification of all risks or sources of potential chemical and fuel spills and application of appropriate control or clean-up equipment appropriate for inventory volumes of restricted substances.

Discharge from Vessels

- As vessels will be prohibited from discharging sewage and other wastes within Myanmar waters in order to comply with MARPOL (IMO, 1973/1978) standards and international port policies and procedures.
- In addition, the potential application of the new Marine Pollution (Ships and Installations) plan, Marine Pollution (Preparedness and Response) plan and Marine Pollution (Liability and Cost Recovery) plan will (when introduced) give effect to MARPOL and other conventions under existing law and prohibit vessels discharging sewage and other wastes in nearshore areas.

2. Air Quality (Air Pollution)

Air emissions will be generated from ships and the marine environment and other. Port operations, such as emissions from trucks and other cargo handling equipment related to cargo handling and movement, open stacking of cargo like exhaust gases and volatile organic compounds associated with handling, storage and transfer of Hydrocarbons. Ambient air quality across different Project phases and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit and leading international standards.

Mitigation Measures

Emissions to air from operation of the Project Components and Activities will be mitigated through engineered solutions that will be incorporated into the design and operation:

- Turbine generators will use dry, low-emissions technology to maintain NO_x and CO concentrations at less NEQG and WHO guidelines standards.
- Low NO_x turbines will be used in the multipurpose terminal.
- BTEX emissions from acid gas removal will be treated by thermal destruction or industry good practice.
- Valves, pipes and tanks will be regularly inspected and maintained to reduce fugitive VOCs emissions.

The modelling assessment of operations emissions Air Quality Impact Assessment) has focused on assessing the impacts of emissions of NO_x, PM, and SO₂ from fixed plant on shore and the emissions of NO_x, SO₂ and PMs from shipping.

The type of wastes incinerated at approved will be controlled through the Project environmental management plan.

3. Noise and Vibration (Noise Pollution)

Noise and vibration during the operation phase is generated from marine traffic movement of ships, operation of cranes, conveyors for cargo handling and other heavy equipment, maintenance dredging activities, and vehicular traffic for cargo movement. Ambient Noise Quality across different Project

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

phases and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit and leading international standards.

Mitigation Measures

It is anticipated that the operational life of the facility is 50 years with extendibility; and that the multipurpose terminal Plant will run 24 hours a day, seven (7) days a week. Noise will be generated from all operating components of the facility, as well as from vehicles and personnel.

These levels will be within adopted limits in accordance with NEQG guidelines and criteria. In the event of an operation upset, alarms and emergency venting and flaring will generate significant sound levels, which may temporarily impact the surrounding environment.

The main noise sources are located within the multipurpose terminal Plant and utilities areas, the multipurpose terminal and the flare area. The operational duty cycles of each item of equipment are wide-ranging and difficult to approximate at this early stage. Accordingly, a 'typical' worst-case scenario with all equipment operating has been adopted for the model as described in Noise modelling

4. Soil and Marine Sediment Degradation (Soil and Sediment Pollution)

Soil and sediment degradation can be caused due to rainfall runoff from open storage yards, maintenance dredging activities, improper storage / handling of waste and effluents, leaks and spills from tank farms and pipelines and leaching of wastes and hazardous substances stored in port premises. Soil and Sediment quality across different Project phase and periodical monitoring are compared against baseline environmental quality data, NEQG permissible limit (if any) and leading international standards.

Mitigation Measures

There will be no landform impacts associated with the operations of the Project. Operations mitigation and management measures in relation to soils will focus on the potential for soil contamination through minor operational spillages of fuels, oils and chemicals.

However, one specific mitigation measure is to conduct post-construction inspections along the maintenance of the channel and within the basin of Thanzit river including:

- Checking for problematic erosion areas and implementing remedial works as appropriate.
- Inspecting ditches and culverts and removing accumulated debris, where required.
- Reviewing feedback from water quality monitoring for advance warning of deteriorated water quality due to increased suspended sediment loading.

Potential soil contamination by larger accidental spillages of fuels, oils and chemicals through traffic accidents or any collision.

Toxic and hazardous liquids spill in the waters will be managed in accordance with the Project's spill response plan, which will be developed prior to commencement of operations.

5. Light Pollution

Light pollution can occur due to the establishment of permanent lighting for berths, jetties, port facilities, conveyors, road and railway lines and increased lighting from offshore ship and marine vessel movement. Lighting system installation for night visibility configuration shall be inspected periodically lest usable light impacts the well-being of terrestrial and marine fauna across different Project phases.

Mitigation Measures

- During operation phase, major measures to mitigate potential impacts to minimize light pollution in the Project site can be anticipated. The following mitigation measures will be adopted for both fixed and temporary lighting.
- Adopt the lowest safe lighting levels possible for task being undertaken.
- Using lighting for construction workers in the absence of daylight for visibility and safety for sites where necessary.
- Use a high-quality luminaire with good optical control.
- Use the lowest possible mounting for the luminaire based on the required level of illumination needed for the task being undertaken.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Direct luminaires into the area to be lit (light from the boundary inwards).
- Ensure the luminaire is mounted that the light propagation is targeted to ground surface, where possible, and objects and avoid tilt, where possible, to minimize light propagation to the horizon.
- If required, custom shields are designed through consulting among optical experts and manufacturer.
- Turn off lighting when not required by installing intermediate switches for control from the main system.

6. Landscape and Visual

Ship traffic can affect local use of water front by local people. The pollution load will be increased due to marine traffic. Barriers, walling, greening, and buffers areas will be inspected periodically lest visual appearance annoys locals residing in nearby communities.

Mitigation Measures

During operations, a community's visual amenity may be managed with visual screening, such as vegetation or bunding. Earth mounding (bunding) is an effective short-term mitigation measure, as it blocks views as soon as it is completed and the raw, earth-coloured appearance of mounding is very quickly replaced by the green of cover plants, particularly in tropical locations.

As a mitigation measure, the multipurpose terminal Facilities site will have infrastructure located according to safe constructability and operational requirements. However, any massing or grouping of components of the development will reduce the extent of ameliorative screening required and also reduce the extent of the area from which they will be seen.

The primary sensitive viewing locations of the multipurpose terminal facilities site will be from the land, therefore buildings will be of a colour that is visually compatible with the surrounding landscape, for example, olive or mid-greens that are compatible with both the wet season greens and the dry season straw-green or yellow.

The visual impact of taller elements, such as tanks and flare stacks, will be dependent on material colour selection to mitigate their visual impact.

The perimeter and internal components of the multipurpose terminal Facilities site and around the site perimeters will be well illuminated for both security and occupational health and safety reasons.

Where practicable, treatments such as shrouds will be used, and fixed lighting will be shielded to reduce the potential for light spill.

In the case of the multipurpose terminal Jetty and Materials Offloading Facility, the visual impact will be mitigated by its proposed slender, low-profile design.

7. (a) Greenhouse Gases Emission

Construction of the Project can contribute to climate change potential and significance. The impact persists until end of project life-cycle. Global Warming Potential (GWP) Eq. CO₂ kg emission will be evaluated for climate change impacts; but the subject is completely dependent of Project emission inventories that must be provided by Project Proponent.

Mitigation Measures

The energy management system and technology used play at the pivotal role in addressing climate change which include the following measures:

- The use of thermostatic controls on all space heating systems in site buildings to maintain optimum comfort at minimum energy use
- The use of sensors on light fittings in all site buildings and low energy lighting systems
- The use of adequately insulated temporary building structures for the construction compound fitted with suitable vents
- The use of low energy equipment and "power saving" functions on all PCs and monitors in the site offices
- The use of low flow showers and tap fittings
- The use of solar/thermal power to heat water for the on-site welfare facilities and contamination unit (sinks and showers).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

(b) Microclimate

Microclimate alteration is identified at a noticeable scale. Adverse microclimate impacts will be evaluated by means of mean temperature (Degree Celsius) changes and fluctuation. Benchmark temperature is taken as those figures identified in the preconstruction period which will be compared against annual increment or fluctuation.

Mitigation Measures

- Integrate Greening Measures.
- Include green and sustainability design principles, where appropriate, in the Project Engineering and Environmental Management Plan.

8. Coastal Hydrology

Coastal hydrology can be impacted due to improper dredge disposal locations during maintenance dredging, adoption of new shore protection measures to control erosion, development of new infrastructure that affects the natural creeks and estuarine openings on the coast. Adverse impacts to hydrological settings will be evaluated by means of coastal process changes and changes in hydrological settings of Project sites and in the vicinity. Benchmark bathymetry is taken as those figures of the preconstruction period which will be compared against annual alternation or fluctuation to river morphology.

Mitigation Measures

During operations, the integrity of the catchment and basin of Thanzit River and downstream/upstream coastal forest and mangroves forest will be monitored to determine whether sediment delivery from areas disturbed by construction areas is similar to preconstruction conditions.

If monitoring indicates the need, measures over and above those of the construction phase will be developed and implemented. Post-construction revegetation and overall rehabilitation of erosion-prone areas, especially at river crossings and riparian areas, will assist in mitigating impacts to sediment transport.

9. Biological Hazards

Biological hazards can be due to marine bio fouling from ship bottoms, underwater hull cleaning activities and ballast water with new invasive species. Biological Hazards will be evaluated for all Project phases through accident, incident, emergency and contingency reporting.

Mitigation Measures

The Project will establish and enforce a project-wide quarantine management protocols for the ecology, natural habitat and biodiversity management plan, which will include inspection of equipment, machinery and consumables, such as line pipe and imported rock. The protocols will follow International Maritime Organization requirements and industry good practice with respect to ballast water discharge and hull cleaning to prevent unintended pest introductions.

10. Traffic Congestion (Land and Maritime)

Traffic is at peak volume during the construction phases and impacts to the communities is anticipated. Traffic (both land and maritime) monitoring and management report will be evaluated for timely responses, management, and reporting of both traffic modes for the proposed Project.

Mitigation Measures

Mitigation measures proposed during the operation phase of development are:

- Notify the public before commencement of works.
- Discuss and co-ordinate closely with utilities companies about pre and post construction works.
- Appoint competent person to supervise any traffic operation works at or near to TNB
- All safety requirements must be complied with, including safety requirements with regard to electrocution, fire hazards and working in confined spaces
- The Emergency Response Team (ERT) team must be on standby at all times.
- Appropriate signboards will be erected during relocation works in compliance with the Traffic Management Plan (TMP).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

11. Resource Depletion

Land and marine use, water and consumable materials, and energy use can be negatively impacted by construction activities. Resource depletion and toxicity will further be evaluated from the Project's material balances and inventories, from procurement to the disposal stage.

Mitigation Measures

Selected mitigation measures will reduce resource depletion during the operation phase by promoting the followings measures in every project decision where applicable:

- Reduction in consumption
- Save electricity
- Opting power-efficient devices
- Avoid plastic
- Minimize deforestation
- Recycle and reuse
- Reduce waste
- Renewable energies

12. Waste Management

During the operation phase, waste discharges from the multidisciplinary operation of typical multipurpose terminal will be further be evaluated from material balances, material safety data sheets and project inventories from procurement to disposal stage.

Mitigation Measures

Mitigation measures proposed during the operation phase of development are:

- Continue to review and implement any required changes in the waste management plan in order to avoid and minimise the potential effects of vessel generated wastes once the Project is operational.
- Continue to Provide adequate reception facilities at the port.
- Continue to encourage the responsible management of waste, including minimisation and recycling, at the point of generation on ships, reception in ports/harbours, transportation and disposal, and ensure that port and harbour employees and users dispose of wastes responsibly in facilities provided.
- Continuously evolve to effectively capture materials generated to help ensure that recyclable materials are handled and diverted accordingly.
- Develop a clear waste management plan that incorporates a customer-facing recycling and organics collection program will help divert most materials from landfill.
- incorporates adequate dedicated space to cater for the segregation and storage of all various waste streams at the Terminal building.
- The bin storage area will allow for waste segregation, handling activities such as bailing of cardboard and plastic and sufficient waste storage.
- All staff will be provided with training regarding the waste management procedures.

5.4.3.2 Biological Environment

1. Depletion of biotic resources and loss of biodiversity

Turbidity due to suspended particles, can be caused by shipping activities near a deep sea port. Turbidity can alter the physical and chemical properties of water, including light penetration, temperature, and oxygen levels, which can affect the quality of marine habitats. While ballast water is essential for safe and efficient modern shipping operations, it may pose serious ecological, economic and health problems due to the multitude of marine species carried in ships' ballast water. Intentional or accidental introduction of alien, or non-native, species of flora and fauna into areas where they are not normally found can be a significant threat to biodiversity, since some alien species can become invasive, spreading rapidly and out-competing native species. Accidental oil and other spills could be severe and threats to marine life such as plankton and fishes.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

1.1 Plankton

Potential negative impacts

- Alien plankton species may outcompete native plankton for resources, such as nutrients and sunlight, leading to changes in plankton community composition and structure. Changes in plankton populations and community structure due to the introduction of alien species can disrupt the balance and functioning of coastal ecosystems.
- Accidental oil and other spills could be severe and threats to plankton.

Mitigation measures

- Implementing ballast water management practices, such as ballast water exchange, ballast water treatment systems, and adherence to international ballast water management regulations, can help prevent the introduction of invasive species and minimize potential impacts on plankton communities.
- Implementing preventive measures, such as strict regulations and contingency plans, to minimize the risk of oil spills. Setting up physical barriers, such as booms and absorbent materials, to prevent or minimize the spread of oil in mangroves and associated waters.
- Implementing prompt and effective oil spill response measures, such as containment, recovery, and removal of oil from affected areas, to minimize the exposure and impacts on mangroves and associated ecosystems.

1.2 Fishes, Sharks, Rays and their Habitats (Breeding and Nursery)

Potential negative impacts

- The exploitation of marine resources could be occurred to serve as a food source for workers, especially rare/endangered species such as sharks, rays and dolphins from the Project area.
- Collisions between ships and marine mammals can result in severe injuries or fatalities to the marine mammals.

Mitigation measures

- Prohibition of exploitation in high priority species (IUCN red list species).
- Reducing ship speeds in areas known to have high marine mammal activity can reduce the risk of collisions. Slower speeds give marine mammals more time to detect and avoid ships and can also reduce the severity of collisions if they do occur.

2. Decreasing of Seawater Quality and Eutrophication

Runoff erosion during rains from unprotected excavated areas may result in excessive soil erosion that can be damaging to marine ecology. Organics in the suspended material can deplete available oxygen from the surrounding waters and temporarily create stressed conditions for many aquatic animals. Light penetration into the water column may be reduced due to sedimentation that negatively impacts on photosynthetic algae, corals and other aquatic organisms. Discharge of nutrient rich water can cause eutrophication.

2.1 Forest Cover (Coastal mangrove)

Potential negative impacts

- Pollution from sedimentation, chemicals, and other pollutants can reduce water quality, which can affect the health and growth of mangrove trees.

Mitigation measures

- Implementing effective sediment and erosion control measures as well as pollution prevention measures, such as proper waste management, runoff controls, and spill response plans, to prevent or minimize pollution impacts on mangroves and surrounding waters.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

2.2 Plankton

Potential negative impacts

- Phytoplankton populations can be adversely affected by water pollution, including nutrient pollution, sedimentation, and chemical contaminants.
- Excessive nutrients can lead to eutrophication, causing an overgrowth of phytoplankton known as harmful algal blooms (HABs).
- Pollutants can be toxic to zooplankton, affecting their survival, growth, reproduction, and overall fitness. Toxicity from water pollution can disrupt zooplankton populations and lead to changes in community structure and diversity.

Mitigation measures

- Implementing nutrient management strategies, such as advanced wastewater treatment technologies and nutrient removal systems, can help minimize nutrient inputs and reduce the potential impacts on plankton communities.
- Developing and implementing best management practices for operation, including proper waste management, stormwater management, and maintenance of port infrastructure, can minimize pollution risks and protect plankton communities.

2.3 Benthic Communities

Benthic communities include macroinvertebrates, molluscs and gastropods.

Potential negative impacts

- Changes in water quality, including changes in salinity and chemical composition, can have direct impacts on the health, survival, and reproductive success of macroinvertebrate populations.

Mitigation measures

- Implementing pollution prevention measures to minimize chemical pollution such as proper handling, storage, and disposal of construction-related chemicals, fuels, and materials.

2.4 Coral reefs

Potential negative impacts

- Suspended particles in turbid water can block sunlight from reaching the coral reefs, reducing the amount and quality of light available for photosynthesis by the coral's symbiotic algae (zooxanthellae). This can result in decreased coral growth and reduced calcification rates, which can weaken the overall health and resilience of coral reefs.
- Turbidity caused by shipping activities can increase stress on coral reefs by reducing water quality and reducing the availability of food and oxygen. This can make corals more vulnerable to other stressors, such as coral bleaching, diseases, and predation, leading to increased mortality and reduced coral cover on the reef.

Mitigation measures

- Optimize the design and maintenance of the shipping channel to minimize the disturbance of sediments. This can include regular dredging to maintain appropriate depths, channel alignment to minimize water flow turbulence, and installation of erosion control measures.

2.5 Fishes, Sharks, Rays and their Habitats (Breeding and Nursery)

Potential negative impacts

- The release of toxic compounds into the water can result in direct toxicity to fish, affecting their physiological processes, such as respiration, reproduction, and immune function.

Mitigation measures

- Implementing effective sediment and erosion control measures as well as pollution prevention measures, such as proper waste management, runoff controls, and spill response plans, to prevent or minimize pollution impacts on mangroves and surrounding waters.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

3. Marine Aquatic Ecotoxicity

The effects of anti-fouling paints on bottom dwelling marine organisms - particularly clams and oysters when the depth is relatively shallow and there are a number of craft moored in one location, can be severe. Several countries have banned the use of paints containing tributyl-tin for this reason.

The Project will prohibit the use of harmful organotin compounds in anti-fouling paints used on ships and establish a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems in accordance with the International Convention on the Control of Harmful Anti-fouling Systems on Ships.

3.1 Forest Cover (Coastal mangrove)

Potential negative impacts

- Oil can coat the roots, leaves, and stems of mangroves, forming a thick layer that can block sunlight, suffocate the roots, and disrupt the gas exchange processes of the trees. This can lead to reduced photosynthesis, impaired growth, and even death of mangroves.
- The toxic components of oil can penetrate the tissues of mangroves, causing physiological damage, disrupting cellular processes, and leading to plant stress or death.

Mitigation measures

- Implementing preventive measures, such as strict regulations and contingency plans, to minimize the risk of oil spills. Setting up physical barriers, such as booms and absorbent materials, to prevent or minimize the spread of oil in mangroves and associated waters.
- Implementing prompt and effective oil spill response measures, such as containment, recovery, and removal of oil from affected areas, to minimize the exposure and impacts on mangroves and associated ecosystems.

3.2 Plankton

Potential negative impacts

- Phytoplankton populations can be adversely affected by water pollution, including nutrient pollution, sedimentation, and chemical contaminants.
- Pollutants can be toxic to zooplankton, affecting their survival, growth, reproduction, and overall fitness. Toxicity from water pollution can disrupt zooplankton populations and lead to changes in community structure and diversity.

Mitigation measures

- Developing and implementing spill prevention and response plans that adhere to best practices and regulations can minimize the risk of accidental spills during operation phase.
- Developing and implementing best management practices for the operation, including proper waste management, stormwater management, and maintenance of port infrastructure, can minimize pollution risks and protect plankton communities.

3.3 Benthic Communities

Benthic communities include macroinvertebrates, molluscs and gastropods.

Potential negative impacts

- The effect of oil spill can have direct impacts on the health, survival, and reproductive success of macroinvertebrate populations.

Mitigation measures

- Develop a spill response plan in coordination with relevant authorities, outlining the procedures, responsibilities, and resources needed to effectively respond to an oil spill.
- Maintain a well-equipped spill response team with appropriate spill response equipment, such as oil containment booms, skimmers, dispersants, and shoreline cleanup materials, readily available at the port to enable a rapid and effective response in case of a spill.
- Conduct thorough cleanup and remediation efforts following spill response protocols to restore affected areas to pre-spill conditions.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

3.4 Coral reefs

Potential negative impacts

- Oil spills can coat coral reefs with a layer of oil, smothering coral polyps and other marine organisms. This can block their access to sunlight, reducing photosynthesis and inhibiting coral growth.
- Oil contains toxic chemicals that can harm coral reefs. These toxic chemicals can penetrate the tissues of corals causing damage to their cells, organs, and physiological processes. This can lead to coral bleaching, tissue necrosis, and mortality.

Mitigation measures

- Require the use of double-hull vessels for transportation of oil and other hazardous substances to reduce the risk of spills in the event of a collision or grounding.
- Develop a spill response plan in coordination with relevant authorities, outlining the procedures, responsibilities, and resources needed to effectively respond to an oil spill.
- Maintain a well-equipped spill response team with appropriate spill response equipment, such as oil containment booms, skimmers, dispersants, and shoreline cleanup materials, readily available at the port to enable a rapid and effective response in case of a spill.
- Conduct thorough cleanup and remediation efforts following spill response protocols to restore affected areas to pre-spill conditions.

3.5 Fishes, Sharks, Rays and their Habitats (Breeding and Nursery)

Potential negative impacts

- The biocides used in anti-fouling paints can be toxic to fish and other marine organisms. The release of these biocides into the water can result in direct toxicity to fish, sharks and rays affecting their physiological processes, such as respiration, reproduction, and immune function.
- Anti-fouling paints can alter the behavior and physiology of fish.

Mitigation measures

- Shall not allow the the ship without certification of anti-fouling systems. The International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS) prohibits the use of anti-fouling systems that contain harmful substances, such as tributyltin (TBT), which is a toxic compound that was commonly used in anti-fouling paints and has been found to have harmful effects on marine organisms and ecosystems.

4. Impacts of noise and light

Sound travels more than four times faster underwater than in air and absorption is less compared to air. Consequently, many aquatic organisms use sound as their primary mode of communication – to locate a mate, to search for prey, to avoid predators and hazards, and for short- and long-range navigation. Marine species migrating through harbours and rivers may not be able to avoid exposure to dredging sound as they can in open waters.

The life of many aquatic species is linked to light intensity. Feeding, schooling and migration of fin fish depend on specific light intensities. Changing these intensities can therefore change the behaviour of individuals. Moreover, zooplankton move diurnal migration (up and down) in the water column. They avoid surface predators during the day and feed on surface phytoplankton at night. The decline in vertical migration of zooplankton may lead to a proliferation of microalgae on the water surface. In the long term, these changes could have repercussions on the balance of aquatic ecosystems: changes in prey/predator relationships, and impact on food chains and water quality.

4.1 Fishes, Sharks, Rays and their Habitats (Breeding and Nursery)

Potential negative impacts

- Vessel traffic (shipping) can generate noise and vibrations that can impact fish, sharks, and rays. These impacts can disrupt their behaviour, including feeding, mating, and communication, and may result in avoidance or displacement from affected areas.
- Many fish, sharks, and rays rely on natural light cues for important behaviours such as feeding, reproduction, and navigation. Light pollution can disrupt their natural behaviours and

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

physiology, such as altering their circadian rhythms, reducing their ability to locate food, and affecting their reproductive patterns.

- Light pollution can disrupt migratory patterns by interfering with their ability to navigate using natural light cues, leading to potential changes in their distribution and abundance.

Mitigation measures

- Minimize noise during sensitive periods, such as fish spawning or feeding times.
- The Project will follow National Environmental Quality (Emissions) of Myanmar to protect against the adverse impacts of noise on marine ecosystem.
- Natural darkness has a conservation value and will be protected through good quality lighting design and management for the benefit of all living things. All infrastructure that has outdoor artificial lighting or internal lighting that is externally visible, will be incorporated with the best practice lighting design.
- Implementing responsible lighting practices, such as using shielded fixtures, directing lights downwards, and using low-intensity lights, to minimize the amount of light that escapes into the surrounding environment.

5. Ocean Acidification

All modes of transportation that use fossil fuels and produce carbon dioxide emissions that significantly contribute to ocean acidification those could be affected on marine and coastal ecosystems. More than three percent of global carbon dioxide emissions can be attributed to ocean-going ships. Carbon dioxide absorbed into the ocean from the atmosphere causes ocean acidification that has already begun to reduce calcification rates in reef building and reef-associated organisms by altering seawater chemistry through decreases in pH.

5.1 Benthic Communities

Benthic communities include coral reefs.

Potential negative impacts

- Coral reefs are highly diverse and important ecosystems that support a wide variety of marine species. Ocean acidification can inhibit the ability of corals to build their calcium carbonate skeletons, which are essential for their survival and growth. As a result, coral reefs can experience bleaching, reduced calcification rates, and even complete dissolution, leading to declines in coral species richness and abundance, as well as losses in associated marine species that depend on coral reefs for food and habitat.

Mitigation measures

- Reduce greenhouse gas emissions, particularly carbon dioxide (CO₂), from human activities, including deep sea port and shipping activities. This can be achieved by adopting cleaner fuels, improving energy efficiency in shipping vessels, and implementing carbon capture and storage technologies.
- The shipowners and other port users will be required to follow MARPOL convention Annex VI – prevention of air pollution from ships. Best practices, regulations and guidelines will be followed to reduce carbon dioxide emissions.

6. Disturbance and displacement of wildlife

Disturbance and displacement of wildlife, both terrestrial and aquatic animals, will occur during operation activities especially the removal of habitats through dredging activities, such as noise disturbance, vibration and turbidity during dredging. Noise levels below 1KHz are unlikely to cause damage to marine mammals' auditory systems. Similarly, loud noise will disturb sea turtles and coastal birds.

Mitigation measures

Wildlife habitat or planting of native plant species nearby the Project area will be developed to restore the loss of terrestrial habitats in accordance with existing forest law 2018 in chapter 5 and section 13.

The suitable time for the dredging work (e.g., tide cycle) will be chosen, dredging work will be stopped or delayed in a dolphin active time and place, and ecological sensitive habitats (e.g., coral, seagrass and breeding ground) will be avoided.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Cargo ships or vessels will be reduced the engine speed slow down when entering the Project zone. Cargo ships or vessels will be required to reduce their engine speed and slow down when entering the Project zone.

7. Disturbance and Habitat Loss of Migratory birds

Terminal operations can cause disturbance and displacement of migratory birds from their usual migration routes which can lead to exhaustion and mortality. Terminal operations can also cause water pollution, noise and light pollution, which can disrupt the behavior and migration patterns of migratory birds which can lead disorient birds.

Mitigation Measures

Mitigation measures proposed during the operation phase are:

- Minimizing the disturbance during operations, such as timing activities outside of migratory seasons.
- Monitoring migratory bird populations before, during, and after the Project to assess the effectiveness of mitigation measures.
- Providing education and outreach programs to increase awareness among workers and the locals about migratory birds and the importance of protecting their habitats.

8. Disturbance of Marine mammals

The activities associated with the operation of the terminal Project, such as underwater noise, plume turbidity, and collision, can potentially disrupt the natural behaviors of these dolphins, including feeding, movement, social communication, and even cause injury. This can have similar effects on the health and survival of the dolphins.

Mitigation Measures

Mitigation measures proposed during the operation phase are:

- Reducing a speed limit for vessels in the vicinity of the Project site to minimize the risk of collision.
- Periodic monitoring can be carried out to detect any harmful effects on dolphins, such as boat strikes or accidental collisions, and can be taken as an appropriate action (e.g., an emergency response plan to address any accidental injury or harm to the dolphins).
- Conducting public awareness activities to educate workers and local community about the importance of protecting dolphins and their habitat.

9. Disturbance of Sea turtles

The operation of the terminal can cause harm to sea turtles. During the operation of the terminal could produce high levels of noise, which could disturb the natural behaviour of sea turtles (e.g., sea turtles rely on hearing to navigate and find food, and excessive noise could interfere with these processes).

The movement of large ships and numerous motor boats associated with the terminal project may have a collision risk to sea turtles that can result in injury or death.

Mitigation Measures

Mitigation measures proposed during the operation phase are:

- Noise levels should also be kept within limits to reduce the impact on sea turtles' communication and behavior.
- Reducing speed limits in the vicinity of the Project area is necessary to mitigate the significant threat of boat strikes to sea turtles and minimize the incidence of collisions.
- Periodic monitoring can be carried out to detect any harmful effects on sea turtles, such as boat strikes or accidental collisions, and can be taken an appropriate action.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

5.4.3.3 Social Environment

1. Distance from Sensitive Receptors

During the operational maintenance phase, sensitive receptors include nearby schools, temples/ monasteries, residential houses, shops whose occupants and/or activities may be temporarily affected by noise, dust, vibration, emissions, traffic, and other socio-economic disturbances.

Mitigation Measures

Storage of construction materials will be avoided beside the road, around water bodies, residential or public sensitive locations. Construction materials will be covered as required to ensure protection against dust generations (particulate emissions) and such materials will be stockpiled in environmental friendly and nuisance free manner.

2. Community Wellbeing and Quality of Life

The Project has the potential to impact community wellbeing in a number of both positive and negative ways.

During the operation phase, the Project has the potential to cause a number of community wellbeing effects on local communities, including Kyauk Phyu town and affected villages in Kyauk Phyu Township, as a result of the following:

Positive Impacts:

According to the Project Proposal Report by the Project Proponent, the following aspects can be recognized as potential benefits of the Project for the community.

- Improved employment, income, and livelihoods in local communities, and corresponding benefits related to community health and wellbeing.
- Improved education and healthcare for local communities through creation by the Project Proponent of local education facilities and provision of medical facilities.
- Improved living standards (with corresponding health and education outcomes) due to infrastructure improvements and higher income levels.
- Development of the local and national economy.

Negative Impacts:

- Health and wellbeing impacts related to air quality changes, noise and vibration changes due to construction activities.
- Livelihood impacts related to loss of fishing area, agricultural area, scrubland and woodland areas due to construction activities.
- Changes to labour market as a result of an influx of workers and migrants seeking employment and other economic opportunities.

Enhancement of Positive Impacts and Mitigation Measures of Negative Impacts

The Project will seek to enhance positive impacts and mitigate negative impacts to community health and wellbeing through the following measures:

- The Project is committed to support local economic development in Kyauk Phyu Township. CSR projects adhere to a 'people-oriented' approach of supporting local economic development as well as environmental priorities.
- Local employment, procurement, and training opportunities through construction phases of the Project.
- CSR activities will be carried out systematically in the area directly affected by the project by presenting the CSR Plan to the public.
- Mitigation, management, and monitoring measures regarding air quality, noise, and vibration changes.
- Coordination and communication with local government representatives, local community leaders and representatives to measure and monitor impacts to community health and wellbeing.
- Robust grievance mechanism to ensure open communication channel for filing complaints or grievances.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

3. Local Infrastructure and Services

Worker and population influx into the Project area during the operation phase will cause changes to the demand for, price, quality, quantity, and/or carrying capacity of local infrastructure and services.

Local infrastructure and services may include roads, bridges, railways, housing and accommodation, maintenance facilities and service, social services, transportation services, transportation infrastructure, health care facilities and services (including hospitals and clinics, physicians and nurses, mental health services), education facilities (including schools, training centers), religious buildings (including temples, monasteries, churches), community halls, policing and emergency infrastructure, public utilities, waste facilities, and Kyauk Phyu airport

The Project will have impacts, both positive and negative, on local infrastructure and services, including:

Positive Impacts:

According to the Project Proposal Report by the Project Proponent, the following aspects can be recognized as potential benefits of the Project for the community.

- Improvements to local infrastructure and services as a result of Project contributions.
- Improved emergency response procedures developed by communities in response to the Project, or provided to local communities by the Project.

Negative Impacts:

- Pressure and strain on local infrastructure and services due to increased worker and other populations in the Project area.
- Changes to prices and availability of local infrastructure and services, and in particular housing and accommodation.

Enhancement of Positive Impacts and Mitigation Measures of Negative Impacts

The Project will seek to enhance positive impacts and mitigate negative impacts to local infrastructure and services by:

- CSR activities will be carried out systematically in the area directly affected by the Project by presenting the CSR Plan to the public.
- Worker accommodation at Project site(s) to reduce housing and accommodation impacts in local communities.
- Provision of healthcare and education services and infrastructure in Project area.
- Coordination and communication with local government representatives, local community leaders and representatives to measure and monitor impacts to local infrastructure and services.
- Robust grievance mechanism to ensure open communication channel for filing complaints or grievances.

4. Heritage-Culturally Significant Sites

The preliminary survey has identified culturally significant sites in the vicinity of the Project area. There are four villages such as Thit Poke Taung, Kyan Chein, Sit Taw and Say Maw villages located within 2 km of proposed Yanbye Island Terminal Project infrastructure and activities. Villages have their own monastery, ordination hall, stupa/temple and Buddha image which could have experience temporary disturbance. The Project has the potential to impact culturally significant sites due to operation activities/maintenance in the following ways:

- Increased worker and other populations in Project area could increase users and observers of culturally significant sites, which in turn could boost revenues or prestige or sites, or degrade sites through overuse
- Cultural or religious tension due to changes in use and access to culturally significant sites.

Mitigation Measures

The Project will mitigate impacts to culturally significant sites through the following measures:

- Measures to ensure access to culturally significant sites maintained as much as possible.
- Coordination and communication with local government representatives, local community leaders and representatives to measure and monitor impacts to cultural significant sites.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Robust grievance mechanism to ensure open communication channel for filing complaints or grievances.

5. Community Health and Safety

During the operation phase, port marine safety and port security may impair water quality and community wellbeing due to discharges composed of oily wastes, liquid wastes and solid wastes from ships.

Mitigation Measure

A safety management system for the safe operation of ships, including passenger safety, safe access and manoeuvring of chemicals and oil transporting ships inside the port areas will be developed and implemented. Appropriate regulations on ship traffic and discharges will be followed to be in conformity with contingency plans for ship accidents.

Awareness program/training in the use of household disinfection methods like filter drinking water with cloth, boiling, solar disinfection, adding (0.2%) sodium hypochlorite solution will be provided.

5.1 Disease Prevention

Increased incidence of communicable and vector-borne diseases attributable to operation activities represents a potentially serious health threat to project personnel and residents of local communities.

Mitigation measures

5.1.1 Communicable Diseases

Communicable diseases of most concern during the operation phase due to labor mobility are sexually-transmitted diseases (STDs), such as HIV/AIDS, Seasonal Influenza and Covid 19.

Preventing illness among workers in local communities by:

- Expansion of routine immunization programs in collaboration with rural health stations for health promotion of workers in local communities
- Providing health services
- Ensuring ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers.
- Promoting collaboration with local authorities to enhance access of workers families and the community to public health services and promote immunization

5.1.2 Vector-Borne Diseases

Reducing the impact of vector-borne disease on the long-term health of workers is best accomplished through eliminating the factors that lead to diseases.

In collaboration with community health authorities, an integrated control strategy for mosquito and other arthropod-borne diseases will be effectively carried out.

Mitigation measure

- Exploring methods to minimize transmission of disease through mosquito control measures (e.g., removal of mosquito breeding sites where possible; using larvicides)
- Stagnant pools of water will be avoided and managed as part of a stormwater management plan for the overall site to minimize vector borne disease
- Considering the application of residual insecticide to dormitory walls
- Implementation of integrated vector control programs
- Promoting use of repellents, clothing, netting, and other barriers to prevent insect bites
- Consult with responsible persons from Vector borne Disease Control Programs of corresponding Health Department to help control disease reservoirs
- Collaboration and exchange of in-kind services with other control programs in the Project area to maximize beneficial effects
- Educating project personnel and area residents on risks, prevention, and available treatment
- Dissemination of health Information, Education and Communications materials
- Following safety guidelines for the storage, transport, and distribution of pesticides (chemical fertilizers, for example, ' Potash ') to minimize the potential for misuse, spills, and accidental human exposure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

5.1.3 Traffic Safety

Mitigation measures

- Adoption of mitigation measures, protective measures, and safety measures for the most vulnerable project workers and of road users
- Adoption of best transport safety practices
- Emphasizing safety aspects among drivers
- Adopting limits for trip duration and arranging driver rosters to avoid overtiredness
- Avoiding as much as possible dangerous routes and times of day to reduce the risk of accidents
- Minimizing pedestrian interaction with vehicles
- Collaboration with local communities and responsible authorities to improve signage, visibility and overall safety of roads, particularly along stretches located near schools or other locations where children may be present.
- Collaborating with local communities on education about traffic and pedestrian safety (e.g., school education campaigns)
- Coordination with emergency responders to ensure that appropriate first aid is provided in the event of accidents

6. Occupational Health and Safety

Specific occupational health and safety issues relevant to port operations and operational maintenance primarily include the following:

- Physical hazards
- Chemical hazards
- Confined spaces
- Exposure to organic and inorganic dust, and
Exposure to noise

6.1 Potential impacts tend to be arisen from physical hazards

The main sources of physical hazards at ports are associated with cargo handling and the use of related equipment, machinery, and vehicles.

Mitigation measures

Dust

- Applying water or non-toxic chemicals to minimize dust from vehicle movements
- PPE, such as dusk masks

Confined Spaces and Excavations

- Controlling site-specific factors including the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning
- Avoiding the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated
- The commonly adopted Buddy System (U.S. OSHA) whereby a third worker acting as a Safety Watch person would be positioned nearby to watch all persons working within a confined space and call for help in case of an OHS situation
- Safety training for all workers regardless of seniority or experience will be mandatory
- Conduct Occupational First Aid Training courses

Follow the preventive measures where necessary and adhere to directives of Ministry of Health and Sports for Seasonal Influenza and Covid 19 such as

- (a) Social Distancing
- (b) Wearing Face masks
- (c) Regular hand washing practices
- (d) Aware of cough and sneeze etiquette
- (e) Vaccination with two booster doses

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

5.4.4 Environmental and Social Impacts and Mitigation Measures Needed during the Decommissioning Phase

The owner(s) of Port Assets and all relevant facilities are required to decommission their respective infrastructure at the end of project's economic life or when it reaches the end of its usable life.

Decommissioning involves the timely, safe and environmentally responsible removal of, or otherwise satisfactorily dealing with, port infrastructure from the Project area that was previously used to operate and support the operations. Decommissioning confers that the port infrastructure or any portion of it has reached the end of its usable life, is removed from use and is being retired from Project area.

Dismantling and decommissioning activities apply to dismantlement and removal of all Port Assets, dismantlement and removal of all other property of any kind related to or associated with port operations or activities, and associated site restoration and site remediation. The dismantling and decommissioning activities also apply during maintenance and abandonment.

The impacts include cost, health and safety issues and environmental (HSE) impact, availability of resources, stakeholder involvement, etc. In some cases, the lack of a single key resource could result in the elimination of some decommissioning strategies.

Mitigation Measures

Major steps in the decommissioning process are notification of cessation of operations; submittal, review and approval of the decommissioning process; implementation of the decommissioning; and completion of decommissioning.

Decommissioning can be done by dismantling it onsite or by cutting it into pieces and floating it away on barges. The port and all other facilities are deconstructed and smaller parts are collected then transported onshore using supply vessels for further processing.

It is crucial to achieve effective and balanced decommissioning solutions, which are consistent with international obligations and have a proper regard for safety, the environment, other legitimate users of the sea, economic and social considerations as well as technical feasibility.

Decommissioning Obligations means any and all dismantling and decommissioning activities and obligations with respect to the Deep-Sea Port Assets as are required by Law, any Governmental Authority or any applicable Contract. Decommissioning Obligations shall include, but limited to, the removal and proper disposal of all components of the Project, stabilization and rehabilitation of the Real Property, and restoration of the Real Property to its original state.

5.4.5 Environmental and Social Impacts and Mitigation Measures Needed during Transfer Phase

The Build-Operate-Transfer (BOT) Project delivery system has provided effective routes to mobilize private sector funds, innovative technologies, management skills and operational efficiencies for public infrastructure development. The Transfer stage is the closing stage of the BOT model. The Transfer stage must be studied carefully and handled well to achieve the overall success of the Project.

There will be many issues faced by both the public sector and private sector in the transfer stage of the Project, including project post-assessment, technology and documents transfer, personal training and staff transition, etc. and sometimes additional legislation is needed for future operation and management of facilities.

Key issues are initially identified as stated below;

Dispute over the Parties (government and concessionaire) fulfillment of the obligations as promised

- Concession period extension
- Opportunistic behavior of the concessionaire of overusing the facilities of the Project
- Stability and continuity of public services provided by the Project during the transfer stage
- Personnel training
- Post-transfer management

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Mitigation Measures:

A proposed framework of transfer management will be prepared based on the experiences derived and lessons drawn from the case studies. Specific expert interviews and discussions will be organized with the relevant stakeholders (specifically, the Parties of the Project; the Contracting Authority and the Concessionaire) and subject matter experts to determine recommendations or suggestions they may have. The details on the issues and proposed actions will be included in the EIA Report to improve the transfer management of the Project.

5.4.6 Environmental and Social Impacts and Mitigation Measures Needed during Abandonment of the Project

The main issues faced by the construction industry is an abandoned building project. Generally, mismanagement of the Project by the Project Proponent is the main factor that contributes to an abandoned building project. To avoid this, the Project Proponent should have a stable financial and risk management systems.

Project Management is the art of delivering a scope at a certain level of quality with a defined budget and during a determined schedule. Successful project delivery can be achieved only with good project management practices.

The issue of abandoned buildings has occurred across the globe and brings negative impact to the nation and country. It will cause a serious problem with sustainability especially the waste of natural resources/material used for the construction.

There are five fundamental consequences of poor project management which could lead to the abandonment of the Project.

1. Project Cost Overruns
2. Schedule Delays
3. Demotivated Project Team
4. Bad Reputation
5. Sustainability Risk for the organization in long-term

Mitigation Measures

An Abandonment Plan will be prepared describing how abandonment will be handled. This Abandonment Plan will be subject to approval by the Parties. EIA Report will include impact assessment of the Abandonment Plan to assess and minimize potential environmental and social impacts arising from the abandonment of the Project.

5.4.7 Exceptional Events*

“Exceptional Event” means an event or circumstance which is beyond a Party’s control; the Party could not reasonably have provided against before entering into the Contract; having arisen, such Party could not reasonably have avoided or overcome; and is not substantially attributable to the other Party.

Infrastructure projects, and public-private partnerships / BOT projects in particular, around the globe and in all sectors have felt the impact of the COVID-19 pandemic, as supply chains and customer demand have been disrupted and health recommendations have changed the way business is conducted.

The construction industry faces extraordinary unknowns regarding operations, revenue, contract obligations, timely project delivery and project suspensions or shutdowns.

Exceptional Event clauses of the Contract define the circumstances beyond a contracting party’s control in which a party’s non-performance may be excused. At a minimum, such clauses typically allow an extension of time (EOT) for performance and relief from liability for non-performance by the party invoking it.

Exceptional Events may cause suspension of the work and / or other consequences. Many countries have taken action to limit the virus spread through social distancing policies, limiting work to only essential activities, closing schools and restricting travel and majority of the world’s population has faced travel restrictions amid the COVID-19 pandemic. While some projects deemed essential are

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

progressing despite the pandemic, others are halted. In addition, some projects may be delayed due to supply chain disruptions of equipment and materials.

Mitigation Measures

The Parties will get ahead of this through a rapid assessment of the Exceptional Events events and develop action-oriented steps to manage the risks.

For projects that have not yet achieved commercial operations, this may include deadline extensions, waiver of delay liquidated damages (LDs) and potentially pass-through of additional costs. For projects that are operational, this may include adjustments to performance standards, waiver of performance LDs, pass-through of additional costs and excuse from performance targets.

The Project will take proactive steps to prepare for claims rather than wait for a Party to make a claim and potentially end up in a dispute, engage between the Parties to determine the Party's assessment of the risk of pandemic to the Project and plans for addressing such risk.

5.4.8 Climate Change Impact

As greenhouse gas emissions blanket the Earth, they trap the sun's heat. This leads to global warming and climate change. Fossil fuels – coal, oil and gas – are by far the largest contributor to global climate change. Myanmar has emitted 145.2 million tonnes of GHG in 2018.

(<https://www.unep.org/explore-topics/climate-action/what-we-do/climate-action-note/state-of-climate.html>)

SDG 13 urges to take urgent action to combat climate change and its impacts.

Climate change is a real and undeniable threat to the entire civilization. In order to meet the goals of the Paris Agreement and limit global warming, it is required to mitigate greenhouse gases (GHGs) and find new pathways to decarbonization. According to UNEP, approximately 70% of global GHG emissions are associated with the construction and operation of infrastructure.

Negative Impacts originated from construction, operation and maintenance activities and works, but not limited to, are air pollution, greenhouse gas emissions, releases of ballast water containing aquatic invasive species, historical use of antifoulants, oil and chemical spills, dry bulk cargo releases, garbage, underwater noise pollution; ship-strikes on marine megafauna, risk of ship grounding or sinkings, and widespread sediment contamination of ports during transshipment or ship breaking activities.

Causes of Climate Change related to construction, operation and maintenance activities and works

- Generating power: Generating electricity and heat by burning fossil fuels causes a large chunk of global emissions.
- Cutting down forests: Cutting down forests to clear land for construction or for other reasons, causes emissions, since trees, when they are cut, release the carbon they have been storing.
- Using transportation
- Most cars, trucks, ships, and planes run on fossil fuels. That makes transportation a major contributor of greenhouse gases, especially carbon-dioxide emissions.
- Powering buildings
- Globally, residential and commercial buildings consume over half of all electricity. As they continue to draw on coal, oil, and natural gas for heating and cooling, they emit significant quantities of greenhouse gas emissions.
- Short-Lived Climate Pollutants (SLCPs)
- Air pollutants, such as methane, carbon dioxide and nitrous oxide are powerful SLCPs that contribute to climate change and ill health. Although SLCPs persist in the atmosphere for short lifetimes, their global warming potential is often much greater than carbon dioxide (CO₂).

Source: United Nation – Climate Action

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Mitigation Measures

To limit global temperature-rise to below 2°C aiming for 1.5°C, as promised in the Paris Agreement, countries must cut 30 gigatonnes of GHG emissions annually by 2030. COP 27 reaffirms the commitment to limit global temperature rise to 1.5 degrees Celsius above pre-industrial levels to allow us to reach net-zero emissions by 2050. It is possible by using existing solutions which include renewable energy, green hydrogen and modern bioenergy.

The design of the structure could be mainly focused on the promotion of energy efficiency and energy saving mechanisms, the appropriate selection of materials and resources, the use of renewable energy for the operation needs, proper waste management, the efficient use of water, and finally the integration of vegetation that may work as a carbon capture mechanism. Throughout the life cycle of the Project, the equipment, work processes, construction materials, and energy consumption should aim to minimize emissions as much as possible.

5.5 Residual Impacts

The residual impacts and their significance will be determined by the nature of impacts, namely, magnitude, duration, and reversibility in comparison with applicable regulations, standards and guidelines. The assessment of residual impacts will be detailed in the Environmental Impact Assessment.

5.6 Cumulative Impact Assessment

In order to implement the Cumulative Impact Assessment, the other existing and future private and public projects and developments will be firstly identified and then potential Cumulative Impact due to the residual impacts of the proposed project and the impacts of the other projects will also be identified. The cumulative impacts and their significance on VECs will be assessed. The management measures for cumulative impacts will be developed. The Cumulative Impact Assessment will be detailed in EIA report.

5.7 Transboundary Impacts

The route to be used by the carriers calling on the Kyauk Phyu Project will utilize international shipping lanes, introducing the potential for transboundary transfer of exotic and invasive species, particularly in ballast water. Greenhouse gas emissions will contribute to global climate change, which is considered a transboundary issue. Climate change and the potential for transboundary impacts will be considered and detailed in the EIA report.

5.8 Human Rights Impact Assessment

As a responsible organization, it is required to address the range of Human Rights issues linked to their operations. They can both positively and negatively impact their staff, the workers in their supply chains, or the communities around their operations.

The principles on Human Rights are designed to guide the organization in maintaining the safety and security of their operations within an operating framework that encourages respect for human rights. Therefore, it is a unique opportunity to encourage high standards of conduct by having a positive impact on local governance, peace, and stability.

Along with those impacts which have socioeconomic to psychological consequences of the social environment of the community, Human Rights Impact assessment (HRIA) is to be included in next step of ESIA process. The HRIA process will include identifying, understanding, assessing and addressing the adverse effects brought by Project Proponent or activities of the Project.

The HRIA shall be based on United Nations Guiding Principles on Business and Human Rights (UNGPs). UNGPs provided the first global standard for preventing and addressing the risk of adverse impacts on human rights linked to business activity, and continue to provide the internationally accepted framework for enhancing standards and practice regarding business and human rights. The UNGPs encompass three pillars outlining how states and businesses should implement the framework:

- The state duty to protect human rights
- The corporate responsibility to respect human rights
- Access to remedy for victims of business-related abuses

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

National laws may not address all internationally recognized human rights, they may be weak, they may not apply to all people, and they may not be enforced by governments and the courts. The UNGPs make clear that where national laws fall below the standard of internationally recognized human rights, companies should respect the higher standard; and where national laws conflict with those standards, companies should seek ways to still honour the principles of those standards within the bounds of national law. The International Bill of Human Rights and the core ILO conventions provide the basic reference points for businesses in starting to understand what human rights are; how their own activities and business relationships may affect them; and how to ensure that they prevent or mitigate the risk of adverse impacts. HRIA methodology shall use its baseline on the following international instruments as the regulatory framework for the Project.

- The Universal Declaration of Human Rights
- The International Covenant on Civil and Political Rights
- The International Covenant on Economic, Social, and Cultural Rights
- The International Convention on the Elimination of All Forms of Racial Discrimination
- The Convention on the Elimination of All Forms of Discrimination against Women
- Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment
- Convention on the Rights of Persons with Disabilities
- The eight International Labour Organization (ILO) Core Conventions
- The Convention on the Rights of the Child
- ILO Convention 169 on Indigenous Peoples

All relevant Myanmar Laws, as stated below but not limited to, shall be applied during HRIA.

- Myanmar Labour, Health and Safety Law
- Workmen's Compensation Act (1923) (amended in 2005)
- Leave and Holidays Act (1951) (amended in 2014)
- Factories Act (1951) (amended in 2016)
- Anti-Trafficking in Persons Act (2005)
- Minimum Wage Law (2013)
- Myanmar Special Economic Zone Law (2014)
- Rights of the Persons with Disabilities Law (2015)
- Payment of Wages Law (2016)
- Template Employment Contract in Burmese
- Myanmar Construction Law
- Myanmar Investment Law
- Myanmar Companies Law
- Myanmar Property Law
- Myanmar Contract Law
- Myanmar Intellectual Property Law
- Trademark
- Copyright
- Patent
- Industrial Design

The human rights, which are most likely to be impacted by the Project, shall be determined and assessed and included in EIA Report.

Mitigation Measures

The mitigation measures shall be Implemented within the United Nations "Protect, Respect and Remedy" Framework.

Generally, all human rights impact by the Project cannot be addressed by the Project Proponent alone, but instead require involvement from broader spectrum of relevant stakeholders. It is to be noted that the implementation of recommendations arising from this assessment is far more important than the assessment itself.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Some of these recommendations are already well underway at the Project Proponent's organisation, while others are new activities for the Project Proponent. Good Governance by having a stand-alone human rights policy, and accountability structure to oversee the Project Proponent's human rights strategy, approach, and milestones. It is advisable to proactively draw upon local stakeholder insights to implement and monitor the mitigation measures.

5.9 Fishery Livelihood Impact Assessment

Small-scale to commercial-scale coastal fishery provide food and income to thousands of Kyauk Phyu district and beyond. The fishing industry is responsible for satisfying food sufficiency and security not only for Kyauk Phyu locals but also for major urban people of Myanmar. With majority of the Kyauk Phyu people are working in the fishing industry; it is highly recommended to include Fishery Livelihood Impact Assessment at Kyauk Phyu district level. However, their existence and roles highly likely to be impacted under the regional development planning which contains proposed KPSEZ DSP Project. In addition, fishing livelihood represents as intangible cultural heritage of Rakhine people that contributes to major income sources of local's people and regional socioeconomic development.

With marine resources are reported declining steadily every year due to environmental degradation which threatens the livelihoods of local people. The context of Fishing livelihood Impact Assessment focuses in the needs related to the economic security, on how the household economy meets the household needs, access to markets and services, as well as technical and organizational response capacities. It is important to understand who are the populations more vulnerable, or affected by the development of proposed Project, and what are their needs and priorities. The study will analyses local coastal and riparian fishing livelihood focusing on fishers under threat of fish catch depletion and potential livelihood loss by proposed Project. The impact assessment will be performed by analysing fishery focused Project driven adverse and negative impacts to the environment and livelihoods changes due to employment opportunities delivered by proposed Project. The Fishing Livelihood Assessment process consists of three interrelated elements livelihood toolbox⁴¹ which are (i) Livelihood Baseline (LB); (ii) Initial Livelihood impact Appraisal (ILIA); and (iii) Detailed Livelihood Assessment (DLA). The established livelihood tool box prepared by UN agencies and international development organization will be applied for Fishery Livelihood Impact Assessment of KPSEZ Project. The Fishery Impact Assessment methodology is presented in the Terms of Reference section of the scoping report.

5.10 Community benefit

Engaging the Project Proponent is to help accomplish the community's economic development goals. Hence, the community is assured that it has maximized the benefits received from the investment of incentives and has made a sustainable investment in the community's future.

The Project with community benefits can transform local economies and create shared prosperity. The Project should deliver tangible benefits to local community, such as;

- good wages and benefits for workers involved in the Project, including service workers;
- set standards, such as minimum wage or inclusionary housing requirements;
- affordable housing as part of any residential development;
- funding for local infrastructure such as community centers, supermarkets, or schools;
- hiring of local residents or members of vulnerable populations; and
- creating environmental benefits and mitigating environmental impacts; and
- Community representatives' involvement in monitoring process. Building community power is important.

Social investment, such as power supply, water supply and gas supply can reap real benefits for communities and the Project Proponent. Ensure that those neighbourhoods affected by the development, have a voice in shaping the Project to fit their needs.

⁴¹ <https://www.livelihoodscentre.org/toolbox>

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

5.11 Environmental Management Plan (EMP)

The EMP for the Project will be prepared for the construction and operation phases. The EMP will specify the environmental management activities, and the mitigation and control measures which will reduce or minimize the environmental impacts. The environmental monitoring plan will include the monitoring items, location, frequency at the construction and operation phases. The EMP will clearly identify the responsible organizations for the implementation of the EMP in the construction and operation phases and the periodic submission of monitoring reports to MONREC. Based on mitigation measures and monitoring plan proposed, the budget and cost estimation for the implementation of each mitigation measure and monitoring activity will be presented. The EMP will be developed in detail in the EIA report.

Chapter 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Chapter 6. Public consultation and disclosure

6.1 Summary

Stakeholder engagement (SE) is a means of describing a broader, more inclusive, and continuous process between a company and those potentially impacted that encompasses a range of activities and approaches, and spans the entire life of a Project.⁴²

SE activities: In the scoping stage of the DSP ESIA, stakeholder engagement activities were conducted, involving the methods mentioned below, for stakeholder identification and mapping, and for seeking their views and concerns about the DSP Project.

The following are the stakeholder engagement methods employed for the DSP ESIA Project:

1. Workshops with representatives of key stakeholder groups
2. Public Consultation Meetings (PCMs)
3. Key informant interviews (KIIs) with representatives of stakeholders
4. Focus group discussions (FGDs) with members of the stakeholder groups
5. Socio-Economic Baseline and Household Survey (SEBHS)
6. Workshop with Community Expert Group (CEG) members

KIIs and FGDs: MSR Consortium completed 127 KIIs in the scoping stage of the ESIA against the targeted 189, and 9 (nine) FGDs against the targeted 34. The remaining 62 KIIs and 25 FGDs will be conducted in the investigation stage.

In the KIIs and FGDs, the existing socio-economic life of the local residents of the 15 inner zone villages, current health conditions and healthcare services available at the villages and existence of cultural heritage items were recorded, in addition to investigation of their views and concerns.

Workshops and PCMs: Initially, six workshops and six PCMs had been scheduled. However, due to some unexpected delays, the total schedule of the six workshops has changed to four, due to combination of two trips into one. The schedule of PCMs remains unchanged at six.

In this scoping stage, two out of four workshops and two out of six PCMs were conducted. The remaining two workshops will be conducted in the investigation stage, and the remaining four PCMs will be conducted in the remaining two trips—two PCMs on the investigation field trip and another two PCMs on a specific field trip for PCMs.

Household Survey: With the aim of collecting baseline data in the socio-economic sector and recording them for future analyses, a household survey (SEBHS) will be conducted in the investigation stage. Socio-economic data will be collected from the 15 inner zone villages through census method, and from 50 selected villages (out of more than 200 villages) in the outer zone through sampling method.

Community Expert Group: The formation of the Community Expert Group (CEG) is an important measure as it includes town elders, and representatives of CSOs, INGOs and political parties—which all are important stakeholders. MSR Consortium held the first CEG workshop for four days in the last week of November 2022.

General findings: The two key findings in the scoping stage are:

- (1) Local residents are concerned about the potential loss of livelihoods (paddy farming fields and fishing grounds) and
- (2) Local residents and all other stakeholders have experienced failure of the Project Proponent of the previous project (CNPC)⁴³ in his translation of its the promises, resulting in losses on the part of the local people. They wish these negative experiences not to repeat in the current DSP Project.

Inclusion of all stakeholders: As this Project is a significant project, involvement and acceptance of all stakeholders, in addition to directly affected farmers and fishermen, such as political parties, civil

⁴² Stakeholder Engagement: A good practice handbook for companies doing business in emerging markets, IFC, May 2007

⁴³ CNPC: China National Petroleum Corporation

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

society organization and even, the ethnic armed organization in Rakhine State are necessary to proceed.

6.2 Stakeholder engagement

6.2.1 Potentially affected villages

Villages potentially affected at Yanbye Island Port Terminal of the Project site

There are 4 (four) villages directly affected by the Yanbye Island Port Terminal of the Project site. Percentages of farmers, fishers and others (other livelihoods) of the 4 (four) villages are mentioned in the following table:

Table 6-1: Potentially affected villages at Yanbye Island port terminal development site

Sr. No.	Villages at Yanbye Island Port	No. of Households	Population	Livelihoods (% of households)		
				Farmers	Fishermen	Other livelihoods
1.	Sit Taw	119	528	8%	29%	63%
2.	Kyan Chein	105	547	21%	56%	23%
3.	Say Maw	243	1,178	48%	12%	40%
4.	Thit Poke Taung	146	646	6%	48%	46%
	Total:	613	2,899			

Note: The table is compiled with the data collected during the scoping field trip.

The coloured highlight shows the larger percentage between the farmers and the fishers, regardless of other livelihoods.

Others: Other livelihoods including livestock breeders, shopkeepers, car hire, carpenters, masons, motorcycle with side-carriage, casual workers, etc.

Out of the 4 (four) villages, 3 (three) villages have larger households of fishers than those of farmers. In Say Maw village, the households of farmers are larger than those of fishers.

6.2.2 Stakeholder engagement

The ESIA for the Kyauk Phyu Special Economic Zone Deep Sea Port (KPSEZ-DSP) Project are to be carried out in the following four stages—1. Project Planning and Coordination; 2. ESIA Scoping; 3. ESIA Investigation; and 4. ESIA Reporting.

During the ESIA Scoping Stage, stakeholder engagement activities were carried out in accordance with the guidelines mentioned in the client’s Reference for Proposal (RFP) for Potential ESIA Consultants as follows:

Table 6-2: Stakeholder engagement activities (by sub-project)

Sr. No.	SE activity (Scoping Stage)	No. of times	Sub-projects of KPSES-DSP Project			Kyauk Phyu
			Made Terminal	Yanbye Terminal	Access Road & Bridge	
1.	Public Consultation	2	1	—	—	1
2.	Workshop	2	—	—	—	2
3.	Key Informant Interview	127	22	26	28	51
4.	Focus Group Discussion	9	2	2	2	3

- Notes: 1. The PCM held in Kyauk Phyu covered all the three sub-projects.
 2. The two workshops held in Kyauk Phyu covered all the three sub-projects.
 3. All the KIIs and FGDs conducted in Kyauk Phyu covered all the three sub-projects.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

During the Scoping Field Trip that took place from August 16, 2022 to September 2, 2022, the Social Environment Team conducted the following stakeholder engagement activities, involving 546 stakeholders.

Table 6-3: Stakeholder engagement activities (by method)

Sr. No.	Method of engagement (Scoping Stage)	# of persons involved	Remark
1.	Public Consultation Meeting (Kyauk Phyu)	91	Attendees of CITIC Consortium and MSR Consortium excluded.
2.	Public Consultation Meeting (Made Island)	159	
3.	Workshop (First day)	56	
4.	Workshop (Second day)	44	
5.	Key Informant Interview	127	
6.	Focus Group Discussions	70	
	Total:	547	

6.3 Mapping of potentially affected and interested parties

6.3.1 Identification of PAP and stakeholders

During the ESIA Scoping Field Trip, potentially affected people (PAP) stakeholders were identified through the following means:

- Administrators of villages in the potentially affected areas—15 villages near the two proposed port development sites—Made Island and Yanbye Island—and on and off the proposed 15-kilometer access road and bridge.
- Kyauk Phyu Township Administration Office,
- The RFP and IFC guidelines.

With the information obtained from the Kyauk Phyu Township Administration Office and administrators of village-tracts and villages, data were collected for identification of the PAP and stakeholders.

According to the data and information collected, it is found that the majority of the local residents are farmers (cultivators) and fishermen (boat owners and casual workers). The households engaged in other livelihoods, if they are combined, constitute the largest in 10 out of the 15 villages.

There are no associations to support them. But there are community-based organizations in the villages outside the 15-village inner zones, and civil service societies in downtown Kyauk Phyu.

6.3.1.1 Stakeholder groups in rural areas

In the 15 rural villages, the following stakeholder groups were identified:

1. Fishermen / fishery workers
2. Boat owners
3. Farmers / cultivators
4. Livestock breeders
5. Local residents in other livelihoods
6. Village administrators and village elders
7. Vulnerable groups
8. Minority ethnic groups
9. Religious leaders
10. Youths (Under 30)
11. Women

Village Administrators’ Offices do not keep detailed data on livelihoods. In most cases, members of a household are engaged in different occupations. For example, in a household, the head of household may be a fishery worker. The spouse may be a casual worker, perhaps raise some animals on a manageable scale, and the son may be a cultivator.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

The following table shows the demographics of farmers, fishermen, livestock breeders and those in other livelihoods:

Table 6-4: Demographics of farmers, fishermen and livestock breeders

Sub-project	Sr. No.	Village	No. of HHs ¹	Population	Demographics (Estimated % HHs)		
					Farmers	Fishermen	Other livelihoods
Made Island Port Terminal of the Project	1.	Ywar Ma	178	828	17%	31%	52%
	2.	Prain	346	1,582	11%	52%	37%
	3.	Kyauk Tan	200	915	17%	19%	64%
	4.	Kyauk Maw Gyi	52	169	0%	7%	93%
	5.	Pan Htain Se	36	115	3%	20%	77%
	Total:			812	3,609		
Yanbye Island Port Terminal of the Project	6.	Sit Taw	119	528	8%	29%	63%
	7.	Kyan Chein	105	547	21%	56%	23%
	8.	Say Maw	243	1,178	48%	12%	40%
	9.	Thit Poke Taung	146	646	6%	48%	46%
	Total:			613	2,899		
15-km Access Road & Bridge of the Project	10.	Htaunt Chaung	59	287	23%	17%	60%
	11.	Ku Lar Bar Taung	118	463	10%	39%	51%
	12.	U Gin	171	746	55%	8%	37%
	13.	Kyat Tein	130	722	34%	2%	64%
	14.	Tha Hpan Khar	17	101	29%	18%	53%
	15.	Tha Pyu Taung	42	202	18%	10%	72%
	Total:			537	2,521		
All total:			1,962	9,029			

Notes:

- 1 The table is compiled with the data collected during the scoping field trip.
- 2 HH: household
- 3 Other livelihoods include livestock breeders, shopkeeper, car-hir households, carpenters, masons, motorcycle with side-carriage, casual workers, etc.
- 4 **Poor villages:** Out of the 15 villages, 10 (ten) villages (highlighted in colour) have the larger numbers of households engaged in other livelihoods (highlighted) than those engaged in fishing and agriculture. These villages can be regarded as poor.

Members of a household do different jobs. Father may be engaged in two livelihoods. Kyauk Maw Gyi and Pan Htain Se villages on the Made Island are newly established villages, and residents there mostly do casual jobs. Most of the casual workers are fishery workers who work receiving wages from the boat owner. Villages with high percentages of other livelihoods (highlighted in the above table) are regarded as the poorest among the 15 villages.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Table 6-5: Dominant group in each village at the three sub-project sites

Sr. No.	Project site	Village	No. of HHs	Dominant group of livelihoods		Villages with larger numbers of HHs in other livelihoods than those in fishing and agriculture
				Farmer-dominated	Fisher-dominated	
1.	Made	Ywar Ma	178		■	■
2.		Prain	346		■	
3.		Kyauk Tan	200		■	■
4.		Kyauk Maw Gyi	52		■	■
5.		Pan Htain Se	36		■	■
6.	Yanbye	Sit Taw	119		■	■
7.		Kyan Chein	105		■	
8.		Say Maw	243	■		
9.		Thit Poke Taung	146		■	
10.	Access Rd.	Htaunt Chaung	59	■		■
11.		Ku Lar Bar Taung	118		■	■
12.		U Gin	171	■		
13.		Kyat Tein	130	■		■
14.		Tha Hpan Khar	17	■		■
15.		Tha Pyu Taung	42	■		■
		Total	1,962	6	9	10

Note:

- Ten out of the 15 villages have the larger number of households engaged in other livelihoods than those engaged in fishing and agriculture.
- This table just shows a comparison between the number of farmer households and the fisher households, regardless of the other livelihoods.

Stakeholder groups identified

Fishermen / fishery workers

In the inner zone 15 villages, fishermen constitute the majority. Not only the fishermen on Yanbye and Made Islands, but also those on the Marazai and Myoh Chaung Islands on the other bank of the Thanzit River and a few residents of wards in Kyauk Phyu Township rely on Thanzit River for their livelihoods. Fishermen can be of two kinds—boat owners who mainly operate fishing and fishery workers who are given wages. So, fishermen must be given priority in stakeholder engagement activities.

Fishermen (Boat owners)

All the boat owners are engaged in fishing/trawling, not in transportation. There are only three (3) to four (4) persons operating goods transport between Made Island and Kyauk Phyu Township. Some financially-strong persons buy motorboats of various sizes, hire workers and do fishing in the river. Hired workers are paid in two methods. Some boat owners give their workers a daily wage. Other share a percentage of their catch at the end of the day.

Farmers / cultivators

Paddy farmers and cultivators of other crops make up the second largest population in the inner zone 15 villages. There are two kinds of farmlands: one is the wide-stretched farmlands near the villages, and the other is near the river locally known as *karyi*. A *karyi* is a plot of land with embankments to prevent saline water from entering. But the embankments are not systematically built.

Paddy is mostly grown on the wide farmlands near the villages. Villagers built embankments near the river to prevent saline water from entering and designated these areas as their cultivation plots. Farmers exist on Yanbye Island, especially at villages along the planned Access Road and Bridge, and 80% of nearly all of the residents on Made Island are fishery workers. Farmers are the second largest group of stakeholders.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Livestock breeders

According to the findings, livestock breeding is not carried out commercially. Residents of the villages are engaged in livestock breeding on a manageable scale, raising chickens, ducks and pigs, to supplement their income or for home consumption. Their major means of livelihoods are fishing and cultivation. So, there are no specific commercial livestock breeders, and small-scale livestock breeders are scattered in the villages.

Local residents in other livelihoods

In every village, there are households that are engaged in other kinds of livelihood as major or as income-supplementing business, and they account for large percentages, if combined. The existence of other livelihoods than cultivation, fishing and livestock breeding are shown in the following table:

Table 6-6: Existence of other livelihoods than cultivation and fishing

Sr.	Other livelihoods	Existence (■ = exist; x = do not exist)														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.	Home shop /broker	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2.	Car hire	■	■	■	■	■	■	x	■	x	■	■	■	x	x	x
3.	Carpenter	■	■	■	■	x	■	■	x	x	■	x	x	x	x	x
4.	Mason	■	■	■	■	x	■	■	■	x	■	■	x	■	■	■
5.	Motorcycle transport	■	■	x	x	x	x	x	x	x	x	x	x	x	x	x
6.	Casual worker	x	x	■	x	■	x	x	x	x	x	x	x	x	x	x
7.	Trishaw-men	x	x	x	■	x	x	x	x	x	x	x	x	x	x	x
8.	Trader	x	x	x	x	x	■	x	x	x	x	x	x	x	x	x
9.	Oil drilling (Manual)	x	x	x	x	x	x	x	x	x	x	x	■	x	x	x

Codes:

- | | | |
|------------------|--------------------|----------------------|
| 1. Ywar Ma | 6. Sit Taw | 11. Ku Lar Bar Taung |
| 2. Prain | 7. Kyan Chein | 12. U Gin |
| 3. Kyauk Tan | 8. Say Maw | 13. Kyat Tein |
| 4. Kyauk Maw Gyi | 9. Thit Poke Taung | 14. Tha Hpan Khar |
| 5. Pan Htain Se | 10. Htaunt Chaung | 15. Tha Pyu Taung |

Villages administrators and village elders

The administrators of villages are persons who have been assigned by the Township Administrative Department for taking care of community administration. On the other hand, they are also compelled to do their own livelihoods. Village elders can be former village administrative body members, relatively wealthy persons in the village and those who are engaged in trading. These people are more knowledgeable than average village residents and have influence over villagers. The village administrators and elders can be representatives of village stakeholder groups.

Vulnerable groups

Vulnerable and disadvantaged groups include woman-led households, child-led households, elderly people, people with disabilities, resource-dependent groups, and economically marginalized people, and LGBTQs—lesbians, gays, bisexuals, transsexuals, and queer persons (LGBTQ). Woman-headed households and child-headed households usually depend on resources—felling trees in the mangroves for firewood.

Generally, poor households account for 70% to 80% on average of a village. Woman-headed households are those in which the husband has died or been divorced and the woman is compelled to seek income for the family. Child-headed households are those in which children have lost their both parents, and live with aged grandparents. In this case, the children have to go out to seek income.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

The acronym LGBTQ is less known in villages. There is a small number of congenital lesbians and gays in villages. Bisexuals may exist, but they are not publicly known. There is no transsexual, except a few in Yangon, in Myanmar, so far. Queer persons are difficult to identify.

Table 6-7: Demographics of vulnerable groups

Sub-project	Sr. No.	Village	Population	Vulnerable groups				
				No. of HHs		No. of persons		
				Woman-headed HHs	Child-headed HHs	Physically impaired	Mentally impaired	LGBTQ
Made Island Port Terminal of the Project	1.	Ywar Ma	828	8	2	10	5	0
	2.	Prain	1,582	12	14	12	8	2
	3.	Kyauk Tan	915	13	8	9	2	0
	4.	Kyauk Maw Gyi	169	1	2	1	1	0
	5.	Pan Htain Se	115	5	3	1	0	0
	Total:			3,609	39	29	33	16
Yanbye Island Port Terminal of the Project	6.	Sit Taw	528	8	3	5	1	0
	7.	Kyan Chein	547	8	2	4	1	0
	8.	Say Maw	1,178	12	5	9	0	1
	9.	Thit Poke Taung	646	15	6	7	5	0
	Total:			2,899	43	16	25	7
15-km Access Road and Bridge of the Project	10.	Htaunt Chaung	287	4	5	2	1	0
	11.	Ku Lar Bar Taung	463	6	2	0	3	1
	12.	U Gin	746	9	2	10	10	0
	13.	Kyat Tein	722	4	4	1	1	0
	14.	Tha Hpan Khar	101	3	2	4	0	1
	15.	Tha Pyu Taung	202	5	5	1	2	0
	Total:			2,521	31	20	18	17
All total:			9,029	113	65	76	40	5

Minority ethnic groups

Apart from Rakhine nationals, other indigenous ethnic groups are termed “minority ethnic groups”—Kachin, Kayah, Kayin, Chin, Bamar, Mon and Shan. Other immigrant races like Chinese, Indians, Bangladeshis, Nepalese, etc. are also included in this research.

Table 6-8: Demographics of minority ethnic groups

Sub-project	Sr. No.	Village	Population	Minority ethnic groups (No. of Households)							
				Kachin	Kayah	Kayin	Chin	Bamar ¹	Mon	Shan	Others ²
Made Island Port Terminal of the Project	1.	Ywar Ma	828	0	0	1	0	7	0	0	0
	2.	Prain	1,582	0	0	0	0	0	0	0	0
	3.	Kyauk Tan	915	0	0	0	0	5	0	0	0
	4.	Kyauk Maw Gyi	169	0	0	3	0	0	0	0	0
	5.	Pan Htain Se	115	0	0	0	0	0	0	0	0

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Sub-pro- ject	Sr. No.	Village	Population	Minority ethnic groups (No. of Households)							
				Kachin	Kayah	Kayin	Chin	Bamar ¹	Mon	Shan	Others ²
		Total:	3,609	0	0	4	0	12	0	0	0
Yanbye Island Port Terminal of the Project	6.	Sit Taw	528	0	0	0	0	4	0	0	0
	7.	Kyan Chein	547	0	0	0	0	0	0	0	0
	8.	Say Maw	1,178	0	0	0	0	0	0	0	0
	9.	Thit Poke Taung	646	0	0	0	0	0	0	0	0
			Total:	2,899	0	0	0	0	4	0	0
15-km Ac- cess Road and Bridge of the Pro- ject	10.	Htaunt Chaung	287	0	0	0	0	0	0	0	0
	11.	Ku Lar Bar Taung	463	0	0	0	0	2	0	0	0
	12.	U Gin	746	1	0	0	0	0	0	0	0
	13.	Kyat Tein	722	0	0	0	0	0	0	0	0
	14.	Tha Hpan Khar	101	0	0	0	0	0	0	0	0
	15.	Tha Pyu Taung	202	0	0	1	0	0	0	0	0
		Total:	2,521	1	0	1	0	2	0	0	0
		All total:	9,029	1	0	5	0	18	0	0	0

Notes:

¹ Bamar: Bamar is the largest ethnic race in the country

² Others: Ethnic groups of Bangladeshis, Nepalese, Indians and Chinese

Other ethnic races (Bangladeshis, Nepalese, Indians and Chinese) exist mostly in the villages in western and northern Rakhine State, especially near the borders with Bangladesh and India and Chin State. In the 15 inner zone villages, there are one Kachin household, five Kayin households and 18 Bamar households.

Religious leaders

All the Rakhine nationals profess Buddhism, and as there are no large populations of ethnic races of other faiths, there are only Buddhist buildings in the inner zone 15 villages. Usually, the abbot or presiding monk of a monastery is a religious leader.

The following table shows the numbers of respective religious buildings in the 15 villages.

Table 6-9: Numbers of religious buildings

Sub-project	Sr. No.	Village	Population	No. of religious buildings				
				Buddhism	Christianity	Islamism	Hinduism	Others ¹
Made Island Port Terminal of the Project	1.	Ywar Ma	828	3	0	0	0	0
	2.	Prain	1,582	11	0	0	0	0
	3.	Kyauk Tan	915	5	0	0	0	0
	4.	Kyauk Maw Gyi	169	0	0	0	0	0
	5.	Pan Htain Se	115	2	0	0	0	0
			Total:	3,609	21	0	0	0
Yanbye Island Port Terminal of the Project	6.	Sit Taw	528	8	0	0	0	0
	7.	Kyan Chein	547	2	0	0	0	0
	8.	Say Maw	1,178	3	0	0	0	0
	9.	Thit Poke Taung	646	2	0	0	0	0
			Total:	2,899	15	0	0	0
15-km Access Road	10.	Htaunt Chaung	287	2	0	0	0	0

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Sub-project	Sr. No.	Village	Population	No. of religious buildings				
				Buddhism	Christianity	Islamism	Hinduism	Others ¹
and Bridge of the Project	11.	Ku Lar Bar Taung	463	3	0	0	0	0
	12.	U Gin	746	5	0	0	0	0
	13.	Kyat Tein	722	4	0	0	0	0
	14.	Tha Hpan Khar	101	3	0	0	0	0
	15.	Tha Pyu Taung	202	1	0	0	0	0
	Total:			2,521	18	0	0	0
All total:			9,029	54	0	0	0	

Notes:

¹ Others: "Others" is defined as religions other than the four major religions—Buddhism, Christianity, Islamism and Hinduism.

Table 6-10: Numbers of Buddhist buildings

Sub-project	Sr. No.	Village	Total # of buildings	Monastery	Pagoda	Ordination Hall	Dhamma preaching hall	Rest hall	Monastery kitchen
Made Island Port Terminal of the Project	1.	Ywar Ma	3	0	1	0	1	1	0
	2.	Prain	11	1	2	3	1	4	0
	3.	Kyauk Tan	5	0	2	0	1	2	0
	4.	Kyauk Maw Gyi	0	0	0	0	0	0	0
	5.	Pan Htain Se	2	0	1	0	0	1	0
Total:			21	1	6	3	3	8	0
Yanbye Island Port Terminal of the Project	6.	Sit Taw	8	1	2	1	2	1	1
	7.	Kyan Chein	2	0	1	0	1	0	0
	8.	Say Maw	3	1	1	0	0	1	0
	9.	Thit Poke Taung	2	1	0	0	0	1	0
Total:			15	3	4	1	3	3	1
15-km Access Road and Bridge of the Project	10.	Htaunt Chaung	2	1	0	0	0	1	0
	11.	Ku Lar Bar Taung	3	1	1	0	0	1	0
	12.	U Gin	5	1	2	1	0	1	0
	13.	Kyat Tein	4	1	1	0	1	1	0
	14.	Tha Hpan Khar	3	1	0	1	0	1	0
15.	Tha Pyu Taung	1	1	0	0	0	0	0	
Total:			18	6	4	2	1	5	0
All total			54	10	14	6	7	16	1

Definitions:

1. Monastery: A monastery is a residence of Buddhist monks.
2. Pagoda: Pagodas are religious buildings in which sacred things such as Buddha's relics have been encased.
3. Ordination hall: A novice, usually a male, who has attained 20 years of age, is permitted to enter into monkhood. The novice has to undergo a ritual in an ordination hall in which presiding monks recite related Dhamma texts to upgrade the novice's status to a monk.
4. Dhamma preaching hall: It is a building in which a monk preaches sermons to the congregation.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- 5. Rest hall: Rest halls, known as *zayat* in Myanmar, are common in rural areas. They are built to enable travelers to take a rest.
- 6. Monastery kitchen: Normally Buddhist monks do not cook by themselves. They eat the rice and dishes donated by laypersons. But in places where there are many poor households, monks have their lay-assistants who prepare meals for them.

Like Village Administrators and village elders, Buddhist monks are influential in villages as the Rakhine nationals are pious and revere them. They regard monks as religious, social and moral guides. Monks travel more than average village residents and are more knowledgeable.

Monks and laypersons are mutually dependent as the latter donate cash and/or kind to the former individually or in community, the former share religious, social and moral knowledge with the laypersons.

In community festivals such as *kathina* robe offering ceremony, full-moon day ceremonies, collective novitiation ceremonies, etc., monks serve as leading persons. Monks can be representatives of the local residents.

Township-level Buddhist leaders and other religious leaders are found in Kyauk Phyu Township as follows:

Table 6-11: Religious leaders in Kyauk Phyu Township

Sr. No.	Designation	Association	Religion
1.	Chairman	Township Sangha ¹ Leading Patronage Committee (Shwekyin Sect ²)	Buddhism
2.	Chairman	Township Sangha ¹ Leading Patronage Committee (Mula Dvara Sect)	Buddhism
3.	Chairman	Township Sangha ¹ Leading Patronage Committee (Suddhamma Sect)	Buddhism
4.	Chairman	Islamic Organization, Kyauktalone Quarters	Islamism
5.	Chairman	Hindu Religious Organization, Ah Yar Shi Ward	Hinduism
6.	Lead trustee	Shri Shri Durga Bari (Sandi Medaw ³) Temple	Hinduism
7.	Pastor	Karani Baptist Organization, Karani Church	Christianity
8.	Pastor	Catholic Organization, Catholic Church	Christianity
9.	Pastor	Anglican Organization, Anglican Church	Christianity

Definitions:

- ¹ Sangha: Buddhist monk; member of the Buddhist Order
- ² Sect: In Buddhism in Myanmar, there are three main sects—Shwe Kyin, Su-dhamma and Mula Dvara.
- ³ Medaw: In both Buddhism and Hinduism, *medaw* refers to a living being or a female guardian spirit. If it is a living being, it refers to a lady who possesses supernatural powers. Sandi Medaw is a guardian spirit, worshipped by the people of Hindu faith.

Youth (Under 30)

Youths are defined as those under 30. In Myanmar, the average ages of young persons at the time of their completion of university education range from 22 to 25. The ages of young persons who pursue university education through a correspondence course may be older at the time of completion of their education, at around 30 to 35.

Mostly young persons can be mainly grouped into two: youths remaining in the village, helping their parents' business or doing casual or other jobs and those who have migrated to other places for work. Other places can be other regions within the country, neighbouring countries like Thailand and Malaysia and east-Asian countries like Japan and South Korea. As job opportunities are rare in their villages, young people tend to seek jobs in other places.

As the number of KIIs with young persons in the Scoping Stage was small, this will be made up by holding FGDs with youths in the Investigation Stage.

Women

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

There are no women associations in villages. There are women associations in Kyauk Phyu Township such as Township Women’s Affairs Organization and Township Maternal and Child Welfare Association. According to KIIs and FGDs with members of the two associations, there are no activities of them reaching out to the villages. However, the two associations can be representatives of rural women.

As in the youth group, the number of KIIs with women in the Scoping Stage was small, and this will be made up holding FGDs with women in the Investigation Stage.

6.3.1.2 Stakeholder groups in Kyauk Phyu Township

Many organizations and associations exist in Kyauk Phyu Township. The following stakeholder groups were identified in Kyauk Phyu Township:

1. Political parties
2. Town elders
3. Civil Society Organizations (CSOs)
4. Non-Governmental Organizations (NGOs)
5. International Non-Governmental Organizations (INGOs)
6. Ward Administrators
7. Religious leaders (Already mentioned above)

In addition to the above organizations, in which a few registered youth organizations are included, there are some other youth associations formed in Kyauk Phyu Township but they have not registered with the Township General Administration Department. These unregistered organizations will be mentioned in the ESIA Report. There are women organizations under the heading of NGOs. There are no associations related to minority ethnic groups, except one (Marammagyi Ethnic Organization), and literature and cultural association. Marammagyi is a Rakhine sub-race, but it does not exist in the 15 villages.

The following groups/organizations could not be found in Kyauk Phyu Township:

1. Association related to minority ethnic groups
2. Workers association
3. Agriculture-related association (There is only one peasants’ association but it is based in a village outside the inner zone area.)

Political parties

There are altogether six parties in Kyauk Phyu Township. Except two parties, the other four parties had their representatives attend the Public Consultation Meetings. Some members of the parties were former parliamentary members. The following table shows the six parties.

Table 6-12: Political parties in Kyauk Phyu Township

Sr. No.	Association	Acronym	Office
1.	Arakan League for Democracy	ALD	Kyauk Phyu Township
2.	Union Solidary and Development Party	USDP	Kyauk Phyu Township
3.	Arakan National Party	ANP	Kyauk Phyu Township
4.	National League for Democracy	NLD	Kyauk Phyu Township
5.	Arakan National Force Party	ANFP	Kyauk Phyu Township
6.	Arakan Front Party	AFP	Kyauk Phyu Township

The two parties that did not attend the PCMs were NLD and ANFP.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Town elders

Town elders are usually large businessmen and former government officers and they hold influence over town residents, and their influence reaches even to villages. Among the town elders, some are working for the development of a specific region such as Made Island Development Association.

The following table shows a list of town elders in Kyauk Phyu Township.

Table 6-13: Town elders in Kyauk Phyu Township

Sr. No.	Town elder	Business / Association involved	
1.	U Ba Saw	Nga La Pwae Ward	Kyauk Phyu Township
2.	U San Win	Zay Ti Ya Ward	Kyauk Phyu Township
3.	U Aye Chan Aung	Zay Ti Taung Ward	Kyauk Phyu Township
4.	U Tun Pe	Toe Che Ward	Kyauk Phyu Township
5.	U Tin Kyee	Pyin Phyu Maw Ward	Kyauk Phyu Township
6.	U Nyunt Maung	Myit Nar Tan Ward	Kyauk Phyu Township
7.	U Aung Ba Saw	Myit Nar Tan Ward	Kyauk Phyu Township
8.	U Tun Khaing	Rakhine Paik Seik Ward	Kyauk Phyu Township
9.	U Tun Nu	Than Ban Chaung Ward	Kyauk Phyu Township
10.	U Aung Myat Tun	Than Ban Chaung Ward	Kyauk Phyu Township
11.	U Than Tun	Ah Soe Ya Ward	Kyauk Phyu Township
12.	U Than Tun	Ah Nauk Paing Ward	Kyauk Phyu Township
13.	U Than Win	Ah Nauk Paing Ward	Kyauk Phyu Township
14.	U Than Khe	Ah Shae Paing Ward	Kyauk Phyu Township
15.	U Aye San	Ah Yar Shi Ward	Kyauk Phyu Township
16.	U Aung Than	Ah Yar Shi Ward	Kyauk Phyu Township
17.	U Kyaw Kyaw Soe	Ah Le Paing Ward	Kyauk Phyu Township
18.	U Kyaw Tun	Ah Le Paing Ward	Kyauk Phyu Township
19.	U Than Lwin	Ah Le Paing Ward	Kyauk Phyu Township

Civil Society Organizations

There are 33 CSOs registered with the Township General Administration Department. Of them, 22 are based in Kyauk Phyu Township, and 11 in rural villages. The CSOs can be classified as follows:

Kyauk Phyu-specific associations	22	
1. Educational development	1	
2. Fishery-related	2	
3. Forestry-related	1	
4. Funeral services	4	
5. Health-related	1	
6. Humanitarian	6	
7. Region development (specific region), and	3	
8. Youth development	3	(formed with adults)
9. Protection of Child Rights	1	
Region-specific associations	11	
1. Agriculture-related	1	
2. Funeral services	2	
3. Health-related	1	
4. Humanitarian	2	
5. Regional development	1	
6. Religion-related	3	
7. Youth-related	1	(formed with adults)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

The following table shows various kinds of CSOs:

Table 6-14: Civil Society Organizations in Kyauk Phyu Township

Sr. No.	Association	Sector	Location of activity
Associations in Kyauk Phyu			
1.	Myittar Mon Pyinnar Dana Association	Education	Kyauk Phyu
2.	Sustainable Coastal Fishery Association	Fishery	Kyauk Phyu
3.	Rakkha Ah Man Association (Fishery)	Fishery	Kyauk Phyu
4.	Community Forest Users Association	Forestry	Kyauk Phyu
5.	Khu Hna Sin Kyai Funeral Services Association	Funeral services	Kyauk Phyu
6.	Rakkhita Yinkhwin Feasts & Funeral Services Association	Funeral services	Kyauk Phyu
7.	Tawwin Thazin Feasts and Funeral Services Association	Funeral services	Kyauk Phyu
8.	Duwun Kyai Funeral Services Association	Funeral services	Kyauk Phyu
9.	Kyauk Phyu Blood Donors Association	Health	Kyauk Phyu
10.	Lei Wadi Kula Rakkhita Association	Humanitarian	Kyauk Phyu
11.	Rakkha Thandar Myi Humanitarian Association	Humanitarian	Kyauk Phyu
12.	Paramishin Humanitarian Foundation	Humanitarian	Kyauk Phyu
13.	All Government Service Pensioners Association	Humanitarian	Kyauk Phyu
14.	Nay La Social Benefit Humanitarian Association	Humanitarian	Kyauk Phyu
15.	Lin Yang Chi Humanitarian Association	Humanitarian	Kyauk Phyu
16.	Ratan Metta Association	Projection of Child Rights	Kyauk Phyu
17.	Thandar Myay Development Association	Region development	
18.	Kyauk Phyu Township Local Residents' Socio-Economic Development and Assistance Association	Region development	Kyauk Phyu
19.	Center for Peace and Development	Region development	Kyauk Phyu
20.	Kyauk Phyu Youth Nurturing Association	Youth	Kyauk Phyu
21.	Lunge Ah Man Association	Youth	Kyauk Phyu
22.	Thandar Yin Thwe Association	Youth	Kyauk Phyu
Associations of villages and other places			
23.	Peasants Social Development Association	Agriculture	Kanadee village-tract
24.	Man Aung Township Feasts and Funeral Services Association	Funeral services	Man Aung Township
25.	Tet Nay Lin Feasts and Funeral Services Association	Funeral services	Min Gan village-tract
26.	Ba Nu Aung Health and Social Foundation	Health	Kyat Tein village-tract
27.	Anagat Alinyaung Social Assistance Association	Humanitarian	Gon Chein village-tract
28.	Phyaunt Mat Thu Social Development Association	Humanitarian	Ohn Taw village
29.	Marazine Island No 8 Station Area Development Association	Region development	Marazine Island
30.	Pon Nya Kar Ri Association	Religion	Kularbar village
31.	Sasana Vepulla Association	Religion	Kularbar village
32.	Ananta Myittar Yaungchi Association	Religion	Kularbar village
33.	Lunge Saunt Shauk Yay Association	Youth	Toe Che village

Humanitarian associations are formed to help poor people with their medical treatment and fulfil their basic needs such as rice, edible oil, onion and garlic, potatoes, etc. Feasts and Funeral Services Associations provide two kinds of help: helping in celebrating festivities including communal and religious festivals and also helping poor families in funeral services. Their services are specific only in Kyauk Phyu Township and do not reach rural areas (villages).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Non-Governmental Organizations (NGOs)

In Kyauk Phyu Township, there are five NGOs. The following table shows the five organizations:

Table 6-15: NGOs in Kyauk Phyu Township

Sr. No.	Organization	Location of activity
1.	Township Women's Affairs Organization	Kyauk Phyu Township
2.	Township Maternal and Child Welfare Association	Kyauk Phyu Township
3.	Township War Veterans Organization	Kyauk Phyu Township
4.	Township Red Cross Society	Kyauk Phyu Township
5.	Township Auxiliary Fire Brigade	Kyauk Phyu Township

The non-governmental organizations in Kyauk Phyu Township are engaged in specific activities, and their activities do not extend to rural villages. There is one possibility of the Township Women's Affairs Organization to represent women in rural villages.

International Non-Governmental Organizations (INGOs)

In Kyauk Phyu Township, there were a number of international NGOs in the past, but many of them have closed down their offices. Currently, there remain two international NGOs. Of the two, one is engaged in water purification and sewage services, and the other related to community services and environmental affairs.

The following table show the two organizations:

Table 6-16: International NGOs in Kyauk Phyu Township

Sr. No.	Organization	Acronym	Location of activity
1.	Community Development Association (Purified water and sewage services)	CDA	Kyauk Phyu
2.	Centre of Environment and Resources Development in Arakan	CERDA	Kyauk Phyu

Ward Administrators

In Kyauk Phyu Township, there are 17 wards, and one town (Sane). Ward Administrators take care of the administration of their respective wards. KII's were conducted with eight of them. The following table shows the 17 wards in Kyauk Phyu Township:

Table 6-17: Ward Administrators in Kyauk Phyu Township

Sr. No.	Administrator	Ward		KII (Scoping)
1.	U Kyaw Win	Ah Le Paing Ward	Central Ward	
2.	U Soe Thiha	Ah Nauk Paing Ward	Western Ward	■
3.	U Soe Naing	Ah Shae Paing Ward	Eastern Ward	
4.	U Httay Lwin	Ah Soe Ya Ward	Government Ward	■
5.	U Kyaw Phyu	Ah Yar Shi Ward	Officers' Ward	■
6.	U Nay Lin Tun	Ka Nyin Taw Ward	—	■
7.	U Than Khin	Ku Lar Bar Taung Ward	Ku Lar Bar South Ward	
8.	U Kyaw Than	Ku Lar Paik Seik Ward	—	■
9.	U Kyaw Myo Htwe	Myit Nar Tan Ward	Near-River Ward	
10.	U Tun Tun Naing	Nga La Pwae Ward	—	■
11.	U Khin Maung Tun	Pyin Phyu Maw Ward	—	
12.	U Maung Ba Nu	Rakhine Paik Seik Ward	—	■
13.	U Than Aung	Taung Yin Ward	—	
14.	U Naing Kyaw Linn	Than Ban Chaung Ward	—	
15.	U Tun Myint Aung	Toe Che Ward	Extension Ward	

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Sr. No.	Administrator	Ward		KII (Scoping)
16.	U Than Hlaing	Zedi Taung Ward	Pagoda South Ward	■
17.	U Saw Hla Tun	Zedi Ya Ward	—	

Note: ■ = KII completed in Scoping Stage

6.3.2 Stakeholder Mapping

Stakeholder mapping is an important and useful tool in identifying stakeholders and categorizing them.

An Influence / Interest Matrix will be used to categorize stakeholders and manage the communication needs of various types of stakeholders. Generally speaking, a stakeholder’s level of **interest** in a Project indicates their likely concern, whilst their level of **influence** over the Project indicates their ability to resist recommendations or change. (Table 2-1)

Determining a stakeholder’s level of influence and interest is based on the following attributes:

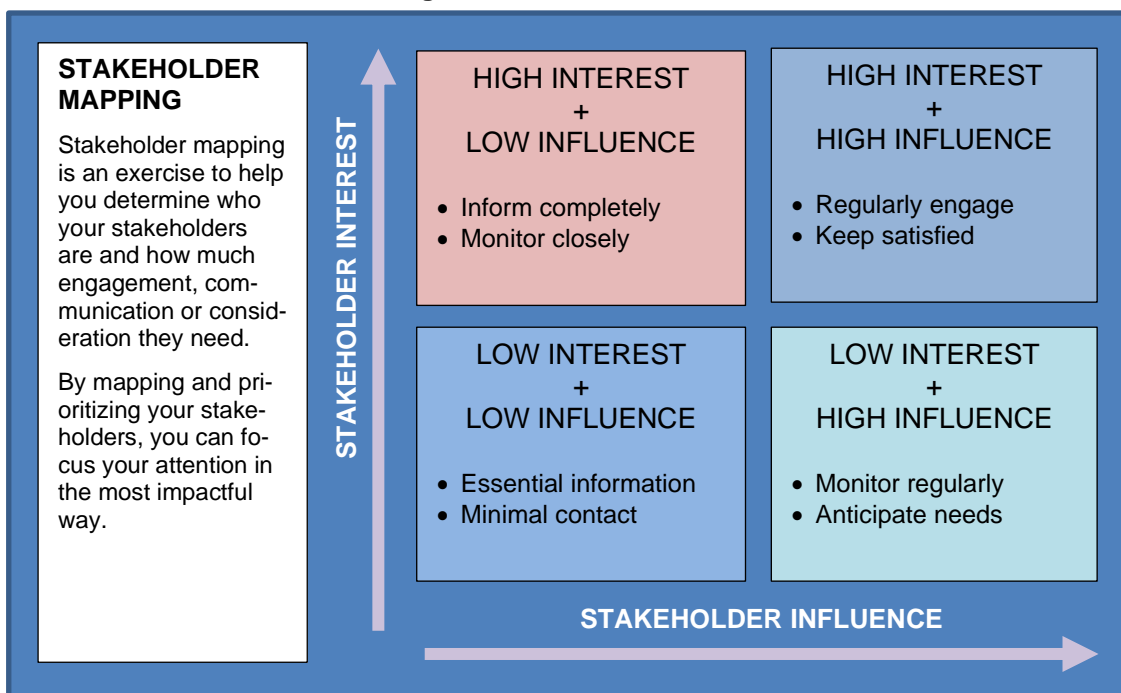
- **Influence:** stakeholders’ level of influence in regard to the implementation of the Project and monitoring of commitments and obligations
- **Interest:** stakeholders’ level of interest in the Project shall be considered by assessing direct and indirect impacts and special interests, that is, their likely concerns – For example, stakeholders located within close proximity or who could be directly impacted by the Project.

It is important to note that the categorization of a stakeholder is not static as their influence or interest could vary throughout the life of this Project.

Equally important is understanding the nature of influence, a concept which is closely related to power. The determination of a stakeholder’s level of influence (or proximity to power) can be subjective. While a particular stakeholder may seem to have a high level of influence, in reality he/she may not. This highlights the importance of identifying and assessing the interest and influence levels of stakeholders, thereby allowing an accurate assessment of the engagement level required.

The following figure shows the concept in stakeholder mapping:

Figure 6-1: Influence / Interest Matrix



Source: SME Strategy Management Consulting (Reproduced)

https://www.smestrategy.net/blog/stakeholder-engagement-management-for-strategic-planning?hs_amp=true

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Developing a stakeholder map helps ensure that a full range of people and organizations have been identified and included. Analyzing stakeholders, grouping them based on specified attributes and understanding their concerns will assist in developing and targeting the Project’s communications and engagement strategy.

Determining levels of engagement using the influence / Interest Matrix

Analysis of stakeholders according to their level of interest in the Project and their level of interest over the Project assists in determining where they are located on the matrix (Figure 6-1).

- **Low interest, low influence**

These stakeholders are relatively unimportant to the Project, but keeping in touch with them is recommended in case their status changes.

- **High interest, low influence**

These stakeholders can be difficult to manage. It is tempting to dismiss or ignore their input as they do not have the power to bring about change. However, if they become sufficiently upset, they may gain influence to resist change. Minorities can become powerful if they manage to garner support from others or enlist powerful allies.

- **Low interest, high influence**

Usually, people with a low interest in a project are disinterested parties. However, if they are persuaded to oppose, they may evolve into formidable opponent and seek to prevent change. It is important to keep them well-informed through regular communication.

- **High interest, high influence**

These stakeholders are both significantly impacted by the Project and have the ability to prevent or thwart it. They may either support or oppose the Project. It is particularly important to engage these stakeholders regarding the impacts (both positive and negative), and ensure that they understand what is happening. It is essential that these stakeholders buy-in to the Project and have a sense of involvement and ownership in the outcomes of the Project.

During the ESIA Scoping Field Trip, stakeholders were identified through the following means:

Table 6-18: Stakeholder influence and interest matrix

Sr. No.	Stakeholder group		Stakeholder influence			Impact of Project on stakeholder group		
			Influence			Interest		
			High:	H		High:	H	
			Medium:	M		Medium:	M	
			Low:	L		Low:	L	
			H	M	L	H	M	L
1.	Fishermen / fishery workers	Low influence, high interest			L	H		
2.	Boat owners				L	H		
3.	Farmers / cultivators				L	H		
4.	Livestock breeders	Low influence, medium interest			L		M	
5.	Local residents in other livelihoods				L		M	
6.	Village administrators/village elders				L		M	
7.	Vulnerable groups				L		M	
8.	Minority ethnic groups				L		M	
9.	Religious leaders				L		M	
10.	Youth				L		M	

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Sr. No.	Stakeholder group		Stakeholder influence			Impact of Project on stakeholder group		
			Influence			Interest		
			High: H	Medium: M	Low: L	High: H	Medium: M	Low: L
			H	M	L	H	M	L
11.	Women							
12.	Ward administrators							
13.	Political parties	Medium influence, medium interest						
14.	Civil Services Organizations							
15.	Non-governmental organizations							
16.	Town elders	High influence, medium interest						
17.	International NGOs							
18.	Government departments							

This analysis matrix shows a highlight of the extent of influence and interest in four groups:

Low-influence, high-interest group

Farmers or cultivators near the two proposed port terminal development and on and off the proposed Access Road and Bridge as well as fishermen (boat owners) and fishery workers who are working in the Thanzit River are potentially directly affected persons. They do not hold influence over the Project while they will be directly affected by the Project.

Low-influence, medium-interest groups

These groups are not directly affected, but are expected to experience medium impacts as their lives are more or less dependent on the two major businesses of cultivation and fishing. For example, dwindling farm production and marine produce may give rise to soaring prices, and difficult access. But they are not in a position to hold influence over the Project.

Medium-influence, medium-interest groups

Compared to the rural populace, political parties, CSOs and NGOs are more knowledgeable, and outspoken and assumed to hold medium influence over the Project. At the same time, they will experience medium range as mentioned above as regional businesses are related to all in the region.

High-influence, medium-interest groups

Town elders are mostly large businessmen, and they, together with the other two groups, may experience medium or indirect impacts from the Project—dwindling trade in agricultural and marine produce, and consequences such as rise of the price of products of the two industries. Large businessmen have to suffer secondary impacts more than average consumers.

Town elders, international NGOs and government departments are assumed as holding high influence over the Project as they have wider networks than other groups. Some of the government departments/enterprises such as the General Administration Department, Agriculture Land Management and Statistics, the Electricity Supply Enterprise, etc. are involved in the activities of the DSP Project.

6.4 Consultation and engagement plan activities

All stakeholder activities have been completed according to schedule in the Scoping Stage. The following table shows the completion against the schedule:

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Table 6-19: Completion of stakeholder engagement activities

Method	Overall schedule	Scoping	Investigation (Rainy season)	Investigation (Dry season)	PCM-specific
		Trip 1	Trip 2	Trip 3	Trip 4
Key informant interviews (KIIs)	189	127	Combined with Trip 1	62	
Focus group discussions (FGDs)	34	9		25	
Workshops	4	2		2	
Public Consultation Meetings	6	2		2	2
	233	140		91	2

Notes:

Trip 1: Trip 1 for collecting data for the scoping of Social Environment of the ESIA was made from August 15, 2022 to September 2, 2022

Trip 2: (Combined with Trip 1 due to unexpected delays)

Trip 3: Trip 2 for collecting baseline data for Social Environment was made from March 15, 2023 to March 31, 2023

Trip 4: Trip 4 is made specifically for holding two Public Consultation Meetings, which are held after compilation of the EIA Investigation Report.

6.4.1 Screening and scoping phase of ESIA process

As mentioned in the above table, two workshops and two public consultation meetings were held and 127 key informant interviews and nine focus group discussions were conducted during the Scoping Stage. The engagement activities were carried out in a transparent manner with disclosure of the Project information, and the ESIA process, and notification of the commencement of the Scoping Phase of the ESIA.

6.4.1.1 Information disclosure

6.4.1.1.1 Project website

The Project Proponent has built a website specifically for the KPSEZ-DSP Project.

Project website:	www.citicmyanmar.com
Information posted:	<ul style="list-style-type: none"> Project background information of the KPSEZ-DSP Project Notice of Commencement of Scoping Stage & Preparation of Scoping Report and ToR for EIA
Information to be posted:	<ul style="list-style-type: none"> The Project Proponent needs to provide project information by posting prominent legible signboards and advertising boards at the Project site which are visible to the public.

6.4.1.1.2 Disclosure of Project information and ESIA process

Invitation of participants

The participants were invited in the following ways:

Material	Method
Invitation letter:	The invitation letter was delivered right to the door step to government officials, town elders, civil service societies (CSOs), international non-governmental organizations (INGOs) and domestic non-governmental organizations (NGOs) The invitation letter was released seven days ahead of the workshops and PCMs.
Advertisement:	The invitation was inserted in the two government newspapers with the widest circulations— <i>The Myanmar Alin Daily</i> (the advertisement in Myanmar language) and <i>The Global New Light of Myanmar</i> (the advertisement in English language). The advertisement was inserted seven days ahead of the workshops and PCMs.

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Poster:	The invitation was prepared in a poster which was posted on the notice boards of the government departments, where many people visit, and public places such as markets, coffee shops, hotels and guest houses.
---------	---

Disclosure of Project Information

PCM	The information about the Kyauk Phyu Special Economic Zone Deep Sea Port Project was disclosed by a representative of the CITIC Consortium: at the first PCM at Hotel Kyauk Phyu in Kyauk Phyu Township on August 27, 2022, and at the second PCM at Made Island Monastery, Kyauk Phyu Township on August 28, 2022.
-----	---

Clarification about ESIA process

PCM:	The leader of each Project Executing Team of MSR Consortium clarified the process of respective discipline: at the first PCM at Hotel Kyauk Phyu in Kyauk Phyu Township on August 27, 2022, and at the second PCM at Made Island Monastery, Kyauk Phyu Township on August 28, 2022.
Workshop:	The ESIA process was also clarified at the beginning of the two workshops at the first Workshop at Hotel Kyauk Phyu in Kyauk Phyu Township on August 25, 2022, and at the second Workshop at the same venue the following day, on August 26, 2022.

6.4.1.1.3 Notifications prior to the PCMs

The following notifications—collectively for the two PCMs—were made public, prior to the two PCMs:

1.	Notification of Project information to the public
2.	Initial notice of the commencement of the EIA scoping, together with a brief information about the Project.
3.	Notice about public participation Meetings

The following table shows the kind of information made public and the date of notification:

Table 6-20: Notifications to the public and notification methods

Sr. No.	Information	Date of giving information				
		2022				
		Aug 10	Aug 13	Aug 14	Aug 18	Aug 25
1.	Notification of Project information					
	1 Newspaper			■		
	2 Project website		■			
	3 Poster	■				
	4 Leaflet					■
	5 Invitation letter				■	
	Project information was briefly carried in newspapers, poster, leaflet and invitation letter. CITIC plans to post comprehensive Project information on the Project website. So far, it has been briefly posted.					
2.	Initial notice of commencement of EIA scoping stage					
	1 Project website		■			
	2 Invitation letter				■	
	Information of the commencement of the EIA Scoping Stage was included in the invitation letter					

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Sr. No.	Information	Date of giving information				
		2022				
		Aug 10	Aug 13	Aug 14	Aug 18	Aug 25
	(PCMs) and also posted on the Project Proponent’s website.					
3.	Notice about public consultation meeting					
	1 Newspaper			■		
	2 Project website		■			
	3 Poster	■				
	4 Leaflet					■
	5 Invitation letter				■	
	Information about holding the two PCMs was shared through all means mentioned above.					

6.4.1.2 Public participation

6.4.1.2.1 Public Consultation Meetings

Objectives of PCMs

The Public Consultation Meetings (PCMs) are held with the following objectives:

1. To explain the Project to the people living in the Project area and surroundings
2. To explain the legal issues that the Project is required to adhere to
3. To explain the fundamentals of baseline data collection:
 - Physical environmental baseline data sample collection
 - Biological environmental baseline data sample collection
 - Marine Ecological baseline data sample collection
 - Socio economic baseline data collection
4. To explain the potential environmental impacts (positive and negative) of the proposed Projects and how to mitigate, reduce impacts and monitor these through the environmental management plan
5. To seek the public opinions and suggestions on the Project, and clarify their concerns.

Schedule for PCM 1 (Kyauk Phyu) and PCM 2 (Made Island)

The public consultation meeting was held by inviting multiple stakeholders, including interested persons and parties. In holding the PCM, the venue, dates, duration, and invitation of participants were considered.

The venue:	The venue “Hotel Kyauk Phyu” was chosen in Kyauk Phyu as a neutral place where the participants could openly reveal their views and concerns. On Made Island, the Made Monastery was chosen. It was the only place on the island with sufficient space to accommodate the participants, and also a place where the participants could contribute their discussions on their views and concerns in an open manner.
The dates:	Dates for holding the PCM were selected only after negotiation with the District General Administration Department. The dates—August 27, 2022 and August 28, 2022—chosen for the PCMs fell on weekends (Saturday and Sunday) on which the majority of stakeholders were available.
The duration:	The participants were given sufficient time for their discussions. In the morning session, the Deep Sea Port (DSP) Project and the procedure and tasks of the Kyauk Phyu Special Economic Zone Deep Sea Port Project (KPSEZ-DSP) Environmental and Social Impact Assessments (ESIAs) were clarified. The

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

	participants were given a chance to discuss their experiences, views and concerns in the afternoon session.
Participants:	Multi-stakeholders including government officials, CSOs, INGOs and NGOs, political parties and local residents, numbering 91 on the first day (in Hotel Kyauk Phyu) and 158 on the second day (in Made Island Monastery) (excluding the attendees of CITIC Consortium and MSR Consortium) were present. The participants were invited seven days ahead of the PCMs.

Table 6-21: Numbers of participants in PCMs 1 and 2 (By gender)

Sr. No.	Participants	Number	Male	Female
Public Consultation Meeting 1				
1	Government	14	13	1
2	CSOs	25	22	3
3	Political parties	4	4	0
4	Ward administrators	9	9	0
5	Media	3	3	0
6	Observers	36	32	4
	PCM 1 total:	91	83	8
Public Consultation Meeting 2				
1	Government	3	3	0
2	CSOs	3	2	1
3	Political parties	2	2	0
4	Observers	151	111	40
5	Media	0	0	0
	PCM 2 total:	159	118	41

Notes:

On the first-day PCM, five (5) CITIC Consortium representatives and 36 MSR Consortium members were present. On the second-day PCM, five (5) CITIC Consortium representatives and 40 MSR Consortium members were present.

Public comments

Participants who discussed at PCM 1 (Kyauk Phyu)

Altogether 20 participants actively discussed their views and concerns at PCM 1, including the following persons:

1. U Tun Kyi (Made) Chairman
Made Island Development Association (CSO)
2. U Tun Kyi (Ku Lar Bar) Member
Centre for Peace and Development (INGO)
3. U Pho San Former MP
Arakan National Party (ANP) (Political party)
4. U Soe Shwe Program Manager
Centre for Environmental and Resources Development in Arakan (CERDA)
5. U Aye San Town elder
Former Assistant Director (Retired government official)
6. U Kyaw Win Director
Centre for Environmental and Resources Development in Arakan

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

(CERDA)

Key findings of PCM 1 (Kyauk Phyu)

At both PCMs, the participants presented issues and their wish to know clear-cut actions and who would take the actions.

The following are key findings from the discussions contributed by the participants at PCM 1:

Table 6-22: Key findings from stakeholders' discussions at PCM 1

Sr. No.	Issue	Comments
Job-related		
1.	Provision of jobs	Priority should be given to locals in providing jobs. In the previous projects, local people could not directly apply to the Project officials for jobs. They had to apply through middlemen. So, would like to know who will take responsibility for providing jobs? ⁴⁴
2.	Salaries	Would like to know which salary standard will be adopted by the Project—international or Myanmar. If it adopts the Myanmar standard, it is not considered adequate for workers because the daily-wage rate fixed by the State is only r MMK 3,000 per day. ⁴⁵
3.	Job-related training	Skills training should be conducted by the Project Proponent so that young persons can take part in the Project. ⁴⁶
4.		Would like to know who will take responsibility for conducting job-oriented training courses—the Project Proponent or the government. It will be difficult for the local people to be appropriated qualified for the jobs without training. ⁴⁷
5.	Workers' issues	Employers usually deny responsibility for workers' issues. Would like to know whether the Project Proponent will open an office in Kyauk Phyu for solving the workers' issues. ⁴⁸
6.	Job creation	Factories such as cold storage and garment factories should be set up for creation of jobs. ⁴⁹
Livelihoods		
7.	Compensation	Proper methods should be applied in compensating the persons who suffer losses due to the Project. Compensation of the affected persons by: 1. Opening accounts for them 2. Establishing businesses for those who suffer losses. ⁵⁰
Road transportation		
8.	Potential road damage	In the construction stage, heavy machines will damage the roads. Would like to know who would take responsibility for repair of roads—government or the Project Proponent. ⁵¹
9.	The right to use the proposed road	Would like to know whether local residents have the right to use the proposed Access Road. ⁵²

⁴⁴ U Pho San, former MP, Arakan National Party, Kyauk Phyu

⁴⁵ U Win Soe, Natural Environment Conservation Group

⁴⁶ Ditto.

⁴⁷ U Win Thant Oo, Director, Lu-nge Ah Man Association

⁴⁸ U Kyaw Ning Htay, Rakkha Thandar Pyi Humanitarian Association

⁴⁹ Dr. Htin Linn Oo, chairman, Union Solidarity and Development Party

⁵⁰ U Aye San, town elder, Kyauk Phyu Township

⁵¹ U Oo Than Myint, Director, Township Environmental Conservation Department

⁵² U Tun Kyi, Chairman, Made Island Development Association

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Issue	Comments
10.	Need to upgrade roads	All roads on Made Island are earthen. They need to be upgraded to concrete or gravel roads. ⁵³
Land issues		
11.	Land ownership	Villagers do not have the title deeds or ownership documents for most of the lands they work on, although they have ancestral rights. ⁵⁴
12.		Land Ownership Law should be amended to be in line with the current situations. ⁵⁵
13.	Lack of appropriate law	There is lack of appropriate law and principle for solving the farmers' issues. Appropriate laws should be enacted. ⁵⁶
14.	Engagement	The Project Proponent should directly engage with farmers to discuss compensation issues. ⁵⁷
15.	Seeking solutions (land prices/ compensation)	Solutions are to be sought in coordination with local residents. Land compensation issue should be solved through coordination among the relevant stakeholders. ⁵⁸
Fisheries		
16.	Compensation for fishers	Would like to know what plans are for compensating the fishers affected. ⁵⁹
17.	Loss of fishing grounds	Would like to know the remedial measures for fishers who will become jobless. ⁶⁰
Corporate Social Responsibility		
18.	CSR funds and activities	Allocation of CSR funds and CSR activities should be scheduled phase by phase—first five years, second five years, etc. ⁶¹
Experiences from previous project		
19.	Demolition of a mountain	When China National Petroleum Corporation (CNPC) brought down a mountain (in Gone Shein Village), about 21 acres impacting 18 farmers were covered by four (4)-foot-thick mud. As solution could not be provided by government departments, the local people, in collaboration with government departments, formed a committee that presented the matter to CNPC. Eventually a Chinese official came out and said it was not caused by the company. Hence, the issue still remains unresolved. ⁶²
20.	CNPC road	CNPC has paved a road (Kyauk Maw Gyi-Ywa Ma) during the pipeline project construction, but it cannot be used by local people because it is damaged and has not been repaired. ⁶³
General		
21.	Fairness	Would like to know who will take responsibility for “fairness, accountability and transparency” if problems arise in environmental, social, economic and livelihood areas. ⁶⁴

⁵³ Ditto.

⁵⁴ U Pho San, former MP, Arakan National Party, Kyauk Phyu

⁵⁵ U Maung Thein Nu, Peasants and Workers Association

⁵⁶ U Hsan Aung, founder, Social Welfare Association

⁵⁷ Ditto.

⁵⁸ U Linn Htin, Peasants Association, Pann Chaung Village, Kyauk Phyu Township

⁵⁹ U Tun Kyi, Chairman of Made Island Development Association

⁶⁰ U Aye San, town elder, Kyauk Phyu Township

⁶¹ U Win Thant Oo, Director, Lu-nge Ah Man Association

⁶² U Tun Kyi, Center for Peace and Development (Ku Lar Bar Taung Village)

⁶³ Daw Yai Thein Nu, Michauung Tet Village, Kanni Village-tract

⁶⁴ U Soe Shwe, Program Manager, Centre for Environmental and Resources Development in Arakan

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Sr. No.	Issue	Comments
22.	Subcontractors	Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd. is the main Project Proponent and there will be many sub-contractors. If problems arise, the Project Proponent needs to take responsibility for its subcontractors. ⁶⁵
23.	Existing law ⁶⁶	The Vacant, Fallow and Virgin Land Management Law (2012) does not protect farmers and instead, causes trouble to farmers. ⁶⁷

Response to the participants’ discussions (First-day PCM)

A representative of CITIC Consortium responded to the discussions by local residents including CSOs, INGOs, NGOs, political parties at the first-day PCM. Most questions were very detailed and specific answers could not be given at this stage.

1. **Response to the questions about negative consequences:** There can be positive as well as negative impacts. CITIC wants fewer negative impacts and more positive impacts. EIA is conducted to find out positive and negative impacts. As many PCMs as possible will be held. Not only MSR but other consultants also will conduct investigations and assessments. CITIC will follow the laws and rules of Myanmar. The questions raised will be answered stage by stage—scoping stage and investigation stage. Answers to the questions as to fisheries, education for women, and education will appear in the Scoping Report when it is completed.
2. **Response to the question about implementation of the Project soon after ESIA:** ESIA is an initial task. There still remain tasks such as conducting physical studies and drawing designs.
3. **Response to recruitment:** Local people will be recruited. The sub-contractor, engaged by CITIC, aims to give priority to the local people for jobs during the construction and operation stages. However, depending on the nature of work, those who are qualified will be appointed.
4. **Response to the question about the use of the proposed road:** Everyone can use the proposed road.
5. **Response to the question about Industrial Park:** Development of the Industrial Park is only at the negotiation stage to enter into an agreement. CITIC wants the development of the Industrial Park as soon as possible as it will provide a lot of jobs. At the initial stage, ESIA and physical studies are needed.
6. **Response to the question about compliance to MSR Report:** When the ESIA Report comes out, it will also carry the Environmental Management Plan (EMP). CITIC will follow the EMP.
7. **Response to the questions about impacts on fishermen:** CITIC Consortium has recorded the questions asked. It also wants to seek advice from the local people. It will manage the issue with the people’s advice. The questions asked are in conformity with the policy of CITIC. The questions asked will be publicized when the report comes out.
8. **Response to the questions about farmlands:** The participants asked how CITIC would respond to the issue of farmlands to be lost in the Project. The Myanmar government is responsible for confiscation of lands. CITIC will use the lands permitted by the government.

⁶⁵ Ditto.

⁶⁶ U Kyaw Than, former MP, ANP

⁶⁷ U Kyaw Than, former MP, ANP

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Participants who discussed at PCM 2 (Made Island)

Altogether 11 participants actively discussed their views and concerns at PCM 2, including the following persons:

1. U Ba Shein Former MP
Advocate and Notary Public
2. U Aye San Town elder
Former Assistant Director (Retired government official)
3. U Tun Kyi (Made) Chairman
Made Island Development Association (CSO)

Key findings of PCM 2 (Made Island)

The following are the key findings from the discussions contributed by the participants at PCM 2:

Table 6-23: Key findings from stakeholders' discussions at PCM 2

Sr. No.	Issue	Comments
Job-related		
1.	Provision of jobs	Residents of Made Island should be given priority in providing jobs since the Project is located in Made Island. ⁶⁸
2.		Are there job opportunities for residents of Made Island? ⁶⁹
3.	Kinds of jobs	Local people will get only hard labor such as carrying sand and gravel, based on previous experience with past projects. Would like to know what kinds of jobs will be available to the local residents of Made Island, and how unskilled workers will be dealt with as priority. ⁷⁰
Livelihoods		
4.	Fisheries	About 80% of the residents on Made Island are engaged in fishing. Residents of Made Island, along with those of other villages like Thit Poke Taung, Sittaw, Say Maw, Ku Lar Bar Taung and War Taung Sakhan villages, rely on fisheries. Would like to know how their requirements will be fulfilled if they lose their fishing grounds? ⁷¹
Road transportation		
5.	Roads	All the roads on Made Islands are muddy. Would like to know who will take responsibility for upgrading the roads and whether there is a plan to upgrade inter-village roads on the island. ⁷²
Land issues		
6.	Compensation per acre	Would like to know how much compensation will be made per acre. ⁷³
7.	Loss of lands	Would like to know who will take responsibility for the loss of lands that will be covered by the road and bridge construction. ⁷⁴
8.	Manipulation of land prices	Speculators bought up farmlands with a hope they will get higher prices in the future. The vulnerable local people have lost their opportunity to receive compensation. ⁷⁵

⁶⁸ U Pauk Phyu, Ywar Ma, Made Island

⁶⁹ U Khin Maung Nyunt, Praing Ywar, Made Island

⁷⁰ U Tun Kyi, Chairman of Made Island Development Association

⁷¹ U Tun Kyi, Chairman, Made Island Development Association

⁷² U Khin Maung Nyunt, Prain, Made Island

⁷³ U Maung Maung Than, Prain, Made Island

⁷⁴ U Tun Kyi, Chairman, Made Island Development Association

⁷⁵ U Ba Shein, former MP, Advocate and Notary Public, Kyauk Phyu

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Sr. No.	Issue	Comments
Corporate social responsibility		
9.	CSR fund	It is heard that CITIC has allocated one million US dollars per year for the first five years for CSR. Would like to know whether the fund would be passed direct to the hands of the people for development activities. ⁷⁶
10.		To lay down CSR fund for Made Island development with transparency. To pass the CSR fund direct to the hands of the residents. ⁷⁷
11.	Electricity supply	Kyauk Maw Gyi and Pan Htain Se villages (on the Made Island) do not have electricity. Would like to know whether there is a plan for electrifying the two villages. ⁷⁸
Experiences from previous project		
12.	Fishery	The fishers lost about half of their fishing grounds due to the CNPC project. If the proposed DSP project is launched, the fishers will lose all their fishing grounds. ⁷⁹
13.	Availability of jobs	In the CNPC project, a person had to pay three (3) million kyats per person to the middleman to get a job. ⁸⁰
14.	CNPC's promise	The CNPC promised to provide jobs, but in reality, nothing happened. ⁸¹
15.	Grievances	Grievances still remain—farmlands confiscated, fishers driven out of their fishing grounds, etc.—from development of the oil pipeline. ⁸²
General		
16.	Loss of jetty	The existing jetty at Made Island will disappear when the DSP port is constructed. To build a new jetty for the use of Made Island residents if the existing jetty is lost. ⁸³
17.	Health care	There is no health care staff such a doctor or a nurse despite the existence of a clinic on the island. ⁸⁴
18.	Construction of school buildings ⁸⁵	If it rains torrentially, flooding occurs and inundates some schools on the island. Would like to know whether there is a plan to build school buildings for children.
19.	Representation	A representative of the island residents should be selected to liaise with the Project company to discuss losses. ⁸⁶

Response to the participants' discussions (Second-day PCM)

A representative of CITIC Consortium responded to the discussions by local residents including CSOs, INGOs, NGOs, political parties at the second-day PCM. Most questions were very detailed and specific answers could not be given at this stage.

1. **Response to the questions about CITIC's promise:** The participants asked if the Project Proponent would keep its promises. The CITIC representative said it is the duty of the Project Proponent to fulfil the requirements of the people.
2. **Stakeholder Engagement:** The representative said stakeholder engagement like this one will be

⁷⁶ U Tun Kyi, Chairman, Made Island Development Association

⁷⁷ U Wai Saw Tin, Made Island

⁷⁸ U Tin Oo Kyaw, Pan Htein Se Village, Made Island

⁷⁹ U Tun Kyi, Chairman, Made Island Development Association

⁸⁰ U Maung Myint Naing, Kyauk Tan village, Made Island

⁸¹ Ditto.

⁸² U Ba Shein, former MP, Advocate and Notary Public, Kyauk Phyu

⁸³ U Maung Myint Naing, Kyauk Tan village, Made Island

⁸⁴ Daw May Than, Kyauk Maw Gyi village, Made Island

⁸⁵ Daw Khin Nwe, Kyauk Tan village, Made Island

⁸⁶ Abbot of Made Island Monastery

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

held often. The purpose is to seek information about impacts on the people and to allow the people to present their views and opinions in a frank manner.

3. **Census survey:** The CITIC representative said there is a plan to conduct a baseline data collection in a census survey in which data will be collected from every household on Made Island. On that occasion, the local residents can reveal their concerns and requirements.
4. **Response to the questions about requirements in road transport, health and education:** The participants asked if there are plans to help fulfil requirements such as upgrading of roads on the island, opening of healthcare facilities and construction of new school buildings. The representative said they will be fulfilled when the implementation of the Project starts.
5. **Step-by-step realization of promises:** CITIC is the responsible company, and the CITIC staff will be serving their duties in Kyauk Phyu and Made. Promises made will be translated into reality step-by-step.
6. **CSR:** CITIC has already started CSR activities since before the Project is started. In the operation stage, there will be more money raised and CSR activities will become extensive.
7. **Question about opening clinic in Made:** CITIC has a plan to provide health care by a mobile clinic. Each and every one of the residents can take treatment at the mobile clinic.
8. **Many questions:** CITIC will continue to work as it has received many questions from the participants. The requirements of the people are those of CITIC and this will contribute to smoothness of the future work.

Identification of how the comments are taken into account

MSR Consortium will incorporate the Scoping Stage comments with those from the Investigative Stage, and mention them in the EIA Report. The comments are to be considered and dealt with by the Project proponent, government departments concerned and local elders. At the current stage, both the Project proponent and the government departments concerned will be able to provide clear-cut solutions to the comments only after proper measures have been coordinated and data collected.

Proposed procedure to deal with comments

1. To designate who is/are responsible for each comment by holding a meeting/meetings between the Project proponent, the government department(s) concerned, and the town elders.
2. To form sector-wise committees by holding meetings
3. To define duties and rights within each committee
4. To take action for each comment

There should also be monitoring committees formed and Grievance Redress Mechanism (GRE) formulated. A detailed GRM will be proposed in the EIA Report.

The following table shows a combination of the comments at the first PCM and those at the second PCM, and suggestions of who should take responsibility:

Sr. No.	Issue	Responsibility					
Codes:	Project proponent: -----	P					
	Government department(s)-----	G					
	Local authorities/elders-----	E					
	P in collaboration with G -----	C ₁					
	G in collaboration with E -----	C ₂					
	P, G and E in collaboration -----	C ₃					
1.	Employment issues:						
	1 Priority to be given to locals in providing jobs	■					
	2 Salary standard proper for Myanmar	■					
	3 Conducting skills training	■					
	4 Solution of workers' issues	■					

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Sr. No.	Issue	Responsibility					
Codes:	Project proponent: ----- P	P	G	E	C ₁	C ₂	C ₃
	Government department(s)----- G						
	Local authorities/elders----- E						
	P in collaboration with G ----- C ₁						
	G in collaboration with E ----- C ₂						
	P, G and E in collaboration ----- C ₃						
5	Creation of jobs						■
6	Middlemen in recruiting for jobs	■					
2.	Compensation for lost livelihoods						
6	Loss of fishing grounds						■
7	Compensation for fishermen					■	
8	Compensation methods					■	
9	Engagement with land owners				■		
3.	Land issues						
10	Compensation for farmers					■	
11	Amendment of Land Ownership Law					■	
12	Lack of appropriate law (Existing: Vacant, Fallow and Virgin Land Management Law)					■	
13	Manipulation of land prices					■	
14	Loss of land covered by the road and bridge construction					■	
4.	Road transportation						
15	Potential road damage						■
16	The right to use proposed road and bridge	■					
5.	Corporate Social Responsibility						
17	CSR funds and activities						■
18	Need to upgrade roads						■
19	Repair of CNPC road						■
20	Need of school buildings						■
21	Electricity supply						■
22	Healthcare						■
6.	General						
23	Fairness, accountability and transparency						■
24	Subcontractors	■					
25	Loss of jetty	■					
26	Representation						

6.4.1.2.2 Meeting Minutes of PCM 1 (Kyauk Phyu Township)

Title:	Meeting on Public Consultation and Disclosure				
Venue:	Hotel Kyauk Phyu (Kyauk Phyu Township)				
Date:	August 27, 2022				
Time:	09:30 – 17:00				
Attendees:	Government	14	CITIC Consortium	5	
	CSOs	25	MSR Consortium	36	
	Political parties	4			
	Ward administrators	9			

CHAPTER 6: Public Consultation and Disclosure

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Media	3		
Observers	36		
Total (Participants):	91	Total (Hosts):	41

Meeting proceedings

Sr. No.	Agenda	Name and discussions	Remark
1.	Opening speech:	U Kyaw Hlaing, Project Director (MSR Consortium)	
		<ul style="list-style-type: none"> Mentioned gratitude for attending the meeting. Invited comments and suggestions. Explained background history of the Project, and MSR Consortium. Explained quality management: <ul style="list-style-type: none"> Project Management Company (Hatch) Quality Management Plan and Health and Safety Plan Explained the scoping stage. 	Brief note
2.	Keynote speech:	U Kyaw San Oo, Secretary, KPSEZ Management Committee	
		<ul style="list-style-type: none"> Explained background history of construction <ul style="list-style-type: none"> Area of the DSP Project Environmental Conservation Plan (SEZ) Invitation of tender 	Brief note
3.	Keynote speech:	Mr. Sun Tiejun, Deputy Managing Director, CITIC Consortium	
		<ul style="list-style-type: none"> Explained CITIC Consortium Introduced participants from CITIC Consortium Talked about Rakhine State and migration of young men to work abroad. Mentioned hope for development of Kyauk Phyu region. Spoke of conducting ESIA, and welcomed questions and suggestions. 	Brief note
4.	Project Information:	Mr. Zhu Zuyang, Engineering Management Department, CITIC Consortium	
		<ul style="list-style-type: none"> Briefed requirements for DSP Project. Talked about why Kyauk Phyu has been chosen for DSP construction. Potentials after construction of the deep-sea ports. Briefed about DSP Project. Explained CITIC policy of People, Prosperity and Planet. 	Brief note
5.	Greetings:	Greetings by Review Team members of MSR Consortium	
		<ul style="list-style-type: none"> Dr. Khin Maung Nyo Dr. Maung Maung Kyi Dr. Than Htut Daw Mra Sabai Nyun U Oo Kyaw Maung 	
6.	Clarifications:	<ul style="list-style-type: none"> U Kyan Dyne Aung (Project Information) Dr. Htay Aung Pyae (Physical Environment) Dr. Tint Swe (Biological Environment) U Aung Lin (Social Environment) 	
7.	Suggestions:	U Tin Than, Review Team member, MSR Consortium	
		<ul style="list-style-type: none"> Said there would be no investment if there were no prospects. The most dangerous impact is deep-sea water pollution. Urged the participants to open up their desires and called for frank discussions. 	
8.	Comments:	U Pho San, former MP, Arakan National Party	

CHAPTER 6: Public Consultation and Disclosure

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sr. No.	Agenda	Name and discussions	Remark
		<ul style="list-style-type: none"> • Welcomed the Project if jobs can be created and bring about regional development. • Who will guarantee for jobs—middlemen in recruiting for jobs; and failure to pay the promised salary (MMK 300,000 instead of the promised MMK 400,00) in the CNPC Project. • Asked the Rakhine State government for tenancy documents for farmers, but it said it needed instructions from above. • In DSP Project, land issues should be solved first. 	Key points
9.	Comments:	<p>U Tun Kyi, Ku La Bar Taung Village</p> <ul style="list-style-type: none"> • The Project should be stopped if it damages the environment. • The government has the responsibility to solve the issues of land ownership. • Who will take responsibility for loss of lands and damage to water resources. • It is not sure whether the promises will be kept. • Want to know clearly whether the government or the Project owners will solve the land issues. • Made Island has not seen development. Want to know what plans CITIC has in store. • Want to ask the Project Proponent what preparations have been made for compensations. • Earth and mud covered 21 acres of farmlands when a mountain was brought down in the CNPC Project. The issue remained unresolved. 	Key points
10.	Comments:	<p>U Win Soe, Natural Environmental Conservation Groups</p> <ul style="list-style-type: none"> • Welcomed the promise of the CITIC's vice-chairman. There is scarcity jobs in the region. • CITIC has committed to creating 3,000 jobs. How will the salaries be fixed—in Myanmar or international standards. • There is no skilled labour. Want to know how will training courses help the young people. 	Key points
11.	Comments:	<p>U Oo Than Myint, Director of Kyauk Phyu District ECD</p> <ul style="list-style-type: none"> • Want to know about the plan to establish Industrial Zone. • From which website other people can get the information about the Project. • Asked whether the ESIA Report covers the Industrial Zone. • If heavy-duty machinery destroys our roads in the construction stage, who will take responsibility to repair them. • Agreement of the local people should be obtained if there is wish for the Project to go smooth. 	Key points
12.	Comments:	<p>U Lin Htin, Farmers' Organization</p> <ul style="list-style-type: none"> • Most young persons literally do not object to the Project. • Have true stories of Project Proponents making commitments which were never realized. • No one knows how compensations will be paid for loss of lands. 	Key points
13.	Comments:	<p>U Win Thant Oo, CSO</p> <ul style="list-style-type: none"> • Want to know how designs will be drawn up for CSR fund. • Will the initial 1,000 out of the 3,000 jobs be given to local residents of Kyauk Phyu or people of other parts of the country. • Want to know how the CSR fund will be used in the first five years, and whether there will be training courses. 	Key points
14.	Comments:	<p>U Tun Kyi, Fishery Businessman</p>	

CHAPTER 6: Public Consultation and Disclosure

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sr. No.	Agenda	Name and discussions	Remark
		<ul style="list-style-type: none"> • There are a lot of fishermen on Made and Yanbye Islands, and their lives will turn upside down if the Project starts. • How will the government and the Project Proponent help them • Direct discussions with them is a must. • Want to ask whether villagers can use the planned road. • There are no good roads on Made Island. • If the Project starts, related roads should be repaired. 	Key points
15.	Comments:	<p>U Kyaw Naing Htay, local resident</p> <ul style="list-style-type: none"> • Want to know if CITIC recruit residents of Made Island and Kanchein village. • Want to know if CITIC opens office in Kyauk Phyu to deal with workers issues. • Want to know if CITIC will translate suggestions mentioned in the MSR Report. • Suggested CSR should be a long-term support to local people as there is lack of employees in schools and healthcare centres. 	Key points
16.	Comments:	<p>Daw Kyu Kyu Lwin, local resident</p> <ul style="list-style-type: none"> • Land plots, hills and fields will be lost if the road is paved. Want to know the remedial measures for the losses. • Is there security for village girls when they are given jobs and training courses. 	Key points
17.	Comments:	<p>U Aye San, town elder</p> <ul style="list-style-type: none"> • Glad to hear CITIC vice-chairman's promises. • Around 15 villages with over 5,300 households in Yanbye Township are involved in the Project—fisher persons losing fishing grounds • Should make a list of fisher persons who will lose fishing grounds and farmers who will lose their lands. • All should work in coordination for achieving success. • CITIC said 50 villages are poor. They will spend the compensation money in a short time. • Should opening saving accounts or start new businesses for them. • Commitments of CITIC should be made known to all government departments. • There are 50 healthcare centres and 50 schools but there are no staff there. 	Key points
18.	Comments:	<p>U Maung Thein Nu, Organization of Farmers and Labourers</p> <ul style="list-style-type: none"> • 75% in the region are farmers. But they do not have tenancy documents. • Of the 15,000 acres in the Project area, farmers have 8,000 acres only in their ownership. • If the Project Proponent and KPSE MC do not deal with this matter, they will suffer losses. 	Key points
19.	Comments:	<p>U San Aung, founder of Social Security Association</p> <ul style="list-style-type: none"> • There should be legal protection in every step of the SEZ Project. • We do not know who to speak to—government or CITIC. • Want to know what the implementing company guarantee. • CITIC should be well informed of the actual situation. • There should be a point of contact with CITIC. • The essence of the SEZ Project is for China's strategic plan and the local people are sandwiched. 	Key points

CHAPTER 6: Public Consultation and Disclosure

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sr. No.	Agenda	Name and discussions	Remark
20.	Comments:	U Soe Shwe, program manager, CERDA (INGO)	Key points
		<ul style="list-style-type: none"> • Asked about preparation of scoping reports. • Suggested conducting survey with marine animals in winter and summer. • If study area is limited only to Kyauk Phyu, marine lives existing beyond the area will be left out. • Polluted water may affect rare species of clams that can be found in shallow water. • Who will guarantee fairness, responsibility and transparency. • Made Island has a dam, but the residents have to use it from other sources. • Many problems will arise when the Project starts. A committee should be formed to deal with them. • CITIC should have measures to deal with issues related to subcontractors. • CITIC should be well informed—who suffer to what extent, what they want, etc. • There should be a decision-maker representing the Project implementer. • There must be practical physical development of the people. Otherwise, it would be counter-productive than advantageous. 	
21.	Response:	U Ko Ko Soe Lwin Thaw, Project Manager	
		<ul style="list-style-type: none"> • Answered questions raised by U Soe Shwe, regarding reports, area of study, etc. 	
22.	Response:	Dr. Tint Swe, Biological Environment	
		<ul style="list-style-type: none"> • Answered questions related to marine animals. 	
23.	Comments:	U Htet Myat Naing, local resident	Key points
		<ul style="list-style-type: none"> • There is only one high school in Made Island. Children do not have access to education as they are occupied with fishing and farming. • The children and young persons on the island should be given vocational education. 	
24.	Comments:	U Kyaw Naing, Rakhine Paikseik Village	Key points
		<ul style="list-style-type: none"> • So far, there are no practice and realization in the presentations here. • A project will cause more or less damage. • People talk about regional development, but they get only small amounts of compensation. • The Vacant, Fallow and Virgin Land Management Law (2012) does not protect the farmers. • People will get into trouble if they do not work for two – three days. 	
25.	Comments:	Dr. Htin Lin Oo, Chairman of Township USDP (Political Party)	Key points
		<ul style="list-style-type: none"> • Local workers of the Made Island may lose jobs and have difficulty in their everyday life even before the completion of the Projects. • Suggested making arrangements by the government and CITIC to provide jobs to 5,000 people through creation of jobs. 	
26.	Comments:	U Kyaw Win, Natural Environment Organization	Key points
		<ul style="list-style-type: none"> • Some fishermen will lose their fishing grounds. • Suggested conserving the natural environment and mangroves. 	

CHAPTER 6: Public Consultation and Disclosure

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sr. No.	Agenda	Name and discussions	Remark
27.	Comments:	Daw Yaing Thein Nu, Mikyaungtet village	Key points
		<ul style="list-style-type: none"> There is a road for gas pipeline project, but people cannot use it. Concerned that natural resources will be damaged thought the SEZ Project will creates jobs. 	
28.	Comments:	Maung Maung Than Htike, student	Key points
		<ul style="list-style-type: none"> Made Island has only one high school. If women are employed, who will be responsible for their security. Suggested conducted training course as the people are not skilled for port work. 	
29.	Comments:	Maung Myint Aung, student	Key points
		<ul style="list-style-type: none"> There are some people in the village who have bought farm-lands. If CITIC buys their lands, how much will it pay? 	
30.	Response:	Mr. Zhu, CITIC Consortium	
		<ul style="list-style-type: none"> There may be bad as well as good situations when the Project starts. For example, paddy plants need water while too much water will spoil the plants. What we want is more advantages and fewer disadvantage. We will hold more public consultation meetings to learn about the people. Local people will be employed on condition that they have required qualifications. Everyone can use the planned road if it is completed. By the time ESIA Report comes out, there will be EMP in it. We will abide by that EMP as well. All the questions regarding fishery business are in agreement with our policies. We will realize the suggestions given here. The Myanmar government is responsible for confiscation of farm land. 	
31.	Clarification:	U Ye Nyunt, MSR Consortium	
		<ul style="list-style-type: none"> Explained the concept of stakeholder engagement and identification of stakeholders. Explained the Grievance Mechanism. 	
32.	Remarks:	Dr Khin Maung Nyo (Review Team), MSR Consortium	Brief note
		<ul style="list-style-type: none"> The participants should share the information from this meeting with their family members. Local people need to understand the DSP Project well. Must cooperate for seeking solutions and justice 	
33.	Remarks:	Dr Maung Maung Kyi (Review Team), MSR Consortium	
		<ul style="list-style-type: none"> Have to weigh profits against loss. Fair participation of the government, the private sector, and the stakeholders is needed. Local people must participate in a united and determined way. Improvement in infrastructure can be achieved through cooperation! 	
34.	Remarks:	U Tin Than (Review Team), MSR Consortium	
		<ul style="list-style-type: none"> Explained “scoping” and “impacts”. All the suggestions will be mentioned in the report. There will be impact assessment of marine species. 	

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Agenda	Name and discussions	Remark
		<ul style="list-style-type: none"> Urged local people to present what they want—e.g. vocational training courses. 	
35.	Concluding remarks	<p>U Kyaw Hlaing, Research Director</p> <ul style="list-style-type: none"> Questions, suggestions, desires, concerns and expectations, all contribute to scoping. At this scoping stage, complete answers cannot be given. There are questions that we do not have answers. After completion of the investigation stage, some answers will come out. Explained revision process of ESIA Report. Grievance Mechanism will be made known to the Project Proponent. 	

6.4.1.2.3 Meeting minutes of PCM 2 (Made Island)

Title:	Meeting on Public Consultation and Disclosure			
Venue:	monastery, Made Island			
Date:	August 28, 2022			
Time:	13:00 – 17:00			
Attendees:	Government	3	CITIC Consortium	5
	CSOs	3	MSR Consortium	40
	Political parties	2		
	Village administrators	-		
	Media	-		
	Observers	151		
	Total (Participants):	159	Total (Hosts):	45

Meeting proceedings

Sr. No.	Agenda	Name and discussions	Remark
1.	Opening speech:	<p>U Kyaw Hlaing, Project Director (MSR Consortium)</p> <ul style="list-style-type: none"> Delivered an opening speech, and explained the aims of ESIA of the Deep Sea Port Project. 	Brief note
2.	Keynote speech:	<p>U Kyaw San Oo, Secretary, KPSEZ Management Committee</p> <ul style="list-style-type: none"> Told how MSR Consortium had won tender to carry out ESIA of the Project. Called on the attitudes of the local people towards the Project. 	Brief note
3.	Keynote speech:	<p>Mr. Sun Tiejun, Deputy Managing Director, & Mr. Zhu Zuyang, Engineering Management Department, CITIC Consortium</p> <ul style="list-style-type: none"> Explained the background situation of the deep-sea port Project. 	Brief note
4.	Keynote speech:	<p>Made Island Monastery Head Monk</p> <ul style="list-style-type: none"> The deep-sea port construction will require co-operation of local people and they should have a person who will represent the whole community and give suggestions on their behalf. There should be substitute jobs for people with fishing or farming business if their business get damaged. 	
5.	Briefings:	<p>Brief of the Project by Review Team members of MSR Consortium</p> <ul style="list-style-type: none"> Dr. Khin Maung Nyo Dr. Maung Maung Kyi Dr. Than Htut 	
6.			

CHAPTER 6: Public Consultation and Disclosure

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sr. No.	Agenda	Name and discussions	Remark
		<ul style="list-style-type: none"> U Tin Than 	
	Clarifications:	<ul style="list-style-type: none"> U Kyan Dyne Aung (Project Information) Dr. Htay Aung Pyae (Physical Environment) Dr. Tint Swe (Biological Environment) 	
8.	Comments:	<p>U Khin Maung Nyunt, Prain Village</p> <ul style="list-style-type: none"> Asked if the construction of deep-sea port at the Made Island would create job opportunities for the residents of the island In previous project, promised that transportation on the roads would be improved, but, the streets and roads on the island are still muddy. Asked what extent MSR can guarantee the job opportunities and development of the island. About 80% of the residents of the island have fishing business, but the deep-sea port Project could make them unable to do fishing any longer. Asked what CITIC would do for them if they lose their fishing grounds to the Project. 	
9.	Comments:	<p>U Maung Yoke Kyi @ U Wai Saw Tin, Local resident</p> <ul style="list-style-type: none"> Asked what local people with fishing business would do if they could no longer fish in the Thanzit River due to the Project. Asked if there would be an arrangement for a substitute business or any other arrangement to help them make a living. Asked if the development program would be made known to all in a transparent way. Asked if there were also arrangement to build roads between the villages on the island when the road construction of the Project started. 	
10.	Comments:	<p>U Maung Maung Myint, Kyauktan Village</p> <ul style="list-style-type: none"> The Made Island would be made to look like Singapore but the village streets were muddy and it wasn't convenient for people to go even on foot on them. Wanted to know if the deep-sea port Project would take in local people as workers and there was any arrangement for them to get training to help them got a job. 	
11.	Comments:	<p>U Maung Maung Than, Prain Village</p> <ul style="list-style-type: none"> Asked how much would be paid per acre of land lost to the port construction. Wanted to know how much CITIC or the government would pay per acre of farmland lost to the Project. Did not believe local workers from the Made Island would be able to take jobs in the port consortium as it would use only heavy machinery. About 5,000 people are making their living in the Thanzit River. Asked what would be done if they couldn't do fishing in the river because of the Project. Heard that CITIC would take in 1,000 people first and then 3,000 people as workers. Wanted to know if CITIC would give them the job of carrying rocks and sand only or permanent jobs after giving them proper trainings. 	
12.	Comments:	<p>U Maung Myint Naing, Kyauktan Village</p> <ul style="list-style-type: none"> Believed that the upcoming deep sea port construction project would make the fishing business stop. 	

CHAPTER 6: Public Consultation and Disclosure

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sr. No.	Agenda	Name and discussions	Remark
		<ul style="list-style-type: none"> • Asked what the company was going to do with that problem. • The deep-sea port Project will take up the place that local motorboats and powered boats use for loading and unloading. • Wanted to know whether there was any arrangement to build a jetty elsewhere for local boats so that they could use it 24 hours a day. 	
13.	Comments:	<p>U Pauk Phyu, Made Ywarma</p> <ul style="list-style-type: none"> • Head during the meeting on the previous project that local people of the Made Island would be given jobs, but only one or two were employed. • Asked whether the construction work would give priority to the local people in employing workers. 	
14	Comments:	<p>U Tin Ohn Kyaw, Pan Htain Se Village</p> <ul style="list-style-type: none"> • People from the village should also be considered for the jobs if the local people would be given priority in employing workers. • Asked if it was possible and if there were arrangements to develop the villages. • Out of 5 villages on the Made Island, only Pan Htain Se Village didn't have electricity. • Wanted to know whether the deep-sea port construction project would help the village get electricity, build roads leading to other villages and get fresh water. 	
15.	Comments:	<p>U Tun Kyi, Made Island</p> <ul style="list-style-type: none"> • Half the fishery business has already been damaged by CNPC company, which has done construction work and does its business; its business involves only one or two oil tankers using the port. • There will be more damage to the fishing business as the upcoming deep sea port business will involve many vessels coming in and going out; farmlands on the Made Island have been getting damaged and are expected to get damaged more. • Wanted to know who would pay the compensation for the land to be lost to the construction of road and bridge and who would build roads between villages on the Made Island. • CITIC will give priority to skilled workers, asked what would be done to help unskilled people get jobs. • Wanted to know if there were arrangements to discuss with village elders and leaders improving the Made Island and employing workers. • The jetty area the residents of the Made Island use every day will be taken in by the deep-sea port construction. • Asked if CITIC Company would build a jetty. • Heard CITIC would spend one million USD of CSR fund a year during first 5 years. • Wanted to know if there were plans to give the fund to the local people and do the development work. • Asked if CITIC could do in consultation with people who represent all the islanders. 	
16.	Comments:	<p>Daw May Than, Kyauk Maw Gyi</p> <ul style="list-style-type: none"> • After CNPC has built a port and when oil tankers came in and go out along the river, those tankers give rise the big waves that make local fishing boats sink and the fishermen lose their belonging in the river. 	

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Agenda	Name and discussions	Remark
		<ul style="list-style-type: none"> Residents of the Made Island have to depend on the waterway for travelling; the islanders have no good roads, and their rural health center has no medical doctors or nurses. Asked if there were ways to build roads and to help the islanders get doctors and nurses. 	
17.	Comments;	Daw Khin Nwet, Kyauktan Village	
		<ul style="list-style-type: none"> During the time of heavy rain, compounds of the schools are flooded, and streets in the villages are muddy. Wanted to know whether new schools could be built and streets be repaired. 	
18.	Comments;	Daw Shwe Win, Chairperson, Community Forest User Group	
		<ul style="list-style-type: none"> Asked how MSR was collecting socio-economic data on the island Wanted to know if the Project Proponent or the government has a plan to build a jetty at the island. Asked if there would be a monitoring according to the monitoring plan. 	
19.	Comments;	U Ba Shein, former MP	
		<ul style="list-style-type: none"> When it comes to implementing an industrial zone, sea ports will be built, fishermen will lose their fishing grounds, the natural environment will be damaged. So everyday life of the local people should be considered. CSR is for the purpose of making up for the loss of local people. We need a good government to help citizens get what they deserve or something. Assigning CITIC, the implementation of deep-sea port Project does not mean giving something to the people of the Made Island or Kyanchein Village. Local people should tell the people in authority to provide for their requirements; there will be no solutions by talking out of emotional outburst, or anger or pride. MSR, after the ESIA report, should include in its further reports, concerns of the local people, and possible impacts on the environment; and the local people should give correct data to MSR. The local people are worried the upcoming project may cause them more trouble in addition to what they already have, caused by the previous project of port construction for oil tankers. Suggested to local people that they should — with a good understanding and attitude and good relationship — try to make the changes productive and fruitful in collaboration with the Project Proponent towards local development. 	
20.	Responses;	Mr. Zhu, CITIC Consortium Myanmar Port Investment Limited	
		<ul style="list-style-type: none"> Will hold such stakeholder engagements often to know the effects on the people and give them chance to speak frankly and give suggestion. Construction of roads, health center building and school building will follows as the Project implementation goes along. CSR program has started even before the Project work comes. Expected to do more of the CSR program by the time the Project is in function with financial aids coming in. 	

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Sr. No.	Agenda	Name and discussions	Remark
		<ul style="list-style-type: none"> • Arranged for a mobile clinic on the island and the villagers can come individually. • Will work hard on the tasks of the Project; requirements of the public are the requirements of CITIC. 	
21	Responses;	U Kyaw Hlaing, Myanmar Survey Research (MSR)	
		<ul style="list-style-type: none"> • Recorded all the discussions here and they will be included in the scoping report. • MSR had called an application from young people in the Made Island and Kyauk Phyu to collect data • Interviewed 40 young people from Kyauk Phyu as the first batch. • Selected 10 people from the Made Island and 20 from Kyauk Phyu for the data collection. • Temporarily appointed 3 from Made and 4 from Kyauk Phyu for the time being. • Data will be collected from every household of the Made Island and from 50 villages that will represent 1000 households in Kyauk Phyu. • Along suggestions from every household and from group discussions, a group comprising Made Island Head Monk and other resourceful 5 people representing the island will be formed, to exchange views in detail, based on the situations in the villages. • Children learning at grade four or five will be about 20 years of age in 5 or 10 years; by that time, they may quit the traditional fishing and paddy growing and will be ready to take jobs in the Project. 	

6.4.1.3 Scoping Workshops

In the ESIA Scoping Stage, the Scoping Workshop was held for two days at Hotel Kyauk Phyu in Kyauk Phyu Township, on August 25, 2022 and August 26, 2022.

Objectives

The objectives of conducting workshops are:

1. To disclose information about the proposed Project to all stakeholders
2. To enable the public and different stakeholders to discuss and exchange views on specific topics
3. To consider the views, concerns, and perceptions of all stakeholders that could be affected by the Project or who otherwise have an interest in the Project
4. To include the results of consultations with the public, affected populations and other stakeholders in the environmental and social issues and
5. To consider the concerns raised during workshops throughout the scoping and EIA processes, namely, identifying and assessing impacts, designing mitigation measures, and in the development of management and monitoring plans

The two scoping workshops were held by inviting participants who know the local context and provide feedback on potential positive and negative impacts. In holding the workshops, the venue, dates, duration, and invitation of participants were considered.

The venue:	The venue “Hotel Kyauk Phyu” was chosen in Kyauk Phyu as a neutral place where the participants could openly reveal their views and concerns. Both workshops were held at the same venue.
The dates:	Dates for holding the workshops were selected only after negotiation with the District General Administration Department. The dates—August 25, 2022 and

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

	August 26, 2022—were chosen for the two workshops.
The duration:	The participants were given sufficient time for group discussions. In the morning session, the process and tasks of the Kyauk Phyu Special Economic Zone Deep Sea Port Project (KPSEZ-DSP) Environmental and Social Impact Assessments (ESIAs) were clarified. The consultant of each discipline explained the respective tasks for assessments.
Invitation:	The participants were invited by delivering the invitation letter to the address. The invitation letter was released seven days ahead of the workshops.
The participants:	The participants were from multi-stakeholder groups, and they understand well about the residents of the villages near the two proposed port terminal sites and on and off the proposed road. The participants could anticipate and discuss the impacts, taking lessons from the previous CNPC project.
Group discussions:	On the first day (August 25), members of the five groups discussed potential positive and negative impacts in five topics from the DSP Project. At the end of the group discussions, 11 persons presented their experiences and concerns. The total number of participants on the first day was 94. On the second day (August 26), the same members of the five groups discussed mitigation measures for the impacts they discussed the previous day. At the end of the group discussions, 9 persons presented their suggestions. The total number of participants on the second day was 72.

Table 6-24: Topics for discussions at the two workshops

Sr. No.	Topic discussed	Facilitator	No. of participants		First day	Second day
			1 st day	2 nd day		
1.	Natural resources and mangroves	Dr. Aye Aye Saw (ESIA Consultant)	10	9	Positive and negative impacts	Mitigation measures
2.	Fishery and marine/aquatic animals	U Min Min Tun (Rakhine Expert)	7	8		
3.	Farmlands, agriculture and livestock breeding	U Oo Kyaw Maung (Rakhine Expert)	11	9		
4.	Rural places, transportation and water resources	Dr. Htay Aung Pyae (ESIA Consultant)	13	10		
5.	Health, education and cultural traditions and customs	Dr. Ko Ko Toe Lwin Thaw (Professor)	13	6		

Key findings from the two workshops

Participants in the two workshops discussed their concerns, views and suggestions in a candid manner. Their verbatim discussions were long, but the number of key points of each participant is small. Therefore, their key points have been summarized and summed up separately.

(See the findings in Chapter 5: Key Potential Environmental Impacts and Mitigation Measures)

6.4.1.4 Key Informant Interviews

Altogether 127 key informant interviews (KIIs) were conducted for gathering baseline information about the socio-economic life, basic requirements, land use, and existing conditions, by asking in-depth questions. In addition, awareness, perceptions, views and concerns about the DSP Projects were recorded.

The total number of KIIs scheduled for the Scoping and Investigation Stages is 182. The team completed 127 interviews in the Scoping Stage, and will complete the remaining 55 interviews in the Dry Season Investigation Field Trip. However, after review of the allocation of interviews during the Scoping Stage and findings, the remaining number will be adjusted again.

The KII respondents were identified through the village administrators and village elders.

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Table 6-25: Kills completed in the Scoping Phase

Sr.	Stakeholder groups	2022														Total
		Aug 16	Aug 17	Aug 18	Aug 19	Aug 20	Aug 21	Aug 22	Aug 23	Aug 24	Aug 29	Aug 30	Aug 31	Sep 1	Sep 2	
1.	Village administrator	1	0	0	0	2	1	2	0	5	1	2	0	0	0	14
2.	Ward administrator	0	0	3	1	0	0	0	0	0	0	0	0	0	4	8
3.	Village profile	2	0	0	0	2	1	2	0	5	1	2	0	0	0	15
4.	Fishermen	4	0	0	0	0	0	0	0	1	0	0	0	0	0	5
5.	Boat owners	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5
6.	Farmers	1	0	0	0	4	0	0	0	0	0	1	0	0	0	6
7.	Ethnic minorities	0	0	0	1	0	0	0	0	0	0	0	1	1	0	3
8.	Women	0	0	0	2	0	0	1	0	0	0	0	0	0	0	3
9.	Youth	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
10.	Vulnerable groups	4	0	0	0	0	0	0	0	1	0	0	0	0	0	5
11.	Religious leaders	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
12.	Fishermen association	1	0	0	0	0	0	1	0	1	0	0	0	0	0	3
13.	Boat owners assoc. ¹	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.	Town elders	1	3	1	3	1	0	0	0	0	0	0	0	0	0	9
15.	Political parties	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
16.	Money lenders	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17.	Cultural associations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.	CSO/INGO/NGO ²	3	1	4	1	4	0	0	1	0	0	0	0	0	0	14
19.	Govt ³ department	0	0	2	5	1	0	0	0	0	0	0	0	0	0	8
20.	Culture ⁴	0	0	0	0	2	3	2	0	0	0	0	0	0	0	7
21.	Health	2	0	0	0	2	1	2	0	4	1	2	0	0	0	14
	Total:	20	5	13	14	18	6	10	1	22	3	7	1	3	4	127

Notes:

- ¹ assoc. = association
- ² INGO/NGO: There are two INGOs or five NGOs in Kyauk Phyu Township
- ³ govt. = government
- ⁴ Culture: Cultural interviews were conducted by Interview Team members. The interviews conducted separately by the Cultural Consultant (Dr. Ko Ko Toe Lwin Thaw) are not listed in this table.

Table 6-26: Places where Kills were conducted

Sr. No.	2022	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge					Kyauk Phyu	Total	
		Ywar Ma	Prain	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Saw Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar			Tha Pyu Taung
1.	Aug 16	0	0	0	0	0	9	0	0	7	0	0	0	0	0	0	4	20
2.	Aug 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
3.	Aug 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
4.	Aug 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Sr. No.	2022	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge						Kyauk Phyu	Total
		Ywar Ma	Prain	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Saw Maw	Thit Poke Taung	Htaung Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar	Tha Pyu Taung		
5.	Aug 20	0	0	0	0	0	0	0	0	0	0	0	6	0	6	6	18	
6.	Aug 21	0	0	0	0	0	1	4	0	1	0	0	0	0	0	0	6	
7.	Aug 22	0	0	0	0	0	0	0	0	0	4	6	0	0	0	0	10	
8.	Aug 23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
9.	Aug 24	4	5	4	5	4	0	0	0	0	0	0	0	0	0	0	22	
10.	Aug 29	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	
11.	Aug 30	0	0	0	0	0	0	0	4	0	0	0	3	0	0	0	7	
12.	Aug 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
13.	Sep 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	
14.	Sep 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	
		4	5	4	5	4	10	4	4	8	4	6	3	6	3	6	51	127

Table 6-27: KIIs completed team-wise

Team	2022														Total
	Aug 16	Aug 17	Aug 18	Aug 19	Aug 20	Aug 21	Aug 22	Aug 23	Aug 24	Aug 29	Aug 30	Aug 31	Sep 1	Sep 2	
1	4	3	4	4	4	3	4	0	5	1	1	0	0	0	33
2	10	2	6	4	3	0	0	1	5	0	0	0	0	0	31
3	2	0	0	0	3	0	3	0	4	1	2	1	3	4	23
4	2	0	3	6	3	0	1	0	3	1	1	0	0	0	20
5	0	0	0	0	5	0	0	0	5	0	3	0	0	0	13
6	0	0	0	0	0	3	2	0	0	0	0	0	0	0	5
7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total:	20	5	13	14	18	6	10	1	22	3	7	1	3	4	127

6.4.1.5 Focus Group Discussions

FGDs were conducted to acquire views from different perspectives (especially views of the fishermen, cultivators, women, etc.) and investigate challenges faced in their daily life, land use and existing environmental conditions and infrastructure, compared with the conditions of the past five to ten years, and to understand how project impacts have the potential to impact local spiritual, cultural, business interests and whether there is local / Indigenous knowledge important to the impact assessment.

The total number of FGDs scheduled for the Scoping and Investigation Stages is 22. The team completed nine (9) FGDs in the Scoping Stage, and will complete the remaining 13 FGDs in the Dry Season Investigation Field Trip. However, after review of the allocation of FGDs, existence of stakeholder groups in villages and findings, the number will be revised again.

The FGD respondents were identified through the village administrators and village elders.

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Table 6-27: FGDs conducted in the Scoping Phase

Sr. No.	Stakeholder group	2022									Total
		Aug 16	Aug 17	Aug 18	Aug 19	Aug 20	Aug 21	Aug 22	Aug 23	Aug 24	
1.	Fishermen' association	1	0	0	0	0	0	0	0	0	1
2.	Boat owners' association	0	0	0	0	0	0	0	0	1	1
3.	Farmers	0	0	0	0	1	1	0	0	0	2
4.	Ethnic minorities	0	0	0	0	0	0	0	0	0	0
5.	Women	0	0	0	1	0	0	0	0	0	1
6.	Youth (Under 30)	0	0	0	0	0	0	1	0	0	1
7.	Environmental watch group	0	0	0	0	0	0	0	0	0	0
8.	Development association	0	0	0	0	0	0	1	0	0	1
9.	CSO/INGO/NGO ¹	0	0	0	0	0	0	0	0	0	0
10.	Government departments	0	0	0	0	0	0	0	0	0	0
11.	Culture	0	0	0	0	0	0	0	0	0	0
12.	Health	0	0	0	0	0	0	1		1	2
	Total:	1	0	0	1	1	1	3	0	2	9

Table 6-28: Places where FGDs were conducted

2022	Stakeholder group	No. of FGD	Village/Downtown	Made Port	Yanbye Port	Access Road	Kyauk Phyu
Aug 16	Fishermen	1	Thit Poke Taung		■		
Aug 19	Women	1	Kyauk Phyu				■
Aug 20	Farmers	1	Kyat Tein			■	
Aug 21	Farmers	1	Kyan Chein		■		
Aug 22	Youth (U-30)	1	Ku Lar Bar Taung			■	
Aug 22	Health	1	Downtown				■
Aug 22	Farmers	1	Downtown				■
Aug 24	Health	1	Kyauk Maw Gyi	■			
Aug 24	Boat owner	1	Prain	■			
	Total:	9		2	2	2	3

Table 6-30: FGDs completed team-wise

Sr. No.	Team	2022									Total
		Aug 16	Aug 17	Aug 18	Aug 19	Aug 20	Aug 21	Aug 22	Aug 23	Aug 24	
1.	Team 1	0	0	0	0	1	1	1	0	1	4
2.	Team 2	2	0	0	1	0	0	0	0	0	3
3.	Team 3	0	0	0	0	0	0	0	0	1	1
4.	Team 4	0	0	0	0	0	0	1	0	0	1
	Total:	2	0	0	1	1	1	2	0	2	9

Notes: Team 1: U Min Min Tun (Leader) and U Aung Khant Phyo (Note-taker)
 Team 2: U Htay Min (Leader) and Ms Myint Myint Zaw (Note-taker)
 Team 3: Dr. Thant Htut (Leader) and U Maung Maung Win (Note-taker)
 Team 4: Dr. Mon Mon Tin Oo (Leader) and Ms Wutyi Soe (Note-taker)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Key findings from KIIs and FGDs

The majority of the respondents to the key informant questions and participants to the FGDs could identify potential impacts from the DSP Project. They mainly talked about their concerns, requirements in their villages and impacts from the previous project (CNPC).

(See the findings in Chapter 4: Description of Surrounding Environment and Chapter 5: Key Potential Environmental Impacts and Mitigation Measures)

6.4.1.6 Engagement with government departments

The government departments are also key stakeholders. MSR Consortium had engagements with some government departments in its Scoping Stage:

1. To acquire necessary data and information needed for the ESIA Project
2. To ensure compliance with legal requirements
3. To ensure smooth implementation of the Project activities, and receive guidance and
4. To understand the concerns and priorities of the government sector

Government departments (kinds and levels)

Generally, there are departments, enterprises and organizations under a Union ministry. Departments are non-income seeking institutions (such as the Department of Education and Department of Health). Enterprises are incomer-earning institutions (such as Electricity Supply Enterprise). Organizations are mostly related to judiciary and administrative affairs and regional development. Some departments, named “directorate”, are equal to “department.”

By level, there are head offices (based in Nay Pyi Taw), Region/State offices, district offices and township offices.

MSR Consortium engaged a total of 95 officers from 31 government institutions (departments, enterprises and organizations), their engagement being respondents to KIIs, participants at workshops and public consultation meetings and providers of data and information needed for ESIA for KPSEZ-DSP Project.

Table 6-29: No. of government officers engaged in Scoping Phase

Sr. No.	Method of engagement	No. of government officers	Remarks	
1.	Key informant inter-views	Departmental officers	9	The same persons attended each of the two-day workshops.
		Village administrators	15	
		Ward administrators	17	
2.	Acquisition of data	4		
3.	Workshops	34		
4.	Public Consultation Meetings	16		
		95		

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Table 6-30: Government departments, enterprises and organizations engaged

Sr. No.	Government Department	Level				
			KII	PCM	Workshop	Data acquisition
1.	Attorney's Office	Township	0	0	1	0
2.	Department of Agricultural Land Management & Statistics	Township	1	1	1	1
3.	Department of Agriculture	Township	1	0	1	0
4.	Department of Cooperative	Township	0	1	0	0
5.	Department of Disaster Management	District	0	1	2	0
6.	Department of Environmental Conservation	Township	1	3	8	0
7.	Department of Fire Services	Township	1	0	0	0
8.	Department of Fishery	District	0	0	2	1
9.	Department of Forestry	Township	1	0	2	0
10.	Department of General Administration	Township	0	0	5	1
11.	Department of Hotel & Tourism	Township	0	1	0	0
12.	Department of Inland Water Transport	District	0	0	1	0
13.	Department of Livestock Breeding & Veterinary	Township	1	0	1	0
14.	Department of Marine Administration	Township	0	1	0	0
15.	Department of Meteorology and Hydrology	Region	0	0	0	1
16.	Department of Planning	Township	0	0	2	0
17.	Department of Religious Affairs	District	0	0	1	0
18.	Department of Religious Affairs	Township	1	0	0	0
19.	Department of Rural Roads	Township	0	1	2	0
20.	Department of Urban and Housing Development	District	0	1	1	0
21.	Dept. ¹ of Broder Areas & Ethnic Peoples Development	District	0	1	0	0
22.	Development Committee	Township	1	0	0	0
23.	Development Supervision Office	District	0	0	1	0
24.	Directorate of Labour	District	0	0	1	0
25.	Electricity Supply Enterprise	Township	1	0	0	0
26.	KPSEZ Management Committee	Township	0	2	0	0
27.	Myanmar Port Authority	District	0	0	1	0
28.	Myanmar Salt Enterprise	District	0	1	1	0
29.	Police Force (Kyauk Phyu & Made)	Township	0	2	0	0
30.	Village administrators	Village	15	0	0	0
31.	Ward administrators	Ward	17	0	0	0
Total ►		95	41	16	34	4

Note:

¹ Dept. = department

Key findings

At the two Public Consultation Meetings, government officers were not included among the participants who stood up and actively contributed their comments. At the workshops, the discussions were group-based and the names of government officers who contributed their ideas on potential positive and

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

negative impacts and mitigations did not appear. FGDs could not be organized with government officers as it was difficult to gather government officers at the same place at the same time.

Key informant interviews were conducted with nine departments. Of them, two KIIs were specifically for culture. The key issue with the government departments is lack of funds—needed for their routine work, and especially for specific projects like the DSP Project. The following are key points of the discussions of seven government departments.

Table 6-31: Key findings from discussions with government officers

Sr. No.	Issue	Discussion / suggestion
1.	Cost of government services ⁸⁷	<p>Survey of land for the KPSEZ-DSP Project was carried out by the Department of Agricultural Land Management and Statistics from 2014 to 2016. It took place during the President U Thein Sein period (2011-2015). The department had to spend four (4) million kyats on the land survey. Neither the government nor the Project company disbursed any money for this service. The work was suspended, and only resumed about two years ago.</p> <p>Key point: There are no specific funds for government departments providing services for KPSEZ-DSP Project.</p>
2.	Existing conditions	<p>Manipulation of land prices:⁸⁸ The price of land in 2016 was 2.5 million kyats per acre. Some business people came to the area when they heard about the planned development of Kyauk Phyu Special Economic Zone, and purchased plots of farmlands.</p> <p>Land use:⁸⁹ Currently, farmers are working on vacant and fallow lands without officially applying for permit to work on them. Form 7 is not issued unless they put in an application. Land confiscation is carried out by the Township General Administration Department concerned.</p> <p>Cultivation costs:⁹⁰ Current agriculture business is difficult for farmers. They do not have capital, machinery, workers, etc. When they sell their produce, they receive a small profit due to the high cost of inputs.</p> <p>Positive impacts from the previous project:⁹¹ The previous project (CNPC), electrified some villages on Made Island, established a water supply and paved streets with concrete.</p> <p>Electricity supply for DSP Project:⁹² The Township Electricity Supply Enterprise (ESE) has built a 150-MW sub-station and a gas-powered 135-MW sub-station is under construction, which is slated for completion in August 2023. On Made Island, there is a 66/11 KV sub-station. All villages except Pan Htain Se and Kyauk Maw Gyi have been lit. It is needed to extract 11 KV. But it has not yet been done.</p> <p>Environmental research:⁹³ Regarding the Thanzit River water, the Township ECD analyzed the sampled water and submitted the results to higher levels in 2018. Monitoring in this regard still continues.</p> <p>The department, together with local residents and humanitarian organizations, is engaged in a cleaning campaign on the Kyauk Phyu Beach every Saturday.</p> <p>The department has kept a database of air quality in Kyauk Phyu since 2020, which is updated monthly.</p>

⁸⁷ U Tun Tun Oo, Head of Township Department of Agricultural Land Management and Statistics

⁸⁸ Ditto

⁸⁹ Ditto

⁹⁰ Daw Mar San Win, Head of Township Department of Agriculture

⁹¹ U Tun Tun Oo, Head of Township Department of Agricultural Land Management and Statistics

⁹² U Ye Zeya Min, Head of Township Electricity Supply Enterprise

⁹³ U Hlwan Moe Htet, Assistant Director, Township Environmental Conservation Department

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Sr. No.	Issue	Discussion / suggestion
		The baseline data collection had been carrying out; the preliminary findings were being obtained to inform the impact assessment for those re-lated subjects. The full baseline data collection is scheduled to be accomplished after getting scoping opinions from ECD.
3.	Compensation for loss of livelihoods	Suggestion: The best way to compensate for the loss of livelihoods is provision of jobs. The DSP Project will not be able to provide many jobs but it is expected that factories will be able to provide jobs in large numbers. ⁹⁴ There are persons working on the virgin and fallow lands, those who have had their lands registered, those who are working the ancestral lands, those who are operating prawn breeding ponds, etc. The rate of compensation per acre should be considered, and priority is to be given to actually affected persons and the vulnerable. ⁹⁵
4.	Potential positive impact ⁹⁶	If the bridge is spanned, residents on Made Island will have easy access to town, especially in relation to health issues. The villages will be lit 24 hours. If the bridge is built, it will be convenient for our department (Livestock Breeding and Veterinary Department) to travel to Made Island. ⁹⁷
5.	Grievances	A Drop box should be placed at the General Administration Department. Grievances should be managed by a committee formed with departmental staff related to health, agriculture, forestry, environmental conservation, veterinary and livestock breeding, etc. Poor families and the disabled do not know how to lodge their complaints. For this, village/ward administrators' offices should help them. ⁹⁸ A Drop box is not to be trusted. The complaint letter needs to reach the company. The person who lodges a complaint should not be anonymous. Proper contact information is required. ⁹⁹ The Project company must open an office in Kyauk Phyu where people can submit their grievance letters. The person who lodges a complaint must provide full contact information so that the officer-in-charge can contact him/her. CCTV must be installed at the office. We do not want unscrupulous middlemen between the company and the people. ¹⁰⁰ A Drop box can be placed anywhere. The most important thing is the company needs to take action. There should be a committee that represents the people and contacts the Project company. ¹⁰¹ There should be a Legal Services Committee between those affected and the Project company. ¹⁰² Instead of keeping drop boxes, it is more convenient to open an office in which there must be a person-in-charge. If this person is from the Project office, there can be bias. There should also be a committee composed of the person (representative of the Project company), and those of government departments, CSOs, etc. ¹⁰³

⁹⁴ U Tun Tun Oo, Head of Township Department of Agricultural Land Management and Statistics

⁹⁵ U Tun Aung Zan, Assistant Director, Township Development Committee Office

⁹⁶ U Tun Tun Oo, Head of Township Department of Agricultural Land Management and Statistics

⁹⁷ Dr. Than Hlaing, Township Livestock Breeding and Veterinary Department

⁹⁸ U Tun Tun Oo, Head of Township Department of Agricultural Land Management and Statistics

⁹⁹ Daw Mar San Win, Head of Township Department of Agriculture

¹⁰⁰ Daw Mar San Win, Head of Township Department of Agriculture

¹⁰¹ U Kyaw Myo Naing, Head of Department of Forestry

¹⁰² U Tun Aung Zan, Assistant Director, Township Development Committee Office

¹⁰³ U Hlwan Moe Htet, Assistant Director, Township Environmental Conservation Department

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

6.4.2 Community Expert Group Workshop

MSR Consortium held a workshop, meeting with Community Experts from Kyauk Phyu Township, to seek feedback on the draft Scoping Report and ToR. The workshop took place over four days—from November 22, 2022 to November 25, 2022, from 9.30 am to 5.00 pm each day. Members of the CEG comprise town elders, and representatives of CSOs, INGOs and political parties. One government department—ECD—attended the workshop.

The following is a list of feedback contributed by the community experts:

Made Island	
1.	The Made Island Development Association should be all inclusive. There should be negotiations between the representatives of the association and the Project Proponent.
Access Road and Bridge	
2.	The two-way Access Road should be built with the inclusion of motorcycle lanes on both sides and with the consideration of access roads to villages on either side. Local people should be allowed to use the road.
3.	In building the Access Road, other areas such as earth piling, tents, etc. are to be considered, in addition to the main road area, as the local people will lose parts of their farmlands.
All sub-projects	
4.	The Land Ownership Law should be amended as it is not consistent with the laws enacted by the Ministry of Natural Resources and Environmental Conservation, section 99 (a) of the 2008 Constitution should be revised.
5.	There are persons from Kyauk Phyu and Yangon who have purchased lands near the proposed Project sites. These transactions are against the law. The consequences will be suffered by the local people.
6.	In the previous projects, those in the project management gave promises and they did not translate their promises into action.
7.	Losses suffered by the fishermen and fishery workers should be scrutinized and proper assistance and provisions must be made.
8.	It should be mentioned clearly who will take responsibility for making land compensations—the Project Proponent or the government.
9.	Bengali families who have been accommodated at a specific place in Kyauk Phyu should be mentioned from a viewpoint in the report.
10.	The issue of the appearance of squatter wards in Kyauk Phyu Township should be solved as the issue can be related to the proposed Project.
11.	Limitations in the Farmland Law and Vacant, Fallow and Virgin Land Management Law will cause losses to the farmers. Therefore, proper compensations should be made to all those concerned, whether they hold Form 7 or not.
12.	A monitoring committee should be formed with intellectuals, interested persons and those who understand the project well, and issues are to be solved after formulating a monitoring plan.
13.	The word “local residents” should be clearly defined and explained to the people as there will be involvement of people migrating from other parts of Rakhine State and the country.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

6.4.2.1 List of Community Expert Group Members

Members of the Community Expert Group (CEG) are influential not only in Kyauk Phyu Township, but also in rural village. The main purpose of forming the CEG is to seek comments from them. The following table shows a list of CEG members from Kyauk Phyu township who participated in the review workshop of the second draft of this scoping report. Some members joined the meeting in person while some joined on-line.

Table 6-32: List of community expert group members

Sr No	Name	Position / Occupation	Organization	Attendance	
				In person	Online
1.	U Ba Shein	Former PM	Arakan National Party	■	
2.	U Kyaw Kyaw Soe	Town Elder	—	■	
3.	U Khin Maung Cho	Town Elder	—	■	
4.	U Tun Kyi	Chairman	Made Island Regional Development Association	■	
5.	U Soe Shwe	Programme Manager	Centre for Environmental and Resources Development in Arakan (CERDA)	■	
6.	U Win Thant Oo	Director	Youth Strength Association	■	
7.	Daw Shwe Win	Chairman	Community Forest Users Association	■	
8.	U Soe Naing Tun		RCSPC	■	
9.	U Saw Win	Programme Manager	Centre for Environmental and Resources Development in Arakan (CERDA)	■	
10.	U Hlwan Moe Htet	Assistant Director	District Environmental Conservation Department		■
11.	Daw Htet Thitsa Aung	Chief Officer	District Environmental Conservation Department		■
12.	U Phoe San	Secretary	Arakan National Party		■
13.	U Aye San	Town Elder	—		■
14.	U Aung Bala	Chairman	Duwun Kyal Funeral Services		■
15.	U Tun Lwin	Private Teacher	—		■
16.	U Tun Kyi	Executive Director	Center for Peace and Development		■
17.	U Khin Tun	Town Elder	—		■
18.	U Kyaw Than	Former Hluttaw Representative	Arakan National Party		■
19.	U Khine Oo	Director	Rakkha Arr Man Association		■
20.	U Aung Htoo Lin	Secretary	Kyauk Phyu Blood Donors Association		■

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

6.5 Planned activities in investigation stage

In the following sections, plans have been drawn up after reviewing the engagement activities conducted during the Scoping Field Trip. The plans are made for two phases—the investigation phase and the reporting phase. The following are planned activities in the investigation phase.

6.5.1 Stakeholder engagement methodologies

The following methodologies will be applied for stakeholder engagement in the investigation stage:

1. Workshops with representatives of key stakeholder groups
2. Public Consultation Meetings (PCMs)
3. Key informant interviews (KIIs) with representatives of stakeholders
4. Focus group discussions (FGDs) with members of the stakeholder groups
5. Socio-Economic Baseline and Household Survey (SEBHS)
6. Workshop with Community Expert Group (CEG) members

6.5.2 Information Disclosure

The following methods will be employed in public disclosure and holding the Public Consultation Meetings:

1. Posting Information on the Project website
2. Inviting participants to the workshops and PCMs
3. Disclosing Project information and ESIA process
4. Selecting participants

6.5.2.1 Posting information on the Project website

The Project Proponent has built a website specifically for the KPSEZ-DSP Project:

Project website:	www.citicmyanmar.com
Information to be posted:	<ul style="list-style-type: none"> • Notice of Commencement of ESIA Investigation Stage • ESIA Scoping Report and ToR • ESIA Report (Draft) • The Project Proponent needs to provide Project information by posting prominent legible signboards and advertising boards at the Project site which are visible to the public.

6.5.2.2 Inviting participants to the workshops and PCMs

In the investigation stage, two workshops will be held. Regarding the two PCMs to be held, one will be held during the investigation stage field trip, and the other during the Reporting Stage, going on a specific field trip.

The participants will be invited to the workshops and PCMs in the following ways:

Table 6-35: Planned methods of invitation to workshops and PCMs

	Method of Invitation	Scheduled time	Workshops	PCMs
1.	Right-to-the-doorstep delivery	7 days ahead	■	■
2.	Advertisement in newspapers	14 days ahead	—	■
3.	Posters	14 days ahead	---	■

■ = to be carried out

Public Consultation Meetings: Participants will be invited to the PCMs by sending invitation letter, inserting advertisements in the newspapers and posters will also be posted at public places—markets, food shops and coffee shops and government offices (like Department of Health, Department of General Administration, etc.).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Workshops: As the number of attendees to the workshops is limited, invitation will be sent right-to-the-doorstep, seven days ahead of the events. If the invitation letter is sent so early (about two weeks ahead), they may lose it or forget to attend them.

6.5.2.3 *Disclosing Project Information and ESIA Process*

The Project information and ESIA process will be disclosed through the following methods:

Table 6-36: Planned methods of information disclosure

Information to be disclosed	Method		PCM	Workshop
Project information (Brief)	1	Project website	■	x
	2	Invitation letter	■	■
	3	Advertisements in the newspapers	■	x
	4	Leaflets	■	x
	5	Posters	■	x
Project information (Detailed)	6	At the PCMs	■	x
	7	At the workshops	x	■
ESIA process	1	At the PCMs	■	x
	2	At the workshops	x	■

■ = to be carried out

The information about the Kyauk Phyu Special Economic Zone Deep Sea Port Project will be disclosed by a representative of the CITIC Consortium at the PCMs—one to be held in Kyauk Phyu Township and the other on Made Island. An MSR Consortium member will explain the Project information at the workshops.

6.5.2.4 *Selecting participants*

The participants to the workshops and PCMs will be selected according to the following purposes:

Public Consultation Meetings:	The PCMs are open to the public and representatives of the multi-stakeholder groups will be invited as per methods mentioned above.
Workshops:	Stakeholders who know the regional context well and are knowledgeable enough to contribute their comments only will be selected from among the stakeholder groups and invited to the workshops.

6.5.3 *Notifications prior to the PCMs*

The following table shows the information to be notified and the methods of notifications to be used for the two PCMs:

Table 6-37: Notifications to the public and notification methods

Kind of notification	Method				
	Newspaper	Project website	Poster	Leaflet	Invitation letter
Notification of Project information ¹	■	■	■	■	■

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Kind of notification	Method				
	Newspaper	Project website	Poster	Leaflet	Invitation letter
Initial notice of commencement of EIA investigation stage ²	---	■	---	---	■
Notice about public consultation meeting ³	---	■	■	■	■

Notes:

- Notification of Project information:** Project information will be briefly carried in the newspapers, poster, leaflet and invitation letter. CITIC plans to post the proper Project information on the Project website. So far, it has been briefly posted.
- Initial notice of commencement of EIA investigation and information:** The information of the commencement of the EIA Investigation Stage will be included in the invitation letter (PCMs) and also posted on the Project Proponent’s website.
- Public consultation meeting:** The information about holding the two PCMs will be shared through all means mentioned above.
- = will be carried out

6.5.4 Public participation (All methods)

Stakeholder activities for the Investigation Stage have been scheduled as follows:

Table 6-38: Schedule of stakeholder engagement activities for Investigation Stage

Method	Initial schedule	Changed schedule	Trip 1	Trip 2	Trip 3	Trip 4
			Completed	Schedule	Schedule	Schedule
Public Consultation Meetings	6	6	2	Combined with Trip 1	2	2
Workshops	4	4	2		2	0
Key informant interviews (KIs)	189	184	127		62	0
Focus group discussions (FGDs)	34	23	9		25	0
	233	140	140		91	2

Notes:

Trip 1:	Scoping Field Trip	Aug 15, 2022 to Sep 2, 2022
Trip 2:	Investigation Field Trip (Rainy Season)	Combined to Trip 1
Trip 3:	Investigation Field Trip (Dry Season)	Mar 15, 2023 to Mar 31, 2023
Trip 4:	For hold two public consultation meetings	(Dates not yet fixed)

In addition to the above-mentioned methods, workshops will be held with the Community Expert Group members.

6.5.4.1 Public Consultation Meetings

Two PCMs will be held—one in Kyauk Phyu Township and the other on Made Island. At the PCMs, findings from the Scoping Phase will be clarified and further comments from the participants will be sought.

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

PCMs scheduled for the Investigation Phase

Sr. No.	Method of participation	Venue	Invitees
1.	Public Consultation Meeting 1	Kyauk Pyhu Township	Multi-stakeholders and the public
2.	Public Consultation Meeting 2	Made Island	

Detailed schedule for PCM 1 and PCM 2

The two PCMs will be held according to the following schedule:

Planned invitees:	Representatives of multi-stakeholder groups, including interested persons and parties will be invited.
The venues:	The venue shall be a neutral place where the participants can openly reveal their views and concerns. Hotel Kyauk Phyu is the ideal place which has a space that can accommodate all the participants. On Made Island, the Made Monastery will be chosen. It is the only place on the island with sufficient space to accommodate the participants.
The dates:	Dates for holding the PCMs will be decided after negotiation with the District General Administration Department.
The duration:	The participants will be given sufficient time for presenting their comments.
Invitation:	Multi-stakeholders including government officials, CSOs, INGOs and NGOs, political parties and local residents will be invited.

6.5.4.2 Workshops

Two workshops will be held in Kyauk Phyu Township during the ESIA investigation field trip. At the first workshop, potential positive impacts and negative impacts, mitigation measures, and concerns of the people will be presented to the attendees. At the second workshop, extensive group discussions will be held regarding project impacts, mitigations and comments.

Workshops scheduled for the Investigation Phase

Sr. No.	Method of participation	Venue	Invitees
1.	Workshop 1	Kyauk Pyhu Township	The planned invitees are mentioned below:
2.	Workshop 2	Kyauk Pyhu Township	

Planned invitees: Representatives of the following groups will be invited to the workshops:

- Government departments
- Town elders
- Civil Society Organizations
- Non-governmental organizations
- International non-governmental organizations

The two workshops will be held by inviting participants who have comprehensive knowledge of the local context and provide feedback on potential positive and negative impacts and mitigation measures. In holding the workshops, the venue, dates, duration, and invitation of participants will be considered as follows:

The venue:	The venue shall be a neutral place where the participants can openly reveal their views and concerns. Both workshops will be held at the same venue.
The dates:	Dates for holding the workshops will be decided after negotiation with the District General Administration Department that can provide advice on the days (of the week) on which people will be available for attendance.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

The duration:	The participants will be given sufficient time for group discussions—in morning and afternoon sessions.
Invitation:	The participants will be invited by delivering the invitation letter to the address. The invitation letter will be released seven days ahead of the workshops.
Group discussions:	On the first day, potential positive impacts, negative impacts, mitigation measures and their concerned will be presented for consideration. On the second day, the same five groups will discuss the points laid out, and provide further comments and suggestions.

6.5.4.3 *Key Informant Interviews and Focus Group Discussions*

After reviewing the findings from the interviews, workshops and PCMs in the Scoping Stage, it is found that the stakeholder groups directly affected are farmers / cultivation and fishermen (boat owners) and fishermen (casual workers) and dealers of rice and other crops and marine produce are indirectly affected. Therefore, the schedule in the Investigation Stage is mainly focused on these groups.

In addition to these groups, the groups in Kyauk Phyu Township will be interviewed, including town elders, ward administrators, political parties and government departments / enterprises. They are included in the schedule for the Investigation Stage.

In the ESIA Investigation Phase, it has been scheduled to form six data-collection teams: 3 (three) for KIIs (including health and safety and cultural heritage data) and another 3 (three) for FGDs.

Table 6-39: KII and FGD teams scheduled to be formed

Team No.	Team members		Responsible for:
Team 1	Leader	Note-taker	KIIs
Team 2	Leader	Note-taker	
Team 3	Leader	Note-taker	
Team 4	Leader	Note-taker	FGDs
Team 5	Leader	Note-taker	
Team 6	Leader	Note-taker	

The following table shows the completion in the Scoping Stage and schedule for the Investigation Stage of KIIs and FGDs:

Table 6-40: Update and schedule of interviews (KIIs and FGDs)

Sr. No.	Stakeholder group	No of interviews				Overall schedule	
		Completed (Scoping)		Scheduled (Investigation)		KII	FGD
		KII	FGD	KII	FGD		
Rural villages (Inner and Outer Zones)							
1.	Village elders (Village profiles)	15	0	0	0	15	0
2.	Village administrators	14	0	0	0	14	0
3.	Farmers / cultivators	6	3	6	5	12	8
4.	Fishermen (Casual workers)	5	2	8	9	13	11
5.	Fishermen (Boat owners)	5	0	3	0	8	0
6.	Livestock breeders	0	0	0	0	0	0
7.	Casual workers (other livelihoods)	0	0	0	3	0	3
8.	Minority ethnic groups	3	0	2	0	5	0
9.	Vulnerable groups	5	0	5	0	10	0

CHAPTER 6: Public Consultation and Disclosure

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Stakeholder group	No of interviews				Overall schedule	
		Completed (Scoping)		Scheduled (Investigation)		KII	FGD
		KII	FGD	KII	FGD		
10.	Youths	2	1	0	4	2	5
11.	Women	3	1	0	4	3	5
Kyauk Phyu Township		0	0	0		0	0
12.	Town elders	9	0	3	0	12	0
13.	Political parties	2	0	3	0	5	0
14.	Civil Society Organizations	8	0	4	0	16	0
15.	Non-governmental organizations	2	0		0		
16.	International NGOs	2	0		0		
17.	Religious leaders	3	0	0	0	3	0
18.	Fishermen' association	3	0	0	0	3	0
19.	Money lender	1	0	0	0	1	0
20.	Youth associations	2	0	0	0	2	0
21.	Ward administrators	8	0	0	0	8	0
22.	Government departments	8	0	8	0	16	0
Rural villages and Kyauk Phyu		0	0	0	0	0	0
23.	Rice/other crops dealers	0	0	6	0	6	0
24.	Fish traders	0	0	9	0	9	0
25.	Health	14	2	3	0	17	2
26.	Culture	7	0	2	0	9	0
Total:		127	9	62	25	189	34

Livestock breeders: In the villages, as livestock breeding is carried out only on a manageable scale, questions for livestock breeders will be combined with those of farmers (Cultivators).

Key Informant Interviews (KIIs)

There are 189 KIIs to be conducted overall. Of them, 127 interviews were completed in the Scoping Phase and 62 are left.

In the investigation stage, KIIs will be focused on the following groups:

1. Farmers and fishermen of the 15 villages
2. Traders / dealers of agricultural and marine produce in Kyauk Phyu Township
3. Ward administrators (remaining to be interviewed)
4. Town elders (remaining to be interviewed)
5. Political parties (remaining to be interviewed)
6. Government departments / enterprises

The following table shows the places where KIIs for various stakeholders will be conducted:

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Table 6-41: KIIs scheduled for the Investigation Phase

Stakeholder group	Inner Zone Villages														Outer Zone Villages	Downtown Kyauk Phyu	Total	
	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge								
	Ywar Ma	Prair	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Say Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar				Tha Pyu Taung
Farmers		1						1						1	3		6	
Fishermen			1		1			1	1				1	1		2	8	
Boat owners				1		1				1							3	
Vulnerable group	1	1						1						1	1		5	
Minority ethnic group			1				1										2	
Town elders																3	3	
Political parties																3	3	
Rice / other crops trader	1					1						1				3	6	
Fish trader		1						1					1			2	4	
CSO/INGO																4	4	
Government																8	8	
Health	1					1						1					3	
Culture												1	1				2	
Total:	3	3	2	1	1	3	1	3	2	1	0	3	3	2	2	7	25	62
	10					9				11					7	25	62	

Adm: Administrator
Focus Group Discussions

The overall schedule of FGDs is 34. Out of it, 9 was completed in the Scoping Stage, leaving 25 FGDs. Altogether 25 FGDs are scheduled for the Investigation Stage.

The following table shows the places where FGDs for various stakeholders will be conducted:

Table 6-42: FGDs schedule for the Investigation Phase

Stakeholder group	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge					Outer Zone villages	Total	
	Ywar Ma	Prair	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Say Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar			Tha Pyu Taung
Farmers/Livestock			1					1					1			2	5
Fishermen	1	1				1	1				1	1				3	9
Other livelihoods				1					1						1		3
Youths	1					1				1						1	4
Women			1				1				1					1	4

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Stakeholder group	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge						Outer Zone villages	Total
	Ywar Ma	Prain	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Say Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar	Tha Pyu Taung		
Total:	2	1	2	1	0	2	2	1	1	1	2	1	1	0	1	7	25
	6					6				6						7	25

6.5.4.4 Socio-Economic Baseline Household Survey (SEBHS)

The Socio-Economic Baseline Household Survey will be conducted by a separate team, composed of permanent and part-time staff members of the Social Research Department of MSR. SEBHS will conduct the survey as follows:

Methods: Quantitative and qualitative

Quantitative:	Face-to-face interviews (CAPI)	
	Census:	1,962 HHs (15 villages in inner zone)
	Sampling:	1,000 HHs (Outer zone villages) (20 HHs x 50 sampled villages)

Schedule for Census Survey to be conducted by SEBHS team

The following table shows the number of census units (households) in the inner zone 15 villages:

Table 6-43: Census to be conducted by SEBHS team in inner zone

Sub-project	Sr. No.	Village	Census units (No. of households)
Made Island Port Terminal of the Project	1.	Ywar Ma	178
	2.	Prain	346
	3.	Kyauk Tan	200
	4.	Kyauk Maw Gyi	52
	5.	Pan Htain Se	36
	Total:		812
Yanbye Island Port Terminal of the Project	6.	Sit Taw	119
	7.	Kyan Chein	105
	8.	Say Maw	243
	9.	Thit Poke Taung	146
	Total:		613
15-km Access Road & Bridge of the Project	10.	Htaunt Chaung	59
	11.	Ku Lar Bar Taung	118
	12.	U Gin	171
	13.	Kyat Tein	130
	14.	Tha Hpan Khar	17
	15.	Tha Pyu Taung	42
	Total:		537
	All total:		1,962

Schedule for Sampling to be conducted by SEBHS team in outer zone

In the outer zone, 50 villages/wards will be sampled from among the total number of more than 200 villages/wards. In each village/ward, there will be 20 households sampled for interview. So, the total number of samples in the outer zone will amount to 1,000.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

6.5.4.5 *Government engagement*

Altogether 31 government departments, enterprises and administrative bodies, including village administrators and ward administrators were engaged in the Scoping Stage using three methods: KIIs, workshops and PCMs. The number of officers engaged amounted to 95.

In the Scoping Phase, KIIs were conducted with the following departments and administrative body members as follows:

1. Department of Agricultural Land Management & Statistics (Township)
2. Department of Agriculture (Township)
3. Department of Environmental Conservation (Township)
4. Department of Fire Services (Township)
5. Department of Forestry (Township)
6. Department of Livestock Breeding and Veterinary
7. Department of Religious Affairs (Township)
8. Township Development Committee
9. Electricity Supply Enterprise
10. Village administrators (15 interviewees)
11. Ward administrators (17 interviewees)

Depending on the extent of involvement in the Project and with the directly affected persons, the following departments/enterprises have been considered for KIIs in the Investigation Phase:

1. Department of Agricultural and Land Statistics Department (District)
2. Department of Fishery (Township)
3. Department of Inland Water Transport
4. Department of Marine Administration (District)
5. Department of Border Areas and Ethnic Peoples Development (District)
6. Myanmar Port Authority (District)
7. Department of Rural Development (Township)

All related departments and enterprises (township and district levels) will be invited to the two workshops and two PCMs.

6.5.4.6 *Community Expert Group Workshop*

In the investigation and reporting stages, workshops with CEG members will be held at least one to two times. At the workshop, the draft EIA Report will be presented and feedback will be sought from the participants. Information about the CEG is provided in Chapter 6: Public Consultation and Disclosure of this report.

6.6 Planned activities in reporting stage

After completing the investigation phase field trip, there will be two main activities as follows:

1. Compilation of the ESIA Report, and
2. Holding the fifth and sixth Public Consultation Meetings

6.6.1 *Compilation of ESIA Report*

MSR Consortium will start compilation of the ESIA Report on completion of the investigation phase data collection, and proceed according to the following process:

1. Compilation of the ESIA Report
2. Holding the last two PCMs, going on specific field trip, for disclosure of findings in the draft ESIA Report
3. Holding a Community Expert Group
4. Revising the report with feedback from the PCMs, and internal and international Review

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- Teams of MSR Consortium and workshop with CEG
5. Submitting the draft ESIA Report to the Project Proponent
 6. Revising the draft ESIA Report with feedback from the Project Proponent
 7. Submitting the ESIA Report to ECD

Parts of the report will be compiled by the executing teams of respective disciplines: Legal, physical environment, biological environment and social environment and public consultation and disclosure. The parts will be combined into three reports—Made Island, Yanbye Island and Access Road and Bridge.

6.6.2 Public Consultation Meetings

A specific field trip will be made to hold one PCM each in Kyauk Phyu Township and Made Island. Findings in the ESIA Report (Draft) will be clarified and comments from the attendees will be sought at the PCMs, which will be held in the similar way—participants, dates, venues, duration, etc.—as in the PCMs in the Investigation Stage.

The PCMs involve the following activities, which will be carried out in the Investigative Stage:

1. Information disclosure
 - (a) Posting Information on the Project website
 - (b) Inviting participants to the workshops and PCMs
 - (c) Disclosing Project information and ESIA process
 - (d) Selecting participants

These activities will be carried out as mentioned in Section 12.2.2.

2. Public consultation meetings
 - (a) PCM in Kyauk Phyu Township
 - (b) PCM on Made Island

The two PCMs will be held according to the following detailed schedule:

Planned invitees:	Representatives of multi-stakeholder groups, including interested persons and parties will be invited.
The venues:	The venue shall be a neutral place where the participants can openly reveal their views and concerns. Hotel Kyauk Phyu is the ideal place which has a space that can accommodate all the participants. On Made Island, the Made Monastery will be chosen. It is the only place on the island with sufficient space to accommodate the participants.
The dates:	Dates for holding the PCMs will be decided after negotiation with the District General Administration Department.
The duration:	The participants will be given sufficient time for presenting their comments.
Invitation:	Multi-stakeholders including government officials, CSOs, INGOs and NGOs, political parties and local residents will be invited 14 days ahead of the PCMs.

6.7 Responsible entities

In the investigation and reporting phases, the following activities will be carried out by MSR Consortium. Notice of Commencement of ESIA Investigation Stage and PCMs will be held jointly with the Project Proponent.

The following table shows the share of responsibilities for respective tasks:

1.	ESIA Investigation Stage		
	1.	Investigation Field Trip (One time)	MSR —
	2.	Site visits	MSR —

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

	3.	Key Informant Interviews	MSR	—
	4.	Focus Group Discussions	MSR	—
	5.	Notice of Commencement of ESIA Investigation Stage	MSR	CITIC
	6.	Workshops (Two)	MSR	■
	7.	Public Consultation Meetings (Made and Yanbye)	MSR	—
2.	ESIA Report Compilation Stage			
	1.	PCM-specific field trip (Made and Yanbye)	MSR	CITIC
	2.	Public Consultation Meetings at other places	MSR	CITIC

■ = Participation of CITIC in the workshops in optional.

MSR Consortium members involved in holding the PCMs

The following key persons will be involved in holding the PCMs:

Sr. No.	Name	DSP ESIA duty
Leading persons		
1.	U Kyaw Hlaing	Project Director
2.	U Ye Nyunt	Report Writer (Public Consultation and Disclosure)
3.	U Ko Ko Soe Lwin Thaw	Project Manager
4.	U Kyan Dyne Aung	Leading Report Writer 1 (Made Island)
5.	Dr. Htay Aung Pyae	Leading Report Writer 2 (Yanbye Island)
6.	Dr. Aye Aye Saw	Leading Report Writer 3 (Access Road with Bridge)
7.	U Aung Lin	Social Environment, PCM Organizer
Persons responsible for clarifications		
8.	Physical Environment team members	
9.	Biological Environment team members	
10.	Social Environment team members	
11.	Other team members (Legal and Public Consultation and Disclosure)	

Specific team members will also be assigned to the following tasks:

1. Preparation at the PCM venue
2. Reception and registration of participants
3. Note-taking of meeting minutes (Audio and manual script)
4. Photo recording

6.8 Control of Documents

MSR Consortium has formed Project Executing Teams for various disciplines: Report Review Teams (Local and International), Physical Environment, Biological Environment and Socio-economic Environment, legal instruments, management and document control and report preparation.

The Document Control Team has the following team members:

Sr. No.	Name	Designation (MSR)	Document Control and Report Preparation Team (DSP ESIA Project)
1.	U Ye Nyunt	Research Director	Leader
2.	Daw Nyein Nyein Myo	Deputy Director	Member
3.	Daw Win Win Mar	Project Manager	Member

The functions of the team are:

1. Keeping all digital documents in systematically created folders, according to ESIA Project phase and topic
2. Organizing meetings, as instructed and necessary, among ESIA Project Executive Team members, advisors and consultants and the representatives of the DSP Project Proponent.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

3. Inviting participants to the meetings and keeping meeting minutes
4. Preparing and formatting reports (plans, Scoping Report and ESIA Reports), contributed by respective report writers, and
5. Keeping databases as necessary.

6.9 Recommendations for the PCMs

There are three recommendations as to holding the Public Consultation Meetings for the investigation and reporting stages as follows:

1. **Venue:** So far, two PCMs have been held in the Scoping Phase, and four more remain—two in the investigation phase and another two in the reporting stage. Not all the local residents could attend the PCM in Kyauk Phyu. To allow people of the villages to participate, two more PCMs should be held—one for the residents of villages on Yanbye Island and another one for villages along the Access Road with Bridge. The total would become eight.

Completed, remaining and further suggested PCMs

Status	PCM	Venue	Stage
Completed	PCM 1	Kyauk Phyu Township	Scoping
	PCM 2	Made Island	Scoping
Remaining	PCM 3	Kyauk Phyu Township	Investigation
	PCM 4	Made Island	Investigation
	PCM 5	Kyauk Phyu Township	Reporting
	PCM 6	Made Island	Reporting
Suggested:	PCM 7	Largest one of the four villages on Yanbye Island	To be decided
	PCM 8	Largest one of the six villages on Access Road	To be decided

The total number of PCMs will become eight if the suggested PCMs are added.

2. **Major interest and concerns:** The Project information and ESIA process are shared at the PCMs, the clarification part of the PCM takes hours though sufficient time is given for participants to contribute their comments and concerns. The participants are not interested in long ESIA process and potential impacts on the environment. Most of them are interested only in the following, in order of importance:
 - (1) Whether their livelihoods will be lost, and what will be the remedial measures
 - (2) Whether resources they are relying on—water, fuelwood, etc.—will be lost
 - (3) Requirements in the infrastructure—roads, health and education.

The Project information should be provided properly, but ESIA process should be clarified in brief not to cause the participants to distrust, and allow more time for the participants for thinking and contributing their comments.

3. **Permission for holding PCMs:** The KPSEZ DSP Project is a significant project, but permission for holding the PCMs is not complete at the district level (District General Administration Department). It has to be sought from higher authorities. Therefore, the process should be considered.

Chapter 7: Conclusions and Recommendations

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Chapter 7. Conclusions and Recommendations

7.1 Introduction

The scoping study was conducted for the investigation of the Environmental and Social Impact Assessment for the KPSEZ Deep Sea Port Project which comprises Made Island Deep Sea Port, Yanbye Island Deep Sea Port and Access Road & Bridge. Yanbye Island DSP, is one of the components of the whole Project, and the majority of the findings of the study for all three components including conclusions and recommendations, are similar in nature. Findings and conclusions and suggestions for Made Island Port Terminal are summarized below.

- 1) Main challenges and issues to be studied in detail
- 2) Major alternatives to be taken into account during EIA study
- 3) Magnitude and extent of the study to impacts
- 4) Stakeholders to be consulted, and
- 5) Important data gaps and constraints.

Recommendations related to Community Benefits, Livelihood Impacts, Human Rights Impacts, Climate Change Impacts, Project Alternatives and Environmental and Social Management and Monitoring Plans are offered. The conclusions, including the key findings and recommendations, serve as the basis for the preparation of the ToR for the EIA study and investigation.

7.2 Main challenges and issues to be studied in detail during ESIA stage

It is necessary to know the baseline condition of the Project area and surroundings and collection of baseline information about physical, biological and social environments will be carried out and the results of which, thoroughly studied. The physical environmental parameters, namely, ambient air quality, ambient sound quality, surface water and ground water quality, soil and sediment quality of the Project area and surroundings will be assessed in wet and dry seasons. In addition, scientific modelling for dispersal of air pollutants, underwater acoustics and sediment transport will be carried out. (Note: details of the baseline workplan are described in ToR section).

The abundance and spatial distribution of marine and terrestrial fauna and flora will be studied in pre-monsoon, monsoon and post-monsoon periods. The terrestrial biodiversity will cover large and small tree, shrub, herb, climber, bamboo and fern, amphibian and reptile, bird, mammal, butterfly and dragonfly, while marine biodiversity will encompass marine mammals, marine turtles and coastal birds or sea birds, phytoplankton and zooplankton, benthos, mollusks and gastropods, seagrass, coral reef, mangrove, fish, sharks and rays. In addition, Species Distribution Model (SDM) will be used for endangered and commercially important species. (Note: details of the baseline workplan are described in ToR section).

The socio-economic components such as income and livelihoods, living conditions and access to public services and natural resources, land use, employment and education will be studied. The census household survey will also be conducted in the inner zone of 15 villages and sample households survey will be conducted in the outer zone covering the whole Kyauk Phyu Township. Basic information about public health and public health infrastructure will be collected and studied. The studies will include key informant interviews and focus group discussions. The cultural component covering tangible and intangible culture will be studied by means of literature review, interviews with communities and field survey.

The preliminary identification of potential physical, biological, social and health impacts was made for different Project phases: pre-construction, construction operation and decommissioning / transfer phases and relevant mitigation measures were developed accordingly. The key issues and impacts potentially occurred in decommissioning / transfer phase, abandonment of the Project (if applicable), and exceptional events and relevant mitigation measures were mentioned. However, these impacts for different Project phases will be studied in more detail and comprehensively for the development of more relevant mitigation measures.

The residual impacts and their significance will be studied in more detail. The cumulative impact due to the existing and future private and public projects and developments will be assessed. Greenhouse gas emission from the Project implementation, which is considered as transboundary impact, will contribute

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

to global climate change. The climate change issue and transboundary impact will be assessed and detailed in the EIA stage.

Based on the results and findings of focus group discussions, key informant interviews, public consultation meetings and workshop with local community experts, it is apparent that community development programs (CSR programs) need to be developed and these programs must be in line with the requirements of the community.

It is also noted that the community is worried about the loss of their fishery livelihood and hence the additional Fishery Livelihood Impact Assessment will be conducted in order to identify possible impacts and relevant mitigation measures for that issue.

To be a responsible business and Project Proponent, it is necessary to address the range of Human Rights issues linked to the Project activities. Therefore, meaningful consultation with potentially affected stakeholders and other relevant parties will be undertaken to conduct the Human Rights Impact Assessment.

7.3 Major alternatives to be taken into account during EIA study

The alternatives such as Location Alternative, Orientation Alternative, Design Alternative and No Project Alternative were considered. Social, environmental and economic aspects were taken into account when considering alternatives and determining the preferred alternative.

The proposed location could be considered ideal for the Project development. However, multidisciplinary feasibility studies and assessments are strongly recommended prior to the Project commencement.

Any directional and bearing adjustments made to the current orientation could have tangible impacts on the new navigational area and ship movements.

The proposed Yanbye Island Port Terminal of the Project satisfies all the criteria for a 5th Generation multi-purpose terminal, which the Project Proponent aims to develop through international guidance and best practice. Thus, given the scope of multipurpose terminal and design description, there is no comparable port and terminal generation alternative as the Project Proponent favours the latest generation ports and terminals configuration.

The “No Project Option” was also considered to avoid negative impacts to environmental and social aspects. However, by leaving the proposed area without any development will result in the local community and the government (State and Union) losing the opportunities to benefit from the development Project.

While ports are vital for economic development, construction, operation, the associated maritime traffic, handling of goods, and road transport take a heavy toll on the environment through air and water pollution and on the livelihoods and other social aspects of local people. Adverse effects of port development for EIA have been compiled by several organizations including the World Bank, the Asian Development Bank and the International Association of Ports and Harbours, and these will be referenced where applicable

The ESIA process shall determine these significant impacts of the Project. To ensure that Project benefits out-weigh the negative impacts and to avoid the “No Project Option”, it is crucial to commit and implement all proposed mitigation measures which shall be addressed in ESIA Report.

7.4 Magnitude and extent of the study to impacts

This scoping study covers the whole Yanbye Island Port Terminal of the Project comprising four (4) berths. This scoping study defines the area of influence of the Project and study area for physical, biological and social environments which could be potentially impacted by the Project. The applicable regulations and standards, policies and plans, international agreements and treaties, international and national standards and guidelines were listed and overviewed. The provisional identification of environmental impacts was made and relevant mitigation measures were also proposed. The potentially affected communities and stakeholders were identified and as part of the scoping the public consultation and participation activities were conducted.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

For the EIA investigations, this scoping study provides the required baseline data and information, identifies further studies to be carried out and how such data collection, studies and investigations will be undertaken. The details of the workplans of EIA are described in the ToR section. Therefore, this scoping study is an efficient and comprehensive process and the areas and aspects scoped under this study are well relevant and adequate for the EIA investigations.

7.5 Stakeholders to be consulted

The potentially affected communities and other stakeholders with an interest in the Project were identified and as part of the scoping process, public consultation and engagement activities, namely, key informant interviews, focus group discussions, workshops, meetings with community expert groups and public consultation meetings were conducted.

The stakeholders are categorized into two main groups for consultation, namely, stakeholder groups in rural areas, and stakeholder groups in Kyauk Phyu Township. These stakeholders were further consulted in the EIA investigation stage. Based on the findings from the interviews, workshops and PCMs in the scoping stage, it was found that the stakeholder groups directly affected were farmers / cultivators and fishermen (boat owners) and fishers (casual workers). Indirectly affected stakeholders include dealers of rice and other crops and marine produce. These groups need to be consulted in the EIA Stage. In addition to these groups, the groups in Kyauk Phyu Township still need to be interviewed, including town elders, ward administrators, political parties and government departments / enterprises.

No.	Stakeholder groups in rural areas
1.	Fishermen/fishery workers
2.	Boat owners
3.	Farmers/cultivators
4.	Livestock breeders
5.	Local residents in other livelihoods
6.	Village administrators and village elders
7.	Vulnerable groups
8.	Minority ethnic groups
9.	Religious leaders
10.	Youths (Under 30)
11.	Women

No.	Stakeholder groups in Kyauk Phyu Township
1.	Political parties
2.	Town elders
3.	Civil Society Organizations (CSOs)
4.	Non-Governmental Organizations (NGOs)
5.	International Non-Governmental Organizations (INGOs)
6.	Ward Administrators
7.	Religious leaders
8.	Culture
9.	Health
10.	Government departments

Other key stakeholders

Other key stakeholders including the Kyauk Phyu SEZ Management Committee, Rakhine State Government, and the Project Proponent shall be consulted during the EIA study to determine their needs and expectations which could impact on the Project implementation.

Household census data collection

Furthermore, household census and a public opinion poll will be conducted in the direct impact area of 15 villages with 1,962 households in total and a sample survey of 1,000 households from 50 sample villages/wards randomly selected in Kyauk Phyu Township.

7.6 Important data gaps and constraints

This report is prepared based on the information provided by the Project Proponent, i.e., (i) Concept Proposal, (ii) Project Proposal Report, (iii) APPENDIX 4 Technical Specifications of Concession Agreement and (iv) additional information in Request for Information (RFI). Further detailed information

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

related to the Project is required to enable MSR to prepare a comprehensive and complete ESIA report as per the requirements of the ECD procedure.

There are some constraints in conducting baseline data collections in certain areas of Kyauk Phyu Township due to accessibility restriction.

7.7 Additional Recommendations

The following recommendations are put forward for the development of the Environmental Impact Assessment, including benefits to the community and the sustainability of the Project. These recommendations are divided into three (3) groups, namely, Community Benefits, No Project Option and Environmental and Social Management and Monitoring Plans.

7.7.1 Community Benefits

Although the Project has potentially negative impacts on the biophysical and social environment, it is also beneficial to the local community in many ways. The benefits for the community could be achieved or enhanced by the Project Proponent implementing the following recommendations.

1. People's experiences from previous projects in the region

One of the major challenges the current DSP Project is encountering is that local people have negative experiences relating to the previous projects in the region. Although the local people welcome the proposed Project, they are concerned that the Project will be implemented with no transparency, accountability or community benefit as seen in previous projects. In addition, consideration for benefits to the community should be addressed comprehensively. It is crucial to build trust and positive public sentiment toward the proposed Project.

2. Land issues

Land resources in the Project area are being used by the local communities according to customary tenure, for a number of purposes to meet local livelihood needs, i.e., agricultural production and grazing. Customary land tenure arrangements predate the creation of legal frameworks; however, customary or ancestral land is not yet formally recognized by the existing land laws. One of the main concerns of the vulnerable local community is not to lose their rights to obtain compensation. Therefore, it is vital for the authority concerned to consider the recognition and protection of customary tenure to alleviate the concerns of the local community on land issues.

Acquisition of land for the Project is likely to occur and it is very important that land compensation, including resettlement and rehabilitation programs should be implemented transparently and properly without compromising the livelihoods and living standards of those who lose their lands. The land acquisition and compensation is KPSEZ MC's obligation and it is recommended that the responsible authority carry out the required processes, studies and consultations with the affected community.

The manipulation of land prices by speculators buying up farmlands using proxy buyers is considered a major issue related to land acquisition in the Project area.

This issue is totally different from the customary land issue and hence it should be handled by the authority tactfully.

3. Livelihood (fishery) impact

The fishery is the major livelihood of those communities on Yanbye Island and surrounding areas and accounts for the livelihoods of 75% of total households. While land loss can be either restituted or compensated to the landlords and farmers, loss of fishing grounds for local fisherman as the result of the development of terminals and navigational areas remain key concerns that need to be addressed. It is necessary to develop and implement mitigation for damages to the livelihoods of fishers in the Project area and its surrounds. The introduction of a livelihood impact assessment (fishery livelihood) as a special topic in the EIA stage will identify potential impacts and mitigation measures.

The community will encounter loss of fishing grounds and farmlands, and opportunities for accessing alternate income sources are recommended to be provided by the Project Proponent and relevant authority, including remedial programs, to support and sustain local livelihoods.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

4. Benefits for the locals

Throughout the stakeholder consultations, political parties, CSOs, town elders mentioned that the Project's benefits should be shared with the local communities. It is expected that a portion of Project revenue should be specifically allocated to native Made and Yanbye Islanders, Kyauk Phyu Township and Rakhine State as a whole, to be used for development purposes. This will receive support from the local community.

5. Bridge construction beneficial to Yanbye people

It is expected that the bridge to be constructed between Made Island and Yanbye Island will be beneficial to the local communities.

While the local community is excited to see the bridge and road across their village, they are concerned that access to the bridge may not be granted. Local community should be allowed to use the bridge and road. This will improve their lifestyle and ease of transportation from the village to the town. The usability and accessibility of the road and bridge for the local people should be considered during the design stage without affecting the traffic for the main business.

6. Job creation by the Industrial Park

The topic of employment opportunities is widely mentioned during the interviews with the local residents and stakeholders. They are concerned that there will be limited job opportunities for the local people in the DSP Project due to its nature of work. To create more employment opportunities for the local people, it is suggested that the Industrial Park Project be implemented along with the DSP. The local people have high expectation that Kyauk Phyu SEZ will create job opportunities for them in the Industrial Park and their expectation should be met.

Employment opportunities are frequently raised during the interviews with the local residents and stakeholders. They are concerned that there will be limited job opportunities for the local people in the DSP Project due to the nature of the work associated with constructing the Project. To create more employment opportunities for the local people, it is suggested that the Industrial Park Project be implemented along with the DSP. The local people have high expectation that Kyauk Phyu SEZ will create job opportunities for them in the Industrial Park and consideration of their employment expectations should be met where feasible.

7. Rakhine sensitive region

Rakhine is one of the poorest and least economically developed states in the country. There have been extreme episodes of violence in the past. Continued conflict and socioeconomic distress are worsening the humanitarian situation in Rakhine. Many people are in need of humanitarian assistance at the present time. Although this Project can boost economy enormously in the future, improper planning and unscrupulous activities could create or exacerbate existing conflicts. The risk that the Project could intensify the already sensitive local situation should not be overlooked as it may lead to further conflict.

8. Port security and national security

World events have shown that the maritime transportation system is not immune to safety and security threats. It is more so for the Project which is situated in a very strategic position, playing an important role in supporting economic development in Myanmar and enabling global trade. An emergency event could pose a threat to common regional interests as well as a national security risk and affect the physical and socio-economic well-being of Myanmar.

The primary objective of national security is to fulfil the national vision and safeguard the national interests which include, among others, the protection of the people, their ways of life, welfare and well-being. The Project activities, equipment, and infrastructure can increase community exposure to risks and impacts including the health, safety, and security of the public. Safeguarding of personnel and their properties are to be carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the local communities. Security should be provided in a manner that does not jeopardize the community's safety and security, or the Project Proponent's relationship with the community. The Project Proponent is required to assess risks posed by its security arrangements to those within and outside the Project.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Where the consequences of emergency events are likely to extend beyond the Project property boundary or originate outside of the Project property boundary, the Project Proponent is required to include emergency response plans based on the risks to the health, safety and security of the community and other stakeholders.

The International Convention for the Safety of Life at Sea (SOLAS) is an international maritime safety treaty from the International Maritime Organization (IMO), the maritime arm of the United Nations. The ISPS Code was adopted under the SOLAS Convention. The ISPS Code is a comprehensive set of measures to enhance the security of ships and port facilities. Section 3.1.2 of the Code defines the applicability as, "This Code applies to port facilities serving the ships engaged on international voyages." Section 3.2 further states that, "Notwithstanding the provisions of Section 3.1.2, Contracting Governments shall decide the extent of application of this Part of the Code to those port facilities within their territory which, although used primarily by ships not engaged on international voyages, are required, occasionally, to serve ships arriving or departing on an international voyage."

Port areas and ships in ports have many vulnerabilities to potential terrorist attack. Port areas have very large landside perimeters to secure, giving terrorists many potential landside points of entry. The ports are located immediately adjacent to resident areas, giving terrorists places to hide while approaching or escaping from port areas. Large numbers of trucks move in and out of ports, making it possible for terrorists to use a truck to bring themselves and their weapons into a port. Many ports harbor fishing and recreational boats that terrorists could use to mask their approach to a target ship. According to the Legal Aspects of Port Management, the Report by the UNCTAD secretariat, Port activities are no exception to the rules of liability, and ports are considered danger zones for the public, which is one of the reasons why access to them is often prohibited. The port authority is not the only agency operating in a port, where numerous individuals and undertakings perform a multitude of activities.

Since the port activities involve handling of dangerous goods, it is required to observe the International Maritime Dangerous Goods (IMDG) Code, which was developed as an international code for the maritime transport of dangerous goods in packaged form, in order to enhance and harmonize the safe and secure carriage of dangerous goods and to prevent pollution to the environment.

The term national security has no universally accepted definition and concepts linked to it are often ambiguous with an emphasis on freedom from military threat.¹⁰⁴ A common understanding of national security focuses on the protection of society and citizens against threat or risk by government or nation states. Maritime ports are the gateway to the ocean and trade routes of the world. As a result, ports are naturally attractive targets to those seeking to facilitate or perpetrate crime or terrorism. Robust port security complements border security, making the ports and coastline less attractive to those who wish to exploit the nation. It covers a wide range of threats, from trespassers and petty theft, through to counter terrorism, state sponsored cyber-attacks and smuggling by Organized Crime and Gang Section (OCGS).

Hence, it is crucial to work closely with Contracting Authority as well as local community to determine the events related to outside or beyond the Project boundary.

9. Grievances redress mechanism

A grievances redress mechanism (GRM), which is functional, operational, and transparent, shall be established to deal with grievances of the directly and indirectly impacted local communities and other stakeholders. In doing so, the following points shall be considered:

- (1) Multi-channel opinion collection method shall be considered.
- (2) Representatives of multi-stakeholders shall be involved in the process of dealing with each issue for justice and transparency.
- (3) In undergoing the process, including investigation activities, lawyers or persons knowledgeable in laws and representatives of the government departments concerned, which are in a position to take action, shall be allowed to participate.

¹⁰⁴ Babak Akhgar, Simeon Yates, 2013, Strategic Intelligence Management, National Security Imperatives and Information and Communications Technologies, Butterworth-Heinemann

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- (4) The appointed manager is required to communicate with the complainant on the status of complaint handling and resolution.

7.7.2 “No Project” option

This project will see the opening up of major global markets across Southeast Asia, China and India with new direct sea routes to East Asia, Africa and America, Middle East and Europe. The Project will generate sustainable economic growth & prosperity for KPSEZ & Rakhine state and Myanmar with professional and leading port services, whilst respecting environment & people’s well-being. Myanmar, as a partner and host to the port, will also enjoy benefits, that will increase with growing volume in international trade and the development of local and national economy. With this expectation as the goal of the Project, the “No Project” option can be ruled out.

However, implementation of the Project is associated with proper fulfilment of the environmental and socio-economic obligations—mitigation of potential environmental negative impacts and recompense for livelihoods that are factually jeopardised by the Project implementation. Proper mitigation measures and enhancement plans will alleviate the concerns of the local residents who wish to go about their businesses as usual, or in better conditions brought about with the enhancement of the positive impacts.

As Rakhine State is a sensitive part of the country, it is essential to win the trust and support of stakeholders—the local communities, political parties, Civil Society Organizations and the ethnic armed organization in Rakhine State. Consideration of the regional context and involvement of these stakeholders are essential in avoiding the “No Project” option.

7.7.3 Environmental and Social Management and Monitoring Plans

1. The management of the Project Proponent is required to establish a set of policy statements. The policy statements shall be compatible with the context of the Project providing the strategic direction outlining intentions.
 - (a) Environmental Policy
 - (b) Health and Safety Policy
 - (c) Social Responsibility Policy
 - (d) Respect for Human Rights Policy
 - (e) Good Governance Policy
2. The Project Proponent shall have the following Environmental and Social Management and Monitoring Plans as per the requirement of MONREC:
 - (a) Air quality management and monitoring plan
 - (b) Wastewater management and monitoring plan
 - (c) Noise and vibration management and monitoring plan
 - (d) Solid waste (hazardous and non-hazardous waste) management and monitoring plan
 - (e) Hazardous materials management and monitoring plan
 - (f) Occupational health and safety management and monitoring plan
 - (g) Community health and safety management and monitoring plan
 - (h) Biodiversity management and monitoring plan
3. For the transfer stage, specific expert interviews and discussions are required to be organized with the relevant stakeholders (especially, the parties of the Project) and subject matter experts. A proposed transfer management shall be prepared. The details on the issues and proposed actions shall be included in the EIA report.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

Summary

The Terms of Reference (ToR) was developed based on the scoping for the EIA investigation in accordance with applicable guidelines issued or adopted by the MONREC. The ToR is a detailed table of contents for the EIA report with descriptions of required studies, activities, methodologies and expert inputs for each section of the report. The ToR covers the following aspects: Introduction, Background Information, Information of the Project Proponent, Policy, Legal and Institutional Framework, Project Description and Alternatives, Description of the Surrounding Environment, Impact and Risk Assessment and Mitigation Measures, Cumulative Impact Assessment, Environmental Management Plan, Public Consultation and Disclosure, and Conclusion and Recommendations. The tables of contents for the EIA report and EMP are described.

1. Introduction

1.1 Purpose of the ToR

The Terms of Reference (ToR) for the Environmental Impact Assessment (EIA) investigations is prepared based on the scoping study. The purpose of ToR is to identify the further required studies, and surveys related to all biological, physical, social, economic, health, cultural and visual components of the study area that may be affected by the Project during project phases along with the activities and methodologies for the conducting of studies and surveys. Specific topics such as livelihood (fishery) impact and human right impact assessments are to be studied in detail in the social component of the study. The ToR will also describe the identification and assessment methodologies for all the Project related adverse impacts, risks, cumulative impacts and residual impacts for the environment and social aspects.

1.2 Study Area and Limitations

The Yanbye Island Port Terminal of the Project is to be developed nearshore of Yanbye Island (north-eastern) and the Project location is at 19°22'49.99"N and 93°37'26.17"E which is about 10 nautical km south east of Kyauk Phyu Township. In general, the study area covers the Project area and surroundings including five villages in Made Island and ten villages in Yanbye Island as direct impact zone and the whole area of Kyauk Phyu Township as indirect impact zone.

Note: The study areas for physical, biological and social and socio-economic environment including public health and cultural aspects are detailed in Chapter 4. Description of the Surrounding Environment.

There are no significant constraints or limitations with accessing the Project area and study area and difficulties with conducting public consultation meetings (including Key Informant Interviews and Focus Group Discussions) with the local community. There are some constraints in conducting baseline data collections in certain areas of Kyauk Phyu Township due to accessibility restriction.

2. Background Information

2.1 Objectives

The development of Deep Sea Ports play an important role in the economic development and prosperity of the country. The proposed DSP could be the catalyst to the creation of new two (2)-way regional and international trading routes. The DSP Project is a key component of the Myanmar Government's integrated approach to development, incorporating a new Industrial Park (IP). The KP SEZ integrated development will be one of the most strategically important components of Myanmar's future growth and prosperity. By implementing the DSP Project, the following objectives can be achieved:

- 1) Opening up major global markets across Southeast Asia, China, and India with new direct sea routes to East Asia, Africa and America, Middle East and Europe; and
- 2) Creating a shipping hub at the center of the Bay of Bengal, and a Gateway to China from the Indian Ocean

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

2.2 Major Components of the Project

The Yanbye Island Port Terminal of the Project is designed as multi-purpose island terminal, comprising one (1) multi-purpose terminal and three (3) container terminals. These four (4) berths terminal is to handle peak annual container capacity of 2.72 million TEUs and a proposed peak cargo capacity of 2.6 million tons. The major components of the Yanbye Island Port Terminal of the Project are described in the table below.

Table ToR 1: Project components and work activities of Yanbye Island Deep Sea Port

Project Works and Activities	Quantity / Measurement
Works	
Total Footprint	96 ha
Container Terminal	3
Multi-purpose Terminal	1
Service Terminal	-
Heavy Container Yard	6 (37 ha)
Max Annual Container Capacity (m TEU)	2.72
Annual Cargo Capacity (m tons)	2.6
Quay Structure – Gravity Structure (e.g., Caisson)	1,600 m in length
Berth	4
Temporary Construction Jetty	1
Quay Apron Area	12 ha
Reefer Yard	1.2 ha
Empty Yard	8.6 ha
General Cargo Yard	5.1 ha
66 kV Transmission Line (Port sub-stations to existing sub-stations)	2,965 m
Bridge	Length to be confirmed
New Access Road (13.5 km)	2 lane (14.3 m wide)
Shoreline Protection/Revetment/Rip Rap	2,800 m
Marine Works (Estimated no. of floating navigational aids with anchors)	20 channel markers
Temporary Cofferdam/Diversion Dikes/Flood Trench	4,400 m
Site Roads	17.5 ha
Green Area	2.6 ha
CFS and Custom Inspection Stand	6.1 ha
Storage Warehouse/Maintenance Workshop	2
Fire Station	1
Water Treatment Plant	1
Sewage Treatment Plant	1
Marine Supply Base	-
Oil Storage Tank	-
Refueling Station	1
Waste Transfer Station	1
Office Building	1
Apartment Building	3
Dining Hall	1
Apron Office	1

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Project Works and Activities	Quantity / Measurement
HVAC System	1
Truck Parking Lot	33
Car Parking Lot	33
In/Out Gate Complex and Gate Office	1
Security Kiosk	1
Electricity Substation	4
Expected Water Consumption	3,000 m ³ /d
Water Line (xx dm)	X m
Peak Workforce - Construction	1,083
Peak Workforce – Operation	1,400
Physical Activities	
Land Reclamation	96 ha
Dredging (Side slope of approach channel, turning basin) (Estimated affected plan area & estimated dredged volume)	243 ha (est. 22 Mm ³)
Blasting (as needed)	
Pile Driving (linear meters @ 15 m spacing assumed behind quay wall for crane rail beam), excluding bridges, roads and infrastructure outside of terminal areas	Est. 107 no. of piles
Civil and earthworks (clearing, stripping, grading, contouring and excavation): access roads, transmission line	TBC
Disposal at Sea (Dredged/Spoil Material) Assume that 70% of material to be spoiled, with 30% to be reused for reclamation	Est. 15.4 Mm ³
Shipping Traffic – Construction (average over period) (route from Kyauk Phyu harbour outer anchorage/ pilotage station to the Project site and CNPC jetty)	TBD
Shipping Traffic – Operation (average over vessel sizes) (same route as above in construction)	TBD
Water Pipeline Installation	

3. Information on Project Proponent

On behalf of the Government of the Republic of the Union of Myanmar, the Kyaukphyu Special Economic Zone Management Committee (KPSEZ MC) awarded the Kyauk Phyu Special Economic Zone Deep Sea Port Project (Project) for the conceptualization, design, build, finance, operation, maintenance and transfer (DBFOMT) of a deep sea port (DSP) (comprising the Yanbye Island port and the Made Island port, including the connection of a bridge and a road of approximately 15 km in length between DSP and an Industrial Park (IP) at the Kyaukphyu Special Economic Zone (KPSEZ)), through a competitive international bidding process to a consortium led by CITIC Group Corporation (CITIC Consortium) in December 2015.

The Project will be implemented by the Project Proponent, namely, Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd. (Company) jointly established by the KPSEZ MC and CITIC Consortium Myanmar Port Investment Limited (Investor), an SPV set up by CITIC Consortium. The formal transaction documents for the Project were entered into in 2020 and the Company was also established in the same year.

This will see the opening up of major global markets across Southeast Asia, China and India with new direct sea routes to East Asia, Africa and America, Middle East and Europe. The Project will generate

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

sustainable economic growth & prosperity for KPSEZ & Rakhine state and Myanmar with professional and leading port services, whilst respecting environment & people's well-being.

3.1 Details of Contact Person

Project Proponent	Kyaukphyu Special Economic Zone Deep Seaport Co Ltd (Its major shareholder, CITIC Consortium Myanmar Port Investment Limited, has been authorized to conduct ESIA work)
Project Proponent's address for correspondence	No.(B-02-01), Golden City Business Center, Yankin Road, Yankin Township, Yangon, Myanmar.
Contacts of Project Proponent	1. Mr. Zhu Xuyang (For English), Phone No.: +95-9-259927723 Email: zhuxy20@citic.com 2. U Yan Aung (For Burmese) Phone No.: +95-9-699286688 Email: fuqh@citic.com
Fax	+95-1-9376067
Website	http://www.citicmyanmar.com

4. Policy, Legal and Institutional Framework

The Project Proponent commits to comply with current Myanmar environmental and social policy, legal and institutional frameworks applicable to the Project, and applicable international and regional conventions and treaties signed or ratified by the Myanmar Government. The national policies, plans and strategies comprise the following: National Environmental Policy of Myanmar (2019), Myanmar Climate Change Policy (2019), National Land Use Policy (2016), Myanmar Climate Change Master Plan (2018 – 2030), Myanmar National Waste Management Strategy and Master Plan (2018 – 2030), Myanmar Climate Change Strategy (2018 – 2030), National Sustainable Development Strategy (2009), Myanmar Sustainable Development Plan (2018 – 2030) and National Biodiversity Strategy and Action Plan (2015 – 2020).

A total of 61 existing laws, rules and procedures relating to the Project are included. These laws include Myanmar Special Economic Zone Law (2014), Environmental Conservation Law (2012), Union of Myanmar Public Health Law (1972), Occupational Safety and Health Law (2019), Protection and Safeguarding the Right of the Ethnic Nationalities Law (2015), Myanmar Port Authority Law (2015), Conservation of Water Resources and Rivers Law (2006), Protection and Conservation of Cultural Heritage Regions Law (2019), Environmental Impact Assessment Procedure (2015), and National Environmental Quality (Emission) Guidelines (2015) etc.

The International conventions, treaties and agreements related to the environment and social aspects, to which the Myanmar Government is a signatory and have implications for the Project, are described. These international conventions, treaties and agreements include the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biological Diversity (CBD), the International Convention for the Prevention of Pollution from Ships (MARPOL), the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), the United Nations Declaration on the Rights of Indigenous Peoples, UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972 (World Heritage Convention) and the UN Guiding Principles on Business and Human Rights, etc.

The Project environmental and social policies. The organizations responsible for EIA study, implementation of mitigation measures, Environmental Management Plan and Monitoring Plans are described.

The relevant government agencies and their roles and responsibilities related to the Project are detailed and these include the Kyauk Phyu Special Economic Zone Management Committee, the Ministry of

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Natural Resources and Environmental Conservation, the Ministry of Construction, the Ministry of Labour, Ministry of Agriculture, Livestock and Irrigation, the Ministry of Home Affairs and etc.

Where gaps in local legislation exist, the Project will be implemented according to international best industry practice, and these practices include the International Finance Corporation (IFC)'s environmental and social performance standards and IFC's general Environmental, Health and Safety (EHS) guidelines and IFC's Environmental, Health and Safety (EHS) guidelines for Ports, Harbours and Terminals.

5. Project Description and Alternatives

5.1 Project Description

The Yanbye Island Port Terminal of the Project is designed into multi-purpose island terminal which include 1 multi-purpose terminal and 3 container terminals. These 4 berths terminal is to be constructed at the last phase, phase 4 to handle peak annual container capacity of 2.72 million TEUs and a proposed peak cargo capacity of 2.6million tons annually. The Yanbye terminal will be located in shallower water between -3m CD and -6m CD, requiring dredging and land reclamation to construct the terminal area. Construction of the Yanbye Island Port Terminal of the Project is subject to the Company meeting criteria in the Concession Agreement. Construction methods and sequencing for Yanbye Island Port Terminal of the Project is expected to follow a similar approach to that for Made Island Port Terminal of the Project.

For terminal operation, it involves operative elements for maximizing flexibility of terminal usage based on terminal equipment, IT system, flexible storage area design and terminal automation. The ancillary facilities of the Project are office buildings, apartment buildings, dining hall, waiting room, customs inspection stand, container freight station (CFS), apron office, roads fire stations, administrative facilities, storage and laydown areas, car and truck parking, in and out gate offices and security kiosks.

To accommodate four berths, the Yanbye Island Port Terminal of the Project has a total quay length of approximately 1,600 m and a width of 600m. The amount of reclamation work for the construction of terminal will be used by the suitable dredging materials. The foundation shall meet the requirements of bearing capacity and settlement criteria. The container yard will be equipped with the electrified rubber tyred gantry (E-RTG) option, subject to the local resource supply conditions.

Power supply to support port operations will be provided by constructing transformer step-down stations and 5.6 km of 66 kV transmission line to tie-in to the existing 40 MVA sub-station on Yanbye Island, which connect to the existing Kyauk Phyu Gas Power Plant. A telecommunication switch centre will be constructed.

Four water supply reservoirs (Doe tan Dam, Pya de Dam, Thaing Chaung Dam and the CNOPC reservoir) have been identified as potential sources of freshwater for the Project. The total water demand for the Project is estimated at 3,000 m³/ day for Yanbye Island Port Terminal of the Project. A water treatment plant, with the design capacity of 3,000 m³/d will be constructed and it will supply water to the firefighting station, marine drilling platform and marine supply vessels.

The Flood Drainage Trench functions to collect rainwater around the land-side perimeter of the Yanbye Island Port Terminal of the Project and direct it to the water treatment plant. Once rainwater meets Emission Limit Values under the National Environmental Quality (Emission) Guidelines, it will be discharged into the sea. Clean, non-contact rainwater will be collected and discharged into the sea directly.

A sewage treatment plant will be constructed, and the capacity of the domestic and production sewage treatment plant is 15t/h for the Yanbye Island Port Terminal of the Project. A waste transfer station will be constructed on Yanbye Island Port Terminal of the Project. Waste will be separated into domestic and toxic/hazardous, then stored for final disposal at an approved, off-site landfill. A fire station with the service radius of about 2500 meters will be constructed to meet the five minutes' response time requirements.

The following pavements of road and yard structure will be considered: cast-in-situ concrete pavement for the roads, parking lots, RTG maintenance area, etc., empty container yard and general cargo yard construction by using interlocking block pavement, heavy container yard and reefer container yard will adopt cast-in-situ concrete beams (for the container support foundation) and precast concrete

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

interlocking block pavement (for the areas between container support foundations), and E-RTG runways will adopt cast-in-situ concrete runway beam.

As operational requirements, handling technology on the quay, handling technology in stacking yard, and horizontal transportation will be applied. The container terminal operation simulator (CTOS) will be implemented for facilitating terminal planning, quayside and yard operations, internal and external communication links and terminal administration.

5.2 Alternatives

For the Project alternatives, the following procedures will be applied: Comparison of alternatives, Methodology of alternatives selection, Rationale for the selection of preferred alternative, Description of the preferred alternative.

The applicable and possible alternatives that have been considered for the Project include:

- Location Alternative,
- Orientation Alternative,
- Design Alternative, and
- No Project Alternative.

Social, environmental and economic aspects were taken into account when considering alternatives and determining the preferred alternative.

The proposed location could be considered ideal for the Project development. However, multidisciplinary feasibility studies and assessments are strongly recommended prior to the Project commencement.

Any directional and bearing adjustments made to the current orientation could have tangible impacts on the new navigational area and ship movements.

The proposed Yanbye Island Port Terminal of the Project satisfies all the criteria for a 5th Generation multi-purpose terminal, which the Project Proponent aims to develop through international guidance and best practice. Thus, given the scope of multipurpose terminal and design description, there is no comparable port and terminal generation alternative as the Project Proponent favours the latest generation ports and terminals configuration.

The “No Project Option” was also considered to avoid negative impacts to environmental and social aspects. However, by leaving the proposed area without any development will result in the local community and the government (State and Union) losing the opportunities to benefit from the development project.

While ports are vital for economic development, construction, operation, the associated maritime traffic, handling of goods, and road transport take a heavy toll on the environment through air and water pollution and on the livelihoods and other social aspects of local people. Adverse effects of port development for EIA have been compiled by several organizations including the World Bank, the Asian Development Bank and the International Association of Ports and Harbours.

The ESIA process shall determine these significant impacts of the Project. To ensure the Project benefits to far out-weigh the negative impacts and to enable to avoid the “No Project Option”, it is crucial to commit and implement all proposed mitigation measures which shall be addressed in ESIA Report.

6. Description of the Surrounding Environment

6.1 Physical Environment

The Yanbye Island Port Terminal of the Project comprises a number of complex land uses and the approach channel of Thanzit river to accommodate the main terminal and new navigational area. The climate of the Rakhine Basin is comprised of three dominant seasons and the Project area is influenced by two tropical monsoon periods: from June to September, the area is influenced by the southwest monsoon, characterized by extensive cloud cover and almost daily precipitation, interspersed with rain squalls or thundershowers. The northeast monsoon occurs from December to April with milder temperatures, lower humidity and less rainfall. There is no comprehensive air quality monitoring data available for Yanbye Island. MSR has performed preliminary baseline air quality data collections. The seven (7)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

days long continuous sampling results reveals that SO₂ and NO₂ are being identified as air quality issues in the area. MSR had also performed preliminary baseline noise quality data collection in the area in parallel to baseline ambient air quality data collection. The two (2) days long intermittent sampling in several periods of the day at focus interval results reveals that noise intensity levels are high in the area.

The Project lies within the Rakhine Coastal Lowlands which spans several states in the western region of Myanmar. The topography of the Yanbye Island is generally level and marshy and the highest peak of the northern frontier of Yanbye Island is below 150 meters.

According to the seismic zone map of Myanmar, the proposed Project lies within a strong earthquake zone. The soil type and characteristics of Yanbye Island is gley and gley swampy soils of category 3 in low lying areas and lateritic soils 6 according to soil category. The surface hydrology of Yanbye Island includes freshwater in both the groundwater and surface water resources and seawaters (brackish). Groundwater quality data at the Project area is not available. This data gap will be filled through baseline water quality data collection in 19 locations which includes surface water of both fresh and brackish and groundwater within Area of Influence.

Watercourses in the Project area act as transitional bodies of water, forming part of a network of estuaries and alluvial tidal channels influenced by fresh water runoff, yet remaining partly saline throughout the year. Tides in the region are classified as semi-diurnal (i.e., two low and two high tides a day).

6.2 Biological Environment

A few small patches of forest left on the Yanbye Island are part of original semi-evergreen forest which is mostly found on the hilly areas. Small clusters of bamboo communities of *Melocanna baccifera* (Kayin-wa), *Dendrocalamus brandisii* (Wabo) and *Dendrocalamus longispathus* (Wanet) are found in some hilly terrain. In terms of plantations, *Anacardium occidentale* (Thiho-thayet) and *Areca catechu* (Kunthi-pin) are found in the hill forest areas.

The Yanbye Island is located in the area of Rakhine mangrove region of the Myanmar Coastal Mangroves (Ecoregion Number 78). There are no known designated conservation areas such as key biodiversity areas (KBAs) and other Protected Areas in the areas of direct influence of the Project. Mangroves grow along the coast especially in soft tidal mud and mud banks of tidal streams along the eastern and southern coast rather than on the seaward side. The mangroves around the island are a more or less dense forest of moderate height.

Mangrove forests on Yanbye Island have similar biodiversity features of Wunbaik Reserved Mangrove Forest, one of the largest remaining mangrove stands in Myanmar.

There is a low population of amphibians, reptiles, and large mammals. Flying Foxes (bats) and Raptors were not identified on the island. Other birds such as Oriental pied hornbills, Red-breasted parakeets, Spotted Doves and Red-whiskered Bulbuls were recorded as common birds (Avifauna) in the study area. There are a small number of insect indicator species including dragonfly and butterfly found in the Project area.

Three species of marine mammals including IUCN Red Listed Ayeyarwady dolphin, the Indo-Pacific finless porpoise and Indo-Pacific humpback dolphin are also locally reported to be existing in the nearby waters of Yanbye Island. Marine turtles can be found in both the offshore and coastal waters surrounding the island.

There are 10 species of benthos, 13 species of mollusks and gastropods samples had been found during scoping survey in the Project vicinity. Other benthic habitats exist near the Project area consist of muddy shore, and rocky outcrops. These areas provide a suitable environment for benthic invertebrates such as prawns, mud crab, and shrimp that are very important commercial species to the local fisheries community.

Ninety-seven (97) species of phytoplankton and 186 species of zooplankton are found in the coastal waters. There are 104 species of bony fishes, two (2) species of sharks and seven (7) species of rays recorded adjacent coastal waters of Kyauk Phyu.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

6.3 Social Environment

Kyauk Pyu Township

Kyauk Phyu Township, where the DSP Project will take place, is located in Rakhine State. It is about 394 miles (634 kilometers) by road and one hour and 15 minutes by air from Yangon, the chief commercial city of the country. It is bounded by Ann Township in the east, the Bay of Bengal in the west, Yanbye Township in the south and Myebon Township in the north. It has an area of 678.35 square-miles with a width of 54 miles from east to west and with a length of 90 miles from south to north.

Kyauk Phyu is the second largest township in Rakhine State, and comprises two (2) towns, 22 wards, and 249 villages. The majority of the residents in the township belong to the Rakhine ethnic race and there are a few other ethnic races such as Maramagyi, Chin, Kayin and Bamar and some Bengalis. It has a population of 173,275, most of them professing Buddhism. There are a few residents of Christian, Hindu, and Islamic faiths.

The major businesses in the township are resource-based. Economic development opportunities in the area include existing onshore and offshore oil and natural gas, construction of deep-sea ports and a special economic zone, commercial and traditional fishing, agriculture with paddy as the major crop and eco-tourism opportunities.

The following tables describe selected data from Kyauk Phyu Township profile:

Table ToR 2: Demographic Data (Kyauk Phyu Township)

Popula-tion	House-hold	House	Ward	Vil-lage Tract	Vil-lage	Ethnics	Religion
173,275	39,514	36,928	22	52	249	Rakhine (95.61%), Chin (0.5%), Bamar (0.16%), Other (3.73%)	Buddhism (95.15%) Christian (0.51%) Hinduism (0.19%) Islamism (4.15%)

Table ToR 3: Land Use (Kyauk Phyu Township)

S.N.	Particulars	Area (in Acre)	Percentage (%)
1	Net Plantation Area	52,692	12.14
	(a) Paddy plantation area	46,090	
	(b) Plantation area of other crops	-	
I) Silted-up land		128	
	(d) Garden land	5,348	
	(e) Nipa palms plantation area	1,126	
2	Reserved land area	9,898	2.28
	(a) Paddy plantation area	9,898	
3	Pasture land area	204	0.05
4	Industrial land area	849	0.20
5	Urban area	384	0.09
6	Rural area	1,390	0.32
7	Reserved/unreserved forest area	16,876	3.89
8	Forest land area	201,771	46.48
9	Virgin land area	52,154	12.01
10	Uncultivable land area	26,937	6.20
11	Others	70,989	16.35
Total ►		434,144	100.00

Others: Road area, common-owned land of villages, beaches, etc.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table ToR 4: Major Livelihoods and Socioeconomic Settings (Kyauk Phyu Township)

S.N.	Particulars	Numbers	S.N.	Particulars	Numbers
1	Farmers with plantation	39,240	10	Factories	10
2	Livestock breeders	2,154	11	Companies	37
3	Traders	4,239	12	Hotels	8
4	Fishery businessmen	9,495	13	Motels	2
5	Government employees	3,862	14	Guesthouses	18
6	Stores, food and other hops	476	15	Banks	9
7	Services providers	15,161	16	Petrol/diesel shops	7
8	Operators of other businesses	2,404	17	Markets	5
9	Odd job workers	15,142	18	Mini-stores	2

Yanbye Island

The sites of the three sub-projects—Made Island Port Terminal of the Project, Yanbye Island Port Terminal of the Project and the 15-km Access Road with Bridge of the Project —covered by the proposed DSP Project are located in Kyauk Phyu Township, Rakhine State, in the western part of Myanmar.

Yanbye Island Port Terminal of the Project will be constructed on the bank of the Thansit river of Yanbye Island and ten (10) km south east of Kyauk Phyu. The nearest villages to the proposed project are Kyan Chein, Thit Poke Taung, Say Maw and Sit Taw villages. These four villages have 613 households and a population of 2,899 and all of them are Rakhine nationals.

Livelihoods and existing infrastructure on the island

The following information provides existing conditions of businesses, livelihoods, and infrastructure on Yanbye Island:

The main business:	The main business on the island is fishing, with about 75% of all households obtaining a living by fishing. The island has some 250 fishing boats of various sizes and villagers depend on the Thanzit River for fishing.
Agriculture:	Some people grow paddy, but there are only a few farmland owners. Sit Taw and Say Maw villages mostly grow paddy.
Livestock breeding:	Villagers raise ducks, pigs and chickens for their own use and some farmers raise cattle. Some households raise pigs on a small scale—three (3) to five (5) pigs. There are no commercial-scale livestock breeders.
Electricity:	Of the total four villages, Kyan Chein and Say Maw villages do not have electricity. Villagers use solar panels, battery or candles for lighting and firewood for cooking. Monasteries have their own generators.
Water:	Villages get fresh water from hand-dug wells or ponds.
Mobile phones:	Every household has mobile phones, but reception is difficult in some villages.
Rubbish disposal:	Rubbish is buried or burnt within the household compounds. There is no specifically designated places for rubbish disposal. Some households throw the rubbish into the river.
Roads:	Roads in villages are earthen roads and can be used by motorcycles only in the dry season. Roads are not usable during the wet season, and people travel on foot.
Toilets:	A few households have hand-flush toilets, and others have pit latrines or defecate in the woods.
Transport:	Thit Poke Taung and Sit Taw villages are within the naval base compound and there are tarred roads leading from the naval base gate to those villages. Villagers can go to Kyauk Phyu by boat from a river near Thit Poke

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

	Taung village but the river does not have a jetty. The road between Kyan Chein and Say Maw villages is a rough earthen road. Cars and motorcycles can use it only in the dry season and transportation is difficult in the area.
Education:	Sit Taw village has a high school while Thit Poke Taung and Kyan Chein villages have a middle school in each village. Say Maw village has a post-primary school. These four villages have total 541 primary children, 258 middle school students and 159 high school students.
Healthcare service:	These four villages do not have a station hospital or private clinic. Villagers from Thit Poke Taung and Sit Taw villages go to the clinic at the naval base and villagers of Say Maw and Kyan Chein villages have to transport serious patients to the Kyauk Phyu Hospital. Each village has a midwife. Hypertension, heart disease, diabetes, diarrhea, tuberculosis, hepatitis, and anemia in children are common.
Religion:	Each village has a monastery. Some monasteries have ancient paintings and sculptures of Buddha and ancient pagodas. Villagers have seasonal religious celebrations and ceremonies like robe-offering and lighting. They have novitiation ceremonies in the dry season.

6.4 Baseline Data Collection Work Plan

The detailed baseline data collection will be carried out to update the baseline established in the scoping report.

The study area will be defined based not only on the Project site and location but also the spatial and temporal limits of the environment outside the Project Area boundaries where an effect can be reasonably expected. The potential impacts and their nature, area of influence, project affected persons and valued Environmental and Social components will be considered for setting the study limit.

The physical components: surrounding land use pattern, topography, geology, soil type, climate and weather conditions, air quality, water quality, natural hazards will be described with data and maps.

The biological components: descriptions on fauna and flora including abundance, spatial distribution of rare, endangered and vulnerable species, and species of economic and health/nutritional values, and description of valued or sensitive environmental areas and habitats will be included. The necessary images will also be provided.

The socio-economic components: livelihoods, living conditions and access to public services and natural resources, land use, other socio-economic indicators such as poverty, employment and education will be described. The supporting maps and figures will be included. The public health components: mortality and morbidity, occurrence of diseases, and social health determinants will be mentioned. The cultural, historical, religious sites and visual components will be described if any. The special topics such as livelihood (fishery) impact and human rights impact assessments will be studied in detail in the social component of the study.

The baseline study workplans for physical, biological and social environment and modelling workplans are mentioned below.

6.4.1 Physical Environment Baseline Work Plan

The following table presents the detailed research scope for each environmental component relevant to the Project Environmental Impact Assessment (EIA). The locations for the collection of samples may change according to environmental settings and the ecological values of the Project area. In this proposal, baseline data collection for soil and water samples is considered with regard to the merit of local topographic and hydrologic settings and the location of sample sources within the area of influence for impacts sensitivity (primary and secondary sensitivity). A project site oriented (i.e., Project site and Project impact zones) approach will be used for ambient air and noise quality baseline data collection.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Table ToR 5: Scope for Baseline Environmental Data Collection for Yanbye Island Port Terminal of the Project EIA

Environmental Compartments	Sample number and Name	Sample/ Receptor Location and Spatial Dispersion Scope	Indicators / Parameters (See Appendix 13)	Implication to Impacts Identification by Project Activities
Soil	1 No. (S7)	<ol style="list-style-type: none"> Terminal Construct-on - Adjacent to Project Boundary Receptor (Wetlands) Receptor (hydrological Channel) 	Nutrients (Micro) (10 Parameters)	<ol style="list-style-type: none"> Land Use Change Earthwork (Borrow Pits) Earthwork (Construction Site) Erosion and Sediment Dust and Particulate Visual Noise and Vibration Solid Wastes Hazardous Waste Soil Sediment Dispersion (Modelling)
	4 Nos. (S6, S8, S9 and S16)	<ol style="list-style-type: none"> Receptor (Human Settlements) Receptor (Wetlands) Receptor (Hydrologic Channels and borrow pit) 	Heavy Metals (7 Parameters)	
Water	2 Nos. SW 13 and SW14	<ol style="list-style-type: none"> Receptor (Hydrologic Channels) Receptor (Human Settlements) Receptor (Wetlands) 	<ol style="list-style-type: none"> Physical Characteristics (3 parameters) 	<ol style="list-style-type: none"> Erosion and Sediment Stormwater Surface Water Quality
	1 No. GW1	<ol style="list-style-type: none"> Receptor (Human Settlements) Receptor (Service Wells) 	<ol style="list-style-type: none"> Chemical Characteristics (42 parameters) 	<ol style="list-style-type: none"> Ground Water Quality Stormwater
	6 Nos. RW1,RW2, RW3,RW4, RW5 and RW6,	<ol style="list-style-type: none"> Terminal Construction Site – adjacent to piles and yards 	<ol style="list-style-type: none"> Pathological Characteristics (3 parameters) 	<ol style="list-style-type: none"> Cumulative and Transboundary
Ambient Environmental Quality	3 Nos. AQ3, AQ4, and AQ7	<ol style="list-style-type: none"> Receptor (Project Site and Human) 	Air Quality: SO ₂ , NO ₂ , PM _{2.5} , PM ₁₀ , O ₃ and CO	<ol style="list-style-type: none"> Dust and Particulate Fugitive Gases Emission

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Environmental Compartments	Sample number and Name	Sample/ Receptor Location and Spatial Dispersion Scope	Indicators / Parameters (See Appendix 13)	Implication to Impacts Identification by Project Activities
(Air and Noise)		Settlement at vicinity of the Project)	Noise/Vibration: dB(A)	3. Noise and Vibration 4. Pollutant Dispersion Modelling (Scenario)
Marine Sediment Quality	3 Nos. BH-YN-05-U ₁ , BH-YN-05-U ₈ , BH-YN-08-U ₁	1. Receptor (Benthic Communities and Aquatic Ecosystem)	Toxic Chemicals and Persistence Chemicals (See Appendix)	1. Marine Sediment Quality 2. Dredging (Excavation)

Abbreviation:

S= Soil, SW=Surface Water, GW= Groundwater, RW = Sea Water, AQ= Air Quality, MS = Marine Sediment

Table ToR 6: Soil Samples Baseline Data Collection for Yanbye Island Port Terminal of the Project

Yanbye Island Port Terminal of the Project					
Sr/No	Sample Name	Sample Code	Coordinates		Relationship to Project Impact Zones
1	Soil-6	S-6	1°21'5".33"N, 9°37'3".08"E	Yanbye Island	Secondary
2	Soil-7	S-7	1°22'2".44"N, 9°37'2".58"E	Yanbye Island	Primary
3	Soil-8	S-8	1°22'".73"N, 9°37'1".04"E	Yanbye Island	Primary
4	Soil-9	S-9	1°22'1".94"N, 9°36'4".87"E	Yanbye Island	Primary
5	Soil-16	S-16	1°22'2".71"N, 9°37'5".82"E	Yanbye Island	Secondary

Note: 1. Actual sample collection points will be subject to change based on site conditions.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**



Figure ToR 1: Aerial Ph-to - Tentative location of Soil Sample Collections for Environmental Baseline Data Collection for Yanbye Island Port Terminal of the Project

Table ToR 7: Collection Points for 9 Baseline Water Samples Data Collection – Yanbye Island

Yanbye Island Port Terminal of the Project					
Sr. No.	Sample Name	Sample Code	Coordinates (Tentative) Location		Relationship to Project Impact Zones
1	Surface Water-6	SW-6	19°22'10.34"N, 93°36'10.07"E	Yanbye Island	Secondary
2	Surface Water-7	SW-7	19°22'53.34"N, 93°36'37.07"E	Yanbye Island	Primary
3	River Water-2	RW-2	19°22'54.23"N, 93°38'24.69"E	Made Kyun River	Primary
4	River Water-3	RW-3	19°23'28.21"N, 93°36'59.15"E	Made Kyun River	Primary
5	River Water-1	RW-3	19°23'28.21"N, 93°36'59.15"E	Made Kyun River	Cumulative and Transboundary
6	River Water-5	RW-2	19°22'54.23"N, 93°38'24.69"E	Made Kyun River	Cumulative and Transboundary
7	River Water-6	RW-3	19°23'28.21"N, 93°36'59.15"E	Made Kyun River	Cumulative and Transboundary
8	River Water-4	RW-3	19°23'28.21"N, 93°36'59.15"E	Made Kyun River	Cumulative and Transboundary
9	Ground Water-1	GW-1	19°22'18.37"N, 93°36'46.81"E	Yanbye Island	Secondary

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- Note:**
1. Because of the Standard Procedures and Guidelines for Water Quality Analysis, both up-stream/ downstream and High/low tide scenario is considered.
 2. Actual sample collection points will be subject to change slightly based on site conditions.

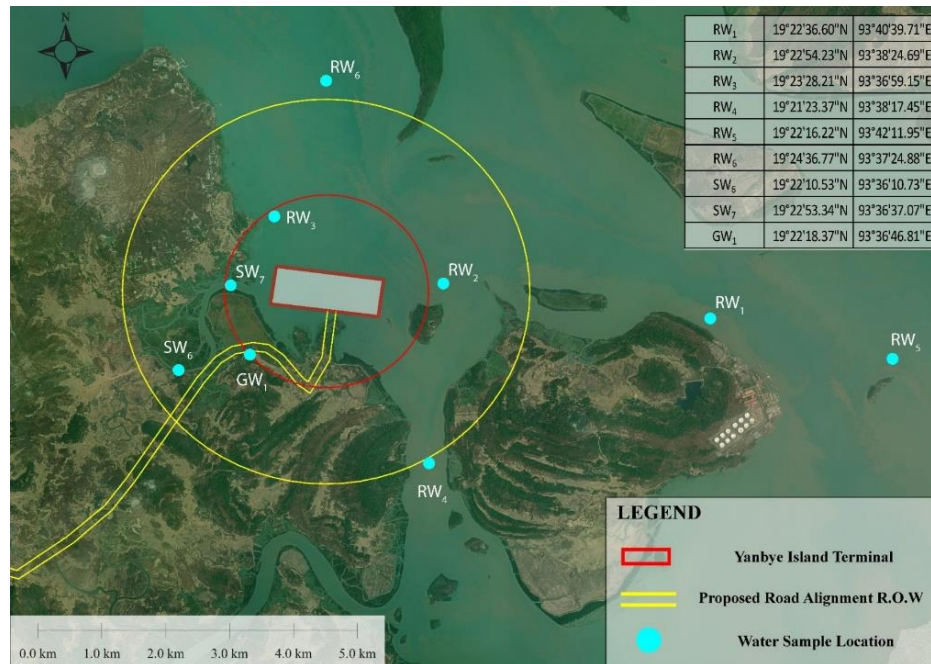


Figure ToR 2: Aerial Photo - Tentative location of Water Sample Collection Points for Baseline Environmental Water Quality Data for Yanbye Island Port Terminal of the Project

Table ToR 8: Air Quality Measurement Station Location for Ambient Air and Noise Baseline Data Collection and Pollutants Dispersion Modelling for Yanbye Island

Sr No	Sample Name	Sample Code	Coordinates		Zonal Relationship to Project Impact Area and Village Name	
1	Air and Noise Quality measurement Station-2	AQ/N ₃	19°22'20.28"N	93°36'47.84"E	Yanbye Island – Primary	Kyan Chein
2	Air and Noise Quality measurement Station – 3	AQ/N ₄	19°22'20.99"N	93°38'58.24"E		Within proposed R.O.W margin
3	Air and Noise Quality measurement Station - 7	AQ/N ₇	19°22'48.87"N	93°36'6.52"E	Made Island – Secondary	Sit Taw

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

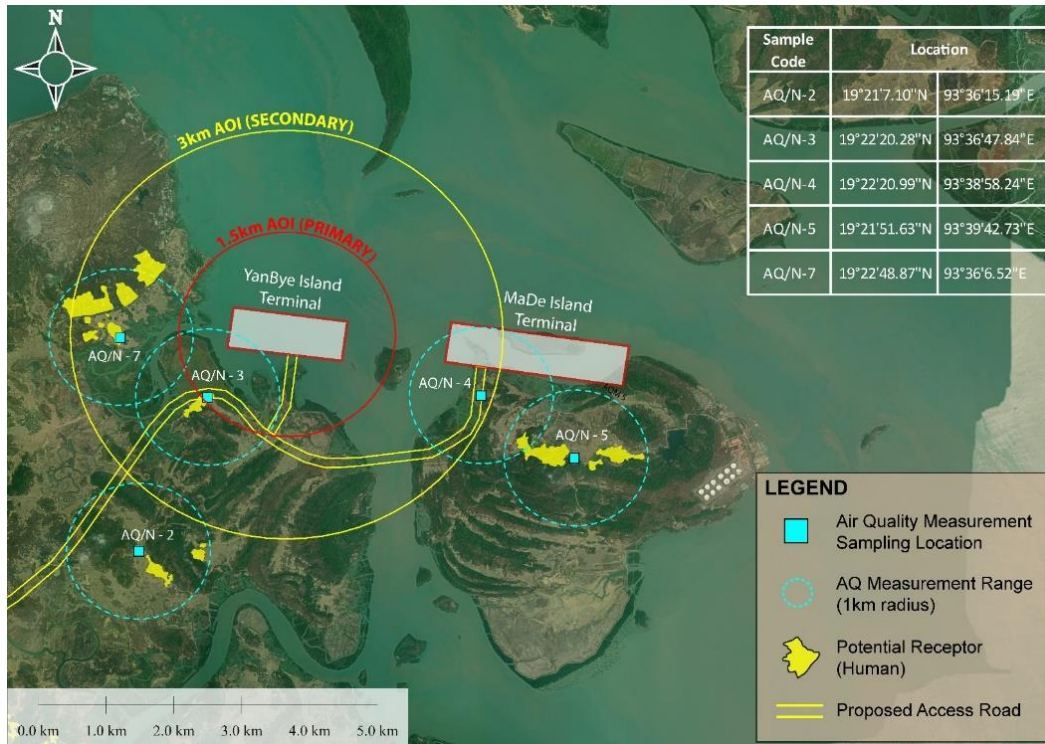


Figure ToR 3: Aerial Photo - Tentative location of Air and Noise Sample Collection Points for Baseline Environmental Ambient Air Quality Data for Yanbye Island Port Terminal of the Project

Table ToR 9: Marine Sediment Samples Baseline Data Collection for Yanbye Island Port Terminal of the Project

Yanbye Island Port Terminal of the Project					
Sr. No	Sample Name	Sample Code	Coordinates		Relationship to Project Impact Zones
1	Marine Sediment-5	BH-YN-05-U ₁	2142728N, 565606E	Yanbye Island	Primary
2	Marine Sediment-6	BH-YN-05-U ₈	2142728N, 565606E	Yanbye Island	Primary
3	Marine Sediment-4	BH-YN-08-U ₁	2143044N, 565135E	Yanbye Island	Primary

Note: 1. Actual sample collection points will be subject to change based on site conditions.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

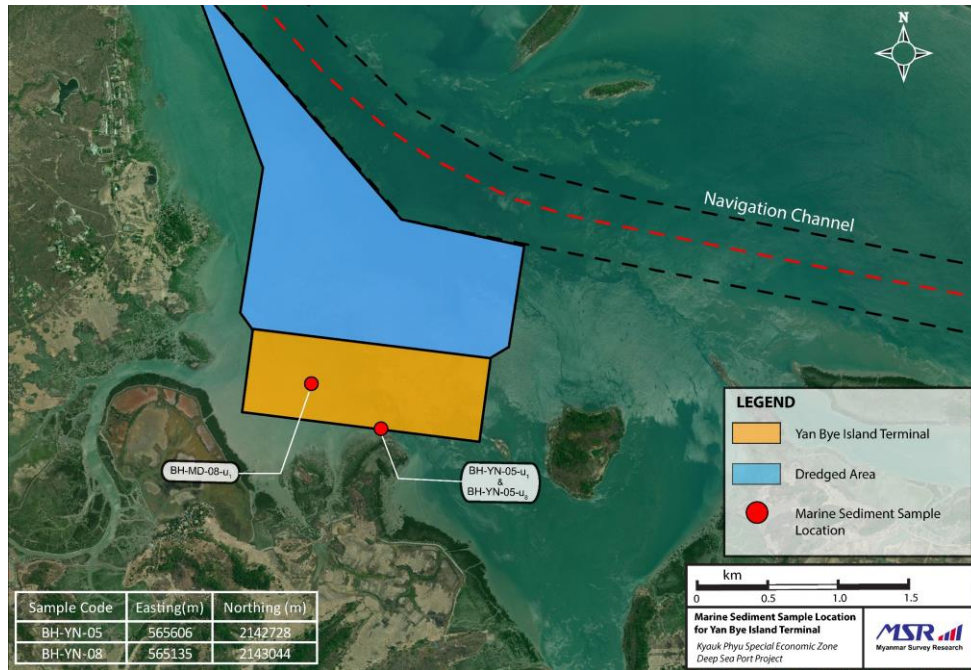


Figure ToR 4: Aerial Photo – Location of Marine Sample Collections for Environmental Baseline Data Collection for Yanbye Island Port Terminal of the Project

Research Methodology

Method Statement for Baseline Environmental Data Collection for Scoping and EIA

6.4.1.1 Soil

Sample volume and collection

Regardless of the origin of soil, 10 kg (36 lb) soil samples will be collected in airtight bags which have not been exposed to sunlight. Laboratory sampling for all parameters requires only five (5) Kg (18 lbs) samples for each point but doubling the sample volume in separate containers eliminates the chance of sample loss and ensures sufficient material for the sampling technician to perform triplicate measurement for individual parameters.

Soil samples will be taken at depths of 0.5 m and one (1) m below ground level using motorized augers to examine micronutrients and heavy metals, in both the dry and wet seasons. This baseline data will benchmark the current environment and provide data necessary for comparative analysis which will be conducted using data collected during monitoring periods throughout the Project’s lifespan.

With regard to sediment transport modelling of the seafloor and river floor, understanding soil texture and particulate distribution are important. Thus, soil sample from sea floor and river floor will be collected by using a suction pump hired from a river sand mining vessel and the crew in the area.

Storage and Logistics

As the proposed project site and sampling collections are in remote areas, storage and logistics are challenges in ensuring research quality assurance and control.

Airtight and black coloured plastic containers (6 -10 lit. Capacity) will be used to ensure better storage, validity, and longevity of the sample before transferring the samples to the laboratory for further processing.

In this regard, two logistics teams will be set up at both destinations (Kyauk Phyu and Yangon) to supervise samples collected in batch. Multi-mode freight forwarding (i.e., air, coastal, and land) will be used to ship samples from origin to destination.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Laboratory Analysis

The tasks for the laboratory will be sub-contracted to a reliable and dependable laboratory viz, the Soil and Irrigation Science Laboratory at the Department of Irrigation, Myanmar or ISO accredited private laboratories that provide services for soil mechanics and physiochemical analytical sampling services. The laboratory which will be used for soil analysis is within the Division of Land Use in the Department of Agriculture and Irrigation.

Data Processing

Following laboratory analysis of all soil samples collected, Myanmar Service Research Company Limited's environmental experts will further process and analyse the data to inform the baseline. The data processing, graphing and analysis will be performed using a combination of SPSS® software package, Originpro®, and Microsoft office® packages.

Data's processing outcomes will be further integrated into EIA processes through collaboration with allied physical environment specialists.

6.4.1.2 Water (Freshwater and Seawater)

The collection of water chemistry data for baseline environmental data collection includes a combination of on-site and laboratory sampling. Recommended parameters for on-site sampling will be adhered to by environmental specialists and the site team, and all parameters will be analysed at the laboratory. Therefore, portable sampling equipment and devices will play pivotal roles in inferential analysis, audit, and assessment.

Sample volume and collection

Water samples on land for the ground water and fresh water sources will be taken from one (1) m depth below surface level using a portable pump to examine physical, chemical, and pathological characteristics in both dry and wet seasons. In the case of river water of Made, Kyun river which has brackish characteristics, an additional sample will be taken from up to 15 m below the water surface. The sample discharged from dispenser pump will be collected in the water sample containers, then it will be forwarded to laboratory for analysis. Thorough rinsing to both the pipeline of the pump and containers will be ensured to avoid supernatant and cross contamination between sample from different water sources prior to sample collection into containers. All sample collection will be collected in conformity with field sample collection and monitoring guidelines.¹⁰⁵ Those parameters that will be analysed in the field will be conducted strictly following APHA standard methods¹⁰⁶ and equipment manufacturer guidelines. Trainings were delivered to the field technicians and experts by the product dealers.

The proposed project is required to collect water from different sources (i.e., reservoirs, creeks, rivers, bays, and from the sea). Four (4) litres samples will be collected for each point. Laboratory sampling for all parameters requires only two (2) litres for each point but doubling the sample volume in separate containers eliminates the chances of sample loss and ensures sufficient quantity for the sampling technician to perform triplicate measurement for individual parameters.

Water samples collected on land from ground water and fresh water sources will be taken from one (1) m depth below surface level using a portable pump in both the wet and dry seasons. This will allow examination of the physical, chemical, and pathological characteristics of the water in both seasons.

When samples are collected from different water sources, thorough rinsing of both the pump's pipeline and containers will be carried out to avoid supernatant and cross contamination between samples.

This baseline data will be used as a benchmark when undertaking comparative analysis with data collected from subsequent monitoring periods throughout the life of the Project. The data will be assessed against the National Emission Quality Guidelines (NEQG) and international standards.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

As the Project does not have persistent industrial effluent or wastewater discharge throughout Project lifespan, modelling for water quality is considered unnecessary.

Storage and Logistics

Good management practice for water sample collection will be ensured by using the logistics team's assistance. Dedicated glass bottles (two (2) L capacity) for water sample collection will be used for all water sample collection activities. To ensure standard room temperature, sample containers will be stored in polyurethane boxes when shipping them to the laboratory.

Laboratory Analysis

The tasks for the laboratory¹⁰⁷ will be sub-contracted to a reliable and dependable laboratory viz, Public Health and Science laboratory of the Department of Health, Myanmar or ISO accredited private laboratories that provide services for physiochemical and biological analytical sampling services.

Data Processing

Upon laboratory analysis of all water samples collected, Myanmar Service Research Company Limited's environmental experts will further process the data for further reporting of the baseline. The data processing, graphing and analysis will be performed by using a combination of SPSS® software package, Originpro®, and Microsoft office® packages.

The outcomes of the data processing will be further integrated into EIA processes through collaboration with allied physical environment.

6.4.1.3 Ambient Environment Quality (Air Quality)

Atmospheric baseline data collection will be conducted on preliminarily selected sites. Obtained air quality data will be retrieved directly from EPAZ HAZ Scanner to PC after monitored.

Field Data Collection

MSR consortium will set up two (2) air quality monitoring stations to measure all baseline data at designated locations for continuous monitoring 24 hours per day for seven (7) days, according to the schedule. It is recommended that a site meteorological tower for real time monitoring across all phases of the Project, be installed. The parameters for baseline data collection includes:

1. Dust and Particulate
 - a. PM_{2.5}
 - b. PM₁₀
2. Fugitive Gases
 - a. Carbon Monoxide (CO)
 - b. Nitrogen Dioxide (NO₂)
 - c. Sulphur Dioxide (SO₂)
 - d. Ozone (O₃)

Liaison and Logistics

The air quality measurement expert and the team will procure one (1) complete set (Haz scanner) air quality monitoring station and necessary sensors to supplement existing monitoring station equipment. Data will be collected by two (2) air quality monitoring stations and two air quality technicians and their teams, for the life of the Project.

Data Processing and Analysis

Raw data obtained from the field will be processed for further processing and verification. The data processing, graphing and analysis will be carried out by using the combination SKC HazScanner® Software package, SPSS® software package, Originpro®, and Microsoft office® packages.

The outcomes of data processing will be further integrated into EIA processes through collaboration with physical environment allied specialists.

¹⁰⁷ National Occupational and Environmental Health Laboratory and Iso-Tech Laboratory.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

6.4.1.4 Ambient Environment Quality (Noise/Vibration)

The noise/vibration data collection will be conducted on preliminarily selected sites for those parameter stated in Appendix 13 - C.3.

Field Data Collection

The company will set up two (2) noise/vibration quality monitoring stations to collect and measure all baseline data at designated locations, for continuous monitoring, 24 hours per day for seven (7) days, according to the schedule. The parameters for baseline data includes:

1. Noise dB(A)

Liaison and Logistics

The noise/vibration expert and the team will procure one (1) complete set (Haz scanner) noise quality monitoring station and necessary sensors, to supplement existing monitoring station equipment. Data will be collected by two (2) air quality monitoring stations and two air quality technicians and their teams, for the life of the Project.

Data Processing and Analysis

Raw data obtained from the field will be further processed and verified. The data processing, graphing and analysis will be performed by using a combination of SKC HazScanner® Software package, SPSS® software package, Originpro®, and Microsoft office® packages.

The outcomes of data processing will be further integrated into EIA processes through collaboration with physical environment allied specialists.

6.4.1.5 Resource Management – Waste Management

Waste Management at every stage of the Project is an important consideration for environmental compliance. Construction and demolition activities for Made Island Port Terminal of the Project development scheme, will contribute to the solid waste problem unless appropriately managed.

The anticipated solid wastes that will be produced include steel materials, concrete, wood, plastics, rubber, copper wires, dirt, and glass. Solid wastes from chemical products are a source of toxic metals, hazardous wastes, and chemicals. When released to the environment, the solid wastes can cause biological and physicochemical problems to the environment. Thus, solid waste analysis is an important component of the EIA process.

Analysis Approach

Various types of analysis will be applied based on the scope of application, focal waste stream and project properties so, it is very important to analyse the applicability of various construction waste assessment methods. A combination of analysis types including the Classification System Accumulation Method (CSA) and a Material Flow Analysis (MFA) is suggested for construction of the Yanbye Island Port Terminal of the Project. While the CSA method offers corresponding recycling benefits and disposal choices for different construction materials with different chemical characteristics and storage requirements, the combination of MFA and the weight-per-construction-area method helps in the estimation of the amount of construction and demolition waste this Project will generate. The outcomes of solid waste analysis will support the environmental impact assessments, development of environmental policy for hazardous substances, nutrient management in watersheds, waste management and for sanitation planning.

Data Acquisition and System boundary

Waste generation and analysis is based on quantification and empirical formulation in terms of rate per unit and the number of total units, and the quantity surveying and builder estimates for the Project are important for the waste analysis process which must be provided by the Project Proponent and contractors. The system boundary considerations for waste generation, provide for those generated during construction and operation of the Project. Types of waste include:

- i. Construction and Demolition (C&D) materials
- ii. Chemical waste
- iii. General refuse, and
- iv. Floating Refuse.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Data Processing and Analysis

Once data has been provided by the Project Proponent, it will be analysed using the STAN software package. STAN is the combination of all necessary features of MFA in one software product: graphical modelling, data management, calculations, and graphical presentation of the results.

The outcomes of data processing will be further integrated into EIA processes through collaboration with physical environment allied specialists.

6.4.1.6 Marine Sediment – Environmental Toxicity

Sample Volume, Collection and Number

Sample collection are referred to HATCH's suggested minimum Scope of the Sediment Sampling Program as Inputs for the ESIA. The instructions are mention below:

Contractor Instructions

The contractor shall collect sediment samples using a Large Penetration Test (LPT) sampler or equivalent method (with respect to sample disturbance) at the prescribed locations with the following criteria:

1. The sample shall not be collected immediately after sonic drilling.
2. The sample collected for the ESIA program will be distinct from and collected at different intervals from that collected for the geotechnical program (e.g., an additional designated sampling depth shall be added within the same borehole.)
3. Collect one sample near the top of the borehole (i.e., the near surface sample).
4. Collect one sample near the bottom of the borehole (i.e., the bottom sample; above bedrock). This sample must be collected at an elevation near -23m CD or within 1 to 2 m above bedrock. The sample must be sediment only, no rock is to be collected.
5. One sample must be collected at a midpoint elevation between the samples collected from 3 and 4.

Sampling Procedure

Samples can be collected using the method below. For further information, guidance such as the following may be referred to: *The British Columbia Field Sampling Manual* (Part D Solids; Government of British Columbia, 2020) or *Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment – Volume 1 Guidance Manual* (Section 10.4; Canadian Council of Ministers of the Environment, 2016) or similar.

- In advance of sampling, sampling materials (e.g., jars, cooler, etc.) should be requested from the analytical laboratory to ensure the appropriate type and size of sampling containers is used for each parameter. Bags, jars or other sampling materials should be labelled in advance.
- Use a new pair of nitrile gloves to collect each sample to reduce the potential for introducing contaminants.
- Upon retrieval, approximately 1 to 2 litres of sediment is to be transferred into a settling tray for initial inspection with a photograph of the initial conditions such as texture, colour, if sheens are present or other qualitative observations.
- This material is to be homogenized with a stainless-steel spoon or equivalent tool and photographed again.
- Add samples to pre-labelled sample jars/bags (jars/bags are to be provided by the lab).
- Samples should be labelled with a least:
 - ♦ Borehole and/or sample location identification
 - ♦ Depth of sample (in metres from surface of sediment or in geodetic datum if available)
 - ♦ Date and time of sample collection
 - ♦ Parameter(s) to be tested from the sample material in the container.
- Fill sample jars and containers per instructions from the analytical laboratory and note parameter-specific requirements (e.g., for AVS-SEM, fill jars completely with no head space remaining). If no instructions are provided, glass jars (250 to 500 mL) are typically used for each sample for metals, hydrocarbons, PCBs and AVS/SEM (i.e., this would be four separate jars for

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

each sample location/sediment interval to analyze these parameters). An additional large re-sealable bag or equivalent can be used for physical tests like texture and moisture.

- Ensure the lids are firmly closed or the bags are completely sealed.
- After collection, samples should be held in a cooler with ample ice (in sealable bags)/ice packs.
- A duplicate sample should be collected at one sample location for this sampling program.
- Samples will have to be shipped immediately by plane to the nearest accredited lab. Consult with the shipping company and laboratory to ensure that samples are received by the lab without delay and to minimize the holding time for analytical tests and at a temperature that is fit for those tests.
- General shipping procedures:
 - ♦ Pack ice pack with fresh ice packs/ice in sealable bags
 - ♦ Ensure bags of ice are placed at the bottom of the shipping container
 - ♦ Place samples upright in container and do not overfill
 - ♦ Arrange samples and ice to provide protection to containers
 - ♦ Use packing material to provide further protection and fill voids in shipping container
 - ♦ Complete chain of custody from and enclose it/place in a sealed bag within the cooler
 - ♦ Seal the cooler with heavy packing tape
 - ♦ Attach shipping label on top of cooler.

Note that samples are required to be received by the laboratory within 14 days of collection to reduce the potential for bias in results of certain parameters. Verify requirements with the selected lab.

Storage and Logistics

By using the logistics team's assistance and CITIC's GT Team supports, good management practice for marine sediment sample collection will be ensured. Collected sediment samples are stored in airtight and sunlight unexposed bags. To ensure standard room temperature, sample containers will be stored in polyurethane boxes when shipping them to the laboratory.

Laboratory Analysis

The tasks for laboratory¹⁰⁸ will be sub-contracted to a reliable and dependable international laboratory viz, public health and science laboratory of department of health, Myanmar or ISO accredited private labs that provide services for physiochemical and biological analytical sampling services.

Data Processing

Upon laboratory analysis for all marine sediment samples collected, environmental experts of Myanmar Service Research Company limited will process the obtained data for further processing and reporting of the baseline. The data processing, graphing and analysis will be performed by using the combination of SPSS® software package, Originpro®, and Microsoft office® packages.

The outcomes of data processing will be further integrated into EIA processes through collaboration with allied specialists of physical environment.

Assumptions

All baseline data collection is based on the conceptual proposal and Project proposal report. As providing alternatives is one of the requisites of EIA guidelines (Myanmar), all the indicative sample locations, size, and numbers are subjected to change as a result of changes to Project design and specifications.

At this point, baseline research design has been prepared in compliance with ECD guidelines. The guidelines focus on the merit of existing natural resources, topography, hydrologic settings, and the demographic profiles of the proposed Project site.

¹⁰⁸ National Occupational and Environmental Health Laboratory and Iso-Tech Laboratory.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Exceptions and Technical Limitations

Some of the sites are located in restricted areas (i.e., navy and defence services, corporate property), and application for approval to access the sites is mandatory. Apart from collecting samples and base-line data, it is not envisaged that access to these sites will be required.

As proposed baseline investigations involve both onsite sampling to obtain certain water parameters and laboratory sampling, no other technical or scientific limitations that could compromise research quality has been identified.

Modelling

The selection of environmental models for sediment transport, the dispersal of air pollutants and under-water acoustics will be developed for the Project. The selection of the correct model type and assumptions enables environmental EIA practitioners and stakeholders to comprehensively evaluate potentials impacts, will assist in developing practical mitigation measures for the monitoring plan and will address anticipated negative impacts generated from the simulation modelling.

6.4.2 Biological Environment Baseline Work Plan

The workplan covers:

- 1) Terrestrial Biological Environment Baseline Work Plan
- 2) Marine Biological Environment Baseline Work Plan

6.4.2.1 Terrestrial Biological Environment Baseline Work Plan

6.4.2.1.1 Terrestrial and marine survey range

Terrestrial biodiversity survey range - Biological survey area is divided into two: direct impact zone and indirect impact zone. Direct impact zone is assigned for three (3) km radius and indirect impact zone is for eight (8) km radius from the central point of the proposed project areas as the biodiversity in those areas will be potentially impacted as direct or indirect by the project.

Marine biodiversity survey range - Marine biodiversity (marine mammals, marine turtles and coastal birds or sea birds) survey area is divided into two: Direct impact zone is assigned for three (3) km radius and indirect impact zone is also assigned for ten (10) km radius as the biodiversity in those areas will be potentially impacted as direct or indirect by the project. In addition, approximately 26.6 km along the Thanzit river (upstream and downstream of the project area along the river) will be surveyed. This will cover the various marine habitats (e.g., open water, coastal mangrove, intertidal zone) and also include the shipping route/lane for marine mammals, marine turtles and coastal birds' study. If necessary, the proposed ship anchorage area, located about 26 km toward the sea from the project, will be identified as marine mammal survey area, and a 10 km circular range will be assigned for the survey as marine mammals, sea turtles and sea birds in this area will be potentially impacted as direct or indirect due to the shipping activities.

Target terrestrial flora survey: large trees, small trees, shrubs, herbs, climbers, bamboos and ferns

Target terrestrial fauna survey: Amphibians and reptiles, birds, mammals, butterfly and dragonfly

Target marine fauna survey: marine mammals, marine turtles and coastal birds

Ecological habitat assessment: terrestrial and marine ecological habitats (related with marine mammals, marine turtles and coastal birds)

Development of distribution map: marine mammal distribution map

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)



Figure ToR 5: Terrestrial biological sampling sites (with the related study of terrestrial plants and animals such as amphibians & reptiles, mammals, birds and butterfly & dragonfly within the assigned study range of direct and indirect impact zones) of Deep-Sea Port Project (DSP-1) of Made Island



Figure ToR 6: Biological sampling sites of marine surveys for marine mammals, coastal birds and marine turtles in Thanzit River and Ku La Bar Strait

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

6.4.2.1.2 Data Collection of Plant Species

The present proposed Project area has been divided into the direct impact zone and the indirect impact zone. The direct impact zone is assigned for 3km radius toward the land from the central point of Project. Plant collection techniques of taking photographs, flora measurements, leaf attachments, cutting, labeling and specimens press will be carried out for some unknown flora species to identify after field trip. The coordinate points of observed plant species will be recorded by a handheld Garmin GPS (GPS-map64s). According to the topographic factors of the survey areas, relevant sampling methods will be used to analyze the data of collected specimens from the survey areas.

Quadrat Sampling Method

A quadrat is a frame that is laid down to mark out a specific area of the community to be sampled. Within the quadrat frame, the occurrence of plants is recorded using an appropriate measure of abundance. It is used to estimate population abundance (number), density, frequency and distribution (Baxter, 2018).

In this survey, quadrates (with 20m x 20m) will be laid down in the direct impact zone and recorded the flora species with $\geq 10\text{cm}$ (DBH) to evaluate the plant important value index (I.V.I). While line transect method (70m length of LS) will be applied within the indirect impact zone to collect plant samples.

Line-transect method

This method can usually be accomplished fairly quickly and is a good rapid assessment for vegetation survey. In plant surveys, the species touching the transect-line (70 m) by plant parts of roots, stems, branches, and canopy were recorded and listed. In coastal strands, the survey area was defined as a distance of 100 meters inland from the shore, and within this distance, (70) meter lines were randomly set up. No. of line transects will be depend on habitats. That will be randomly set up to cover the different habitats within the survey area.

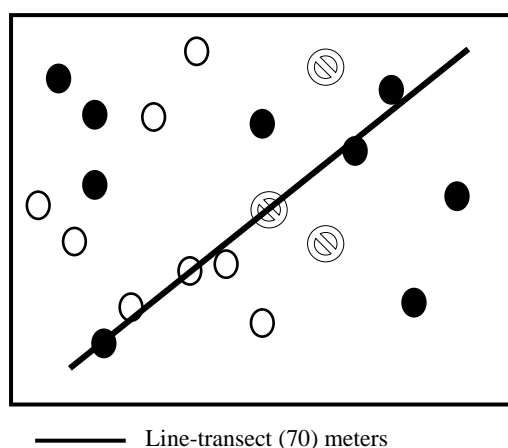


Figure ToR 7: Sample design for line-transect and data collection

6.4.2.1.3 Data analysis

Identification and IUCN status of observed plants

Observed plant species will be verified by using recorded field photographs of floral parts, barks and leaf characteristics. Some flora species will be directly verified by interviewing with local people in field. A plant guidebook of "A Checklist of the Trees, Shrubs, Herbs, and Climbers of Myanmar, Kress (2003)" will be used and referenced for botanical names and family names of recorded plants. Updated family and scientific names of plant species will be described by assessing the upgraded information from internet. Some unknown species will be identified based on recorded field photographs, field notes, collected samples by press and available literatures such as key to the families of the flowering plants, issued by available websites and literatures of Backer et. al. (1963), Dassanayake, M.D & W.D Clayton (2003), Gardner et al. (2000) etc. Classification on plant types of true mangrove species (M), mangrove associate species (MAS) and non-mangrove species (NMS) will be categorized by using a literature of "Mangrove Guidebook for Southeast Asia, 2007". The threatened levels of each recorded flora species

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

will be checked and examined by an available website from internet (<https://www.iucnredlist.org/>) and its Table (7) of Species changing IUCN Red List Status (2020-2021), pdf format.

Plant Important Value Index (I.V.I)

For small trees and trees, plant important value index (I.V.I) calculation is used to determine the overall importance of each species in the present community structures of the direct impact zone. In calculating this index, the percentage values of the relative frequency (%R. F), relative density (%R. D) and relative dominance (%R. Dm) are summed up together and this value is designated as the Importance Value Index or IVI of the species (Curtis, 1959).

(a) Relative density (%R. D)

Relative density is the study of numerical strength of a species in relation to the total number of individuals of all the species and can be calculated as:

$$\text{Relative density (\%R. D)} = \frac{\text{Number of individuals of the species}}{\text{Number of individuals of all the species}} \times 100$$

(b) Relative frequency (%R. F)

The degree of dispersion of individual species in an area in relation to the number of all the species occurred.

$$\text{Relative frequency (\%R. F)} = \frac{\text{Number of occurrences of the species}}{\text{Number of occurrences of all the species}} \times 100$$

(c) Relative dominance (%R. Dm)

Dominance of a species is determined by the value of the basal cover. Relative dominance is the coverage value of a species with respect to the sum of coverage of the rest of the species in the area.

$$\text{Relative dominance (\%R. Dm)} = \frac{\text{Total basal area of the species}}{\text{Total basal area of all the species}} \times 100$$

Remark: The total basal area was calculated from the sum of the total diameter (cm) of immersing stems. In small trees and trees, the basal area was measured at breast height (1.3 m).

6.4.2.1.4 Data collection of animals species, sampling and survey methods

Primary (Field observation data) and secondary sources (report, paper, notes and verbal report from various sources including relevant government departments etc.) will be used to gather the data and information during the survey.

To collect data and information of target study species for their presence in and around the Project area, study methods such as the direct observation method, the track and sign observation method and interviews will be used during the survey.

Point count survey and transect survey will be used depending on the habitat situations in the study areas. These methods allow the study to look at wider scope to establish the initial status of fauna diversity and habitats of the study area. The faunal occurrence and abundance in the survey areas will be investigated by means of visual encountering, photo recording and using questionnaires with hunters, fishers and local villagers. The faunal survey will categorize amphibian and reptilian fauna, avian fauna, mammalian fauna, and insects (butterfly and dragonfly) and vertebrate fauna. Global positioning points will be recorded in all survey areas.

Direct observation method

Observation will start at 6:00 am and end at 4:00 pm (total survey hour=10/day). Survey work will be undertaken by walking, boat and motor bike. Animals will be identified directly using both by sight and sound. Animals encountered where the location, habitat and abundance in a particular habitat or study site will be recorded during the survey. The animals will be also identified with visual and relevant

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

literature/field guide. Separate data sheet in each group of animals will be used to entry the observed data and information.

Track and Sign observation method

Animals can be identified indirectly by their tracks, scat or dung, and other signs. Tracks and signs include any kind of mark or disturbance left by the passing or activity of an animal. Animals will tend to take the easiest route of travel across a landscape unless they are being pursued / disturbed. They are frequently used and rarely changed (Prosekov *et. al.*, 2020).

Based on this regular moving behavior, transect searches method will be applied to collect information such as tracks and signs of wild animals. 100 m to 200m line-transects will be placed in a potential animal movement route may be crossing the water edge, swamp area and along the forest trails where a stretch of track is searched systematically to the tracks and signs in a set amount of time. There will be observed, measured, counted, recorded the coordinates on the tracks and signs (scats/dung, claw marks, rubs, tracks, etc.) left by animals including fresh one to approximately within seven days. The track-based survey datasheet will be used, it includes fields for both site and sign information. Site information includes location details, date, time etc. Sign information includes whether tracks scats /dung, claw marks, rubs, tracks, etc. and burrows recorded for each species.

Interview survey

Interviews are a widely used methodology in wildlife and conservation research/study. They are flexible, allowing in-depth analysis from a relatively small sample size and place the focus of research/study on the views of participants. The interviews in this study focused on gathering information on target study or specific species of distribution, abundance, habitats of conservation significance and threats. Interviews will be performed both in the field and at the villages in the survey area.

6.4.2.1.5 Detail survey methods

It includes set of survey animals such as amphibian and reptiles survey, birds (terrestrial and coastal) survey, mammals (terrestrial & marine) and bat survey, marine turtles and flying insects (Dragonfly and butterfly).

Amphibian and Reptiles Survey

For this survey, amphibian and reptile groups will include frogs and toads, snakes, turtles and tortoises and lizards. Specimens will be observed by the visual encounter survey method. Visual encounter method (Matthew et al, 2013) will be used to confirm the presence of a species in the area. Visual encounter survey (VES) is by definition a time-constrained method in which observers' sample for species richness and abundance along a line transect or a survey path (Crump and Scott, 1994). This survey type comprises active searching in potential places in the wet areas and near the stream and catchment area, under rocks and logs, among the bush including burrowing holes along the study routes

Frogs and toad species will be also confirmed by use of call classification method/Auditory surveys (Auditory surveys are very useful for estimating species richness of anurans. Night survey will be conducted whenever necessary. Male anurans in particular tend to be fairly conspicuous during breeding season when the use their mating calls for attracting females. These calls are species specific, so during the breeding season listening stations can be randomly selected along the breeding site to identify species presence and their relative abundance).

For some snake and lizards, it will be performed not only active search but also the skin sheds and remaining parts of body will be also collected to investigate their presence and threat status. Interviews with local residents will be conducted to get information including threatened species (IUCN red list species). Animals encountered during the survey will be recorded for abundance and habitat preference to access their population abundance and distribution.

For Marine turtle, the possible nesting sites will be investigated on the map and site visit will be taken during the survey. All turtle information including nesting and foraging, incidental caught in the fishing nets will be collected during the survey.

Sea turtle study focuses on nesting season (November to March) and migratory seasons (September to December) and (February to April). The information available from local fishermen and by-catch (no nesting sites can be found in the Project area) will be included in EIA report.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Bird Survey Method

Random point count method will be used for the terrestrial and coastal bird study. Survey will be focused on potential resting, foraging and breeding habitats as well as investigation of nesting sites, local migration route and regular flyway if specific or population of particular species aggregate there. Coastal birds will be observed in the intertidal zone and mangrove forest, mud flat, grass and coastal rock areas while forest birds will be searched for in the forest, scatter trees and shrubs, and ground in the Project area. For coastal bird study, low tide (food searching time) is emphasized than morning/late afternoon.

Surveys at low tide will be used to observe food searching birds while at high tide will be observed at both resting and food searching birds. Interview surveys with local residents will also be performed to confirm to the presence of birds including nocturnal birds and season fluctuation and migration in the Project area.

Photographs of birds will be taken by use of Tele-Camera (Nikon D 7200 and lens Tamaron 150-600). Birds will be observed by naked eyes and with binoculars (Nikon 10X40) and identified with the aid of the Field Guide book by Craig Robson, 2011 and Kyaw Nyint Lwin & Khin Ma Ma Thwin, 2003. Species identification, observed number/frequency/abundance and habitat utilization will be recorded at the same time during the survey. Unknown birds will be identified later by reference to photographs and literature. Migratory, raptor birds, coastal or sea birds and residents' birds will be also identified. Nocturnal birds will be also listed. IUCN Red list species and conservation status will be checked.

Mammal Survey

Terrestrial mammal: Combination of Direct observation method, line transect survey, track, sign observation method and interviews will be undertaken to survey on mammals in the field. Mammals will be observed along the line transect or survey routes in different habitat. Length of transect and number of transect will depend on habitat range. Observation of track and signs such as footprints, nest holes, and scats feeding signs in their natural habitats will be made to confirm their presence by use of field guide book for tracks and signs study. The remaining parts of body such as skin, spines, antlers and others will be collected in the field. In addition, the presence of the well-known mammal species (diurnal and nocturnal species) and threatened species will be confirmed by interviewing to local residents and checked with field guide book. No trapping method will be used in this survey. **Large mammals:** Distribution and presence of large mammals will be examined by conducting track and sign surveys. Sighting of prey species, tracks, scats, droppings will be made as data gathering in the field. **Small mammals:** The tracks and sign of small mammals will be observed along the proposed Project area. The small mammal species will be identified by means of field survey and questionnaire survey.

Marine mammals- boat-based survey will be conducted. Target marine mammals include dolphin, fin-less porpoise and dugong. Animals will be visually observed along the set of transect or specific survey point in order to cover the survey area. Survey is designed to cover terminal effective area and potential shipping route to investigate the distribution and abundance of survey species.

A distribution map or model will be developed by use of GIS technology, but it depends on field data availability. Development of distribution model of marine mammals require not only to use of modern application but also to get a plenty of species' data, long term monitoring data, information and calculation parameters of environment, weather and sea states. Survey will start in the morning and end at evening (8:00 am to 4:00 pm) through tide cycle by use of binocular and GPS.

Land based survey will be in cooperation as a part of survey. Photograph will be taken when observed the animals to get their district characters like a dorsal fin, tail fin and head and jaw for identification. Data sheet will be used to record specimen information and others including weather and sea states. Abundance and distribution of individual number will be recorded.

Flying mammals: Firstly, information will be collected through interviews for bat species and roosting areas. Bats will be observed during day time at potential roosting sites such as trees, forest, caves, old buildings and rock cliffs. Surveys will be focused on fruit trees and plantation areas for the fruit bat survey. Specimen will be recorded their abundance and distribution associated habitats by use of GPS and camera. Species identification will be made by use of field guide and literature. No trap and netting methods will be used in this survey if not necessary.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Flying insect: Butterfly and Dragon Fly Survey

Butterfly and dragon fly will be observed along the line transect or study route in a particular habitat such as nearby the stream, pond, at the edge of the forest, grass land, shrub and open areas to investigate their distribution and abundance status. Common species of butterfly and dragon fly will be identified by visual observation by use of field guide book in the field.

However, these flying insect samples will be collected by use of aerial insect net and some of them will be released immediately after morphological check and photography. Some will be collected as samples and will be packed in triangle paper for further identification. Species abundance and habitat preference will be investigated based on collected data for a particular species.

Data Analysis

Qualitative and quantitative methods will be applied to analyze the data from primary and secondary sources. Relative abundance of species formula and Encounter rate method will be used to indicate species abundance and diversity.

Relative species abundance is calculated by dividing the number of species from one group by the total number of species from all groups.

$$RA = TS/TP * 100$$

Where RA is the Relative abundance of species (%)

TS is a total number of species in an area

TP is the total sum of the populations of all species in the area

Encountered Rate method

Study animals (birds, mammals, amphibian & reptiles, fish and butterfly & dragonfly) were sampled, surveyed and analyzed by use of encountered rate to investigate their abundance status. Encountered rate for each species is equal to the individual recorded by an observer divided by observation time and multiplied by ten to give a result in unit's individuals recorded per ten hours of survey. This analysis will be done according to the method of Bibby, Jones and Marsden (2001).

$$\text{Encountered rate} = \frac{\text{Total number of individuals}}{\text{Number of hours}} \times 10$$

Encountered rate data is split into ordinal categories of abundance as follows:

Table ToR 10: Attributes of abundance category, abundance score and ordinal scale in the encounter rate

Abundance category	Abundance score	Ordinal scale
<0.1	1	Rare ®
0.1-2.0	2	Uncommon (UC)
2.1-10.0	3	Frequent (F)
10.1 – 40.0	4	Common ©
40.1+	5	Abundant (A)

Input Data and Assumption

Modelling will be developed based on the availability of the data.

6.4.2.1.6 Modeling Scenarios and Parameters

Animal distribution and abundance data and environmental data including weather parameters will be obtained by scientific study e.g., Line transect method. Distribution modeling will inform the impact assessment for the existing condition, construction to decommission phases.

For study of dolphin and porpoise, it will include the location and time, sighting details (including type of species, number of individuals), animal behaviors (bow-riding, leaping, Spy-hopping, milling and travelling etc.), weather and sea condition.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

For marine mammals (only dolphin), species distribution models will be used and developed with habitat mapping for management and conservation purposes.

Modelling will be developed using relevant software (for e.g., algorithm software). Species data, environmental variable and parameter, weather parameter and sea states will be included for the development of the model.

Modelling Software

IWC COMMON RESEARCH METHODS USED TO STUDY WHALES AND DOLPHINS

Species distribution models (SDM) use known locations of a species and information on environmental conditions to predict species distributions. SDM uses a variety of algorithms to estimate relationships between species locations and environmental conditions and predict and map habitat suitability (Franklin 2010).

The modelling process will be done by using Inverse Distance Weighted (IDW) interpolation (algorithm) in QGIS software (version 3.22.13). Sample points will be weighted during interpolation such that the influence of one point relative to another declines with distance from the unknown point.

Species Distribution Model

Species distribution modelling (SDM), also known as environmental (or ecological) niche modelling (ENM), and range mapping uses computer algorithms to predict the distribution of a species across geographic space and time using environmental data.

Species distribution model will be conducted for dolphin only. Baseline and secondary data will be used for species distribution model (SDM).

6.4.2.2 Marine Biological Environment Baseline Work Plan

6.4.2.2.1 Program Methodology

Preliminary survey and impact assessments will be carried out for marine biodiversity at the Project site and its associated environment. The work scope for the marine biodiversity study will encompass the following but marine mammals and turtles will be covered by terrestrial biodiversity team because some experts on that team are specializing these aspects:

- Fish diversity and coastal fisheries
- Sharks and Rays species occurrence
- Benthic fauna and mollusk communities and their distribution
- Plankton (phytoplankton and zooplankton) diversity and abundance
- Seagrass diversity, coverage and biomass
- Coral diversity and coverage
- Mangrove species diversity

The focus is on the above-mentioned components of marine biodiversity, due to the potential impacts by the proposed Project. Estuarine ecosystem is dynamic that could be affected not only by direct impact but also indirect ones such as turbidity caused by port construction and shipping activities and accidental oil as well as other spills cause during operational phase. The following boundary/scope of marine biodiversity were provided according to the expert judgment, primary and secondary data of Project vicinity. Although some areas are located in direct and indirect impact zones, we have to exclude these areas because Ministry of Defense, Myanmar (Navy) is prohibited or restricted for the purpose of national security.

There are three main seasons in Myanmar such as dry season (summer) or pre-monsoon (mid-February to mid-May), wet season (raining) or monsoon (mid-May to late October) and cool season (winter) or post-monsoon (late October to mid-February). The abundance and distribution of marine biodiversity such as phytoplankton, zooplankton, benthos, fish, sharks and rays could be fluctuated in temporally and spatially. Therefore, baseline survey of these biodiversity will be carried out during three seasons. While the others community of mangrove, coral reefs, mollusks and gastropods survey will be carried out only one season (especially pre-monsoon) because these ecosystems could not be dramatically altered in structure and composition throughout the year.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

The major source of impact that effect on phytoplankton and zooplankton communities could be attributed to the sedimentation caused by Project activities (both construction and operation phases). However, the assessment of outer area (other) of direct and indirect impact zones must be carried out for the monitoring purpose that provide as check list for initial/without Project activity period, because ballast water exchange could be major contributing factor of introducing alien/invasive species which can harm native biodiversity by competition in space and food as well as cause red tides (Harmful Algal Bloom).

Although coral reefs occurred vary far from the deep-sea ports (Terminal 1 and 2), these community could be impacted by traffic (close to the navigation channel). Seagrass, seaweed, mangrove, benthos, mollusks, gastropod, fish, sharks and rays survey will be conducted only in both direct and indirect impact zones of Terminal 1 and 2.

Table ToR 11: The overview of baseline data collection sites and number of stations

Field of Study	# of Station	Location
Phytoplankton and Zooplankton	6, 6	Figure ToR 8
Benthos, Mollusks and Gastropods	5	Figure ToR 8
Seagrass	2	Figure ToR 8
Coral	2	Figure ToR 8
Mangrove	6	Figure ToR 8
Fish, Sharks and Rays	6	Figure ToR 8

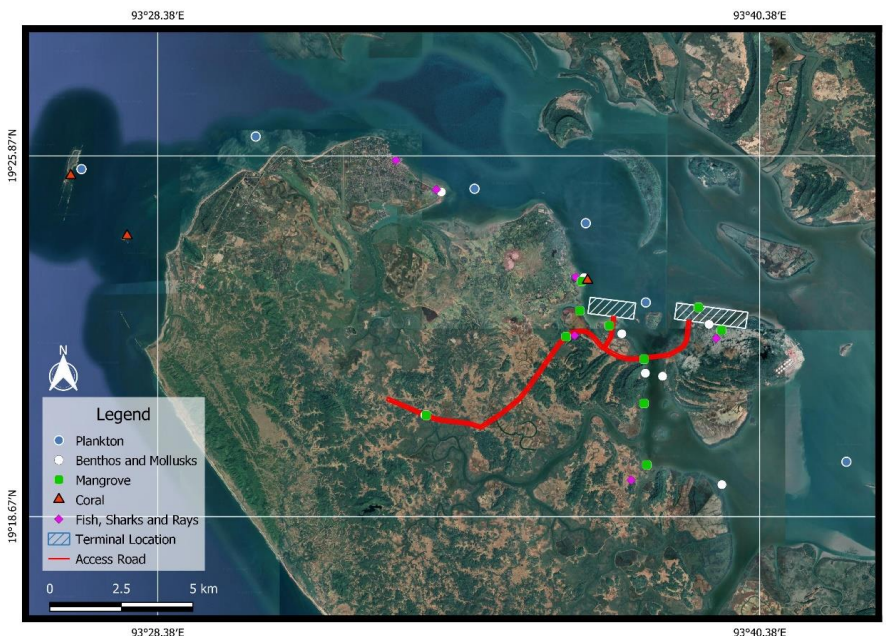


Figure ToR 8: Detailed description of marine biodiversity survey sites for EIA.

6.4.2.2.2 Phytoplankton & Zooplankton

Plankton samples will be collected from seven different stations. To obtain qualitative and quantitative data of both phytoplankton and zooplankton, the surface water column will be hauled for 5 minutes with a standard plankton net (#25 µm: phytoplankton, #100 µm: zooplankton) with the calibrated T.S.K flow-meter. Following filtration, samples will be fixed with a five (5) % formaldehyde solution (Thronsdon 2010). A Sedgewick-Rafter counting chamber will be used for cell enumeration under a compound microscope (Nikon Eclipse E200) using 10X objective. Cells will then be counted following the methods of Le Gresley and McDermott 2010 and Guillard 2003. The Sedgewick-Rafter slide has a volume of one (1) mL with the base of the cell being divided into 1,000 squares (50 rows by 20 rows), each representing 1/1,000 of the volume of the slide. To obtain a final result expressed as cells L⁻¹, the following equation

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

is used to calculate the multiplication factor (F). F is dependent on the number of squares of the base of the cell counted during the analysis.

$$\text{Density (no. of organisms/m}^3\text{)} = \frac{(n)V_s}{V_m}$$

Where: n = Average number of organisms in subsample (1ml), Vs = Volume of plankton sample (ml) and Vm = Volume of seawater sampled by the net (m³)

Species diversity of phytoplankton was calculated using the Shannon-Weiner diversity index H' (Shannon, 1948) along with species evenness index J' (Pielou, 1966) and Margalef's Species richness SR (Margalef, 1951).

$$H' = -\sum p_i \ln p_i$$

where pi = proportion of the ith species, ln = natural logarithm

$$p_i = n_i/N \text{ (Omori and Ikeda, 1984)}$$

$$SR = (S-1)/\log_n N$$

where S = total number of species and, N = total individuals present in the sample

$$J' = H'/\log_n S$$

where S = total number of species and H' is the Shannon-Weiner Diversity Index

6.4.2.2.3 Seagrasses

The species occurrence of seagrass (*Halophila beccarii*) will be described in EIA report because a few patches of this species was recorded during the survey..

6.4.2.2.4 Benthos, Mollusks and Gastropods

Samples will be collected to investigate the benthic invertebrate community using random quadrat sampling. In the intertidal zone, 20x20 cm quadrats will be placed and dug to a depth of a few centimetres. For data precision there will be at least 5-10 quadrats established at each sample station. Most biota in the subtidal sediments will be collected with Van Ekman grab samplers. Obtained sediment samples will be placed on sieves (0.5 mm mesh size) and washed with seawater and benthic invertebrates will be collected using forceps and preserved with a 5% formaldehyde solution. Identification will be conducted using a compound microscope. These samples will be transported to the laboratory (Department of Marine Science, Myeik University) for further analysis (species identification and calculation of abundance and diversity).

Bivalves and gastropods samples will be photographed around the benthos sampling sites by randomly and some samples will be fixed with alcohol and transported to laboratory (Department of Marine Science, Myeik University) for the species identification.

6.4.2.2.5 Coral Reefs

A graduated tape measure will be laid along a constant depth and reef habitat. There are 3-5 (replicate) transects of 20 m length at each of reef crest will be established between 3 to 5 meters depth by Group A (2 divers) with Self-Contained Underwater Breathing Apparatus (SCUBA). Reef fish data will also be obtained before transecting is established. Point Intercept Transect (PIT) method will be conducted by Group B (2 divers) for substrate type such as hard coral, soft coral, algae, rock, sponge, and others, based on visual census in every 0.25 m on each transect and take photograph using a digital camera (Olympus TG-5) with underwater housing as well as GoPro hero 7 and 9. In each dive site, photographs of every coral species will be taken for the further identification (one diver). Fish species sighted within 5 m belt of the transect line will be recorded on waterproof paper as divers swam slowly along the line. The number and estimated size-category of each species will also be recorded. The coverage (%) of substrate types as well as fish biomass data will be analysed by using MERMAID online platform (<https://dashboard.datamermaid.org/>).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

6.4.2.2.6 Fish, Sharks and Rays

Samples will be collected from fishers while they are fishing in the survey area. Moreover, the fish survey will be carried out by Marine Biodiversity Team at the nearest place (market, landing sites) to the Project area to access the local fishery. Interviews will also be carried out with fishermen and fisher folks to get information about fish species, commercial status, seasonal occurrence and breeding season around the Project footprint. Samples will be recorded with digital camera during the survey. Identification will be carried out using FAO (2012) and Fishbase 2015. An assessment of fish habitat would be made for the ESIA report.

6.4.2.2.7 Mangrove

Mangrove habitat assessments will be carried out both direct and indirect impact zone of Project vicinity. Samples will be recorded with camera and some live samples will be collected for further identification. In each site, a transect line will be established that perpendicular to the coast and measured main stem diameter at breast height (minimum diameter of 7 cm at breast height, typically 1.3 meters above the ground) in each 10x10 m plot (10 m apart between the plots). Species occurrences will be recorded by field notebook as well as digital camera. Sampling was carried out during low tide. The intent of the study is to get a representative sample of trees or a smaller scale. The main objective of the study is to identify the species diversity and basal area of mangrove. Blue Carbon will not be measured. But species diversity and plant important value index (IVI) will be measured. Extents of mangrove habitat will be confirmed in the field and mapped as part of the results of the field investigation.

Note. Species diversity such as Shannon diversity index (H'), along with Pielou's species evenness index (J') and Margalef species richness (d) for the phytoplankton, zooplankton, benthos, and mangrove will be calculated using Primer 7 (7.0.21) from PRIMER-e statistical software. Data transformations will be accomplished by using square root and Bray-Curtis similarity will be used to calculate similarity matrix between groups. The status of IUCN red list for each species was described based on the <https://www.iucnredlist.org>.

6.4.2.2.8 Species Distribution Maps

The distribution model for phytoplankton and zooplankton will be accomplished by generating an Inverse Distance Weighted (IDW) interpolation of a point vector layer using QGIS. Sample points will be weighted during interpolation such that the influence of one point relative to another declines with distance from the unknown point you want to create.

Table ToR 12: Detailed description of location and period for marine biodiversity survey

Biodiversity	Location	Frequency
Phytoplankton & Zooplankton	1) Made island 2) Yanbye island 3) Shipping lane	Three (3) studies (pre-monsoon, monsoon and post-monsoon)
Seagrasses	1) Yanbye island	One (1) study (post-monsoon)
Benthos	1) Made island 2) Yanbye island 3) Shipping lane 4) Access Road and Bridge	Three (3) studies (pre-monsoon, monsoon and post-monsoon)
Molluscs and gastropods	1) Made island 2) Yanbye island 3) Shipping lane 4) Access Road and Bridge	One (1) study (post-monsoon)

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Biodiversity	Location	Frequency
Coral Reefs	1) Shipping lane	One (1) study (post-monsoon)
Fish, Sharks and Rays	1) Made island 2) Yanbye island 3) Shipping lane	Three (3) studies (pre-monsoon, monsoon and post-monsoon)
Mangrove	1) Made island 2) Yanbye island	One (1) study (post-monsoon)

6.4.3 Social Environment Baseline Work Plan

The workplan covers:

- 1) Socio-Economic Baseline and Household Survey Work Plan
- 2) Health Baseline Work Plan
- 3) Cultural Baseline Work Plan
- 4) Human Rights Impact Assessment Work Plan
- 5) Fishery Livelihood Impact Assessment Work Plan



Figure ToR 9: Villages located in the Inner Zone where Social Environment Baseline will be collected

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

The figure above shows the locations of the villages that are potentially affected by the Project activities. Social Environment Baseline will be collected in those villages and the list is shown in the Table below.

Table ToR 13: List of the potentially affected villages due to three projects which are in the inner zone in proximity to the Project sites

Sr. No.	Village	Village-tract	Location	Project under assessment		
				MIT	YIT	ARB
1.	Ywar Ma	Made Kyun	Made Island	■		■
2.	Kyauk Tan	Made Kyun	Made Island	■		■
3.	Prain	Made Kyun	Made Island	■		■
4.	Pa Htain Se	Made Kyun	Made Island	■		■
5.	Kyauk Hmaw Gyi	Made Kyun	Made Island	■		■
6.	Sit Taw	Sittaw	Yanbye Island		■	
7.	Kyan Chein	Sittaw	Yanbye Island		■	
8.	Say Maw	Sittaw	Yanbye Island		■	
9.	Thit Poke Taung	Sittaw	Yanbye Island		■	
10.	U Gin	U Gin	Yanbye Island			■
11.	Htaunt Chaung	U Gin	Yanbye Island			■
12.	Ku Lar Bar Taung	U Gin	Yanbye Island			■
13.	Thapyu Taung	Kyat Tein	Yanbye Island			■
14.	Kyat Tein	Kyat Tein	Yanbye Island			■
15.	Tha Hpan Khar	Kyat Tein	Yanbye Island			■

MIT: Made Island Terminal
YIT: Yanbye Island Terminal
ARB: Access Road with Bridge

6.4.3.1 Stakeholder Engagement (KII and FGD) and Socio-Economic Baseline Household Survey Work Plan

6.4.3.1.1 Methodology

Key informant interviews and Focus Group Discussions (Investigation Stage)

After reviewing the findings from the interviews, workshops and PCMs in the Scoping Stage, it is found that the stakeholder groups directly affected are farmers / cultivation and fishers (boat owners) and fishers (casual workers) and dealers of rice and other crops and marine produce are indirectly affected. Therefore, the schedule in the Investigation Stage is mainly focused on these groups.

In addition to these groups, the groups in Kyauk Phyu Township which are still left for interviews such as town elders, ward administrators, political parties and government departments/ enterprises are also included in the schedule for the Investigation Stage.

In the ESIA Investigation Phase, it has been scheduled to form six data-collection teams: 2 (two) each for KIIs and FGDs and 1 (one) each for health and safety and cultural heritage as follows:

Table ToR 14: KII interview and FGD discussion teams scheduled to be formed

Team No.	Team members		Responsible for:
Team 1	Leader	Note-taker	KII
Team 2	Leader	Note-taker	KII
Team 3	Leader	Note-taker	KII
Team 4	Leader	Note-taker	FGD
Team 5	Leader	Note-taker	FGD
Team 6	Leader	Note-taker	FGD

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

The following table shows the completion in the Scoping Stage and schedule for the Investigation Stage of KIIs and FGDs:

Table ToR 15: Update and schedule of interviews (KIIs and FGDs)

Sr. No.	Stakeholder group	No of interviews				Overall schedule	
		Completed (Scoping)		Scheduled (Investigation)			
		KII	FGD	KII	FGD	KII	FGD
Rural villages (Inner and Outer Zones)							
1.	Village elders (Village profiles)	15	0	0	0	15	0
2.	Village administrators	14	0	0	0	14	0
3.	Farmers / cultivators	6	3	6	5	12	8
4.	Fishermen (Casual workers)	5	2	8	9	13	11
5.	Fishermen (Boat owners)	5	0	3	0	8	0
6.	Livestock breeders	0	0	0	0	0	0
7.	Casual workers (other livelihoods)	0	0	0	3	0	3
8.	Minority ethnic groups	3	0	2	0	5	0
9.	Vulnerable groups	5	0	5	0	10	0
10.	Youths	2	1	0	4	2	5
11.	Women	3	1	0	4	3	5
Kyauk Phyu Township							
12.	Town elders	9	0	3	0	12	0
13.	Political parties	2	0	3	0	5	0
14.	Civil Society Organizations	8	0	4	0	16	0
15.	Non-governmental organizations	2	0		0		
16.	International NGOs	2	0		0		
17.	Religious leaders	3	0	0	0	3	0
18.	Fishermen' association	3	0	0	0	3	0
19.	Money lender	1	0	0	0	1	0
20.	Youth associations	2	0	0	0	2	0
21.	Ward administrators	8	0	0	0	8	0
22.	Government departments	8	0	8	0	16	0
Rural villages and Kyauk Phyu							
23.	Rice/other crops dealers	0	0	6	0	6	0
24.	Fish traders	0	0	9	0	9	0
25.	Health	14	2	3	0	17	2
26.	Culture	7	0	2	0	9	0
Total:		127	9	62	25	189	34

Livestock breeders: In the villages, as livestock breeding is carried out only on a manageable scale, questions for livestock breeders will be combined with those of farmers (Cultivators).

Key Informant Interviews (KIIs)

There are 182 KIIs to be conducted overall, and of them, 127 interviews were completed in the Scoping Phase and 55 are left.

As profiles of the all 15 villages have been collected, KIIs for this will not be conducted but some data will be confirmed with the village administrators.

In the investigation stage, KIIs will be focused on the following groups:

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

1. Farmers and fishers of the 15 villages
2. Traders / dealers of agricultural and marine produce in Kyauk Phyu Township
3. Ward administrators
4. Town elders
5. Political parties
6. Government departments / enterprises

The following table shows the places where KIIs for various stakeholders will be conducted:

Table ToR 16: KIIs scheduled for the Investigation Phase

takeholder group	Inner Zone Villages														Outer Zone Villages	Downtown Kyauk Phyu	Total
	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge							
	Ywar Ma	Prain	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Say Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar			
Farmers		1						1						1	3		6
Fishermen			1		1			1	1				1	1		2	8
Boat owners				1		1				1							3
Vulnerable group	1	1						1						1	1		5
Minority ethnic group			1				1										2
Town elders																	3
Political parties																	3
Rice / other crops trader	1					1						1					3
Fish trader		1						1					1			2	4
CSO/INGO																	4
Government																	8
Health	1					1						1					3
Culture												1	1				2
Total:	3	3	2	1	1	3	1	3	2	1	0	3	3	2	2	7	25
	10					9				11					7	25	62

Adm: Administrator

Focus Group Discussions

The overall schedule of FGDs is 34. Out of it, 9 was completed in the Scoping Stage, leaving 25 FGDs. Altogether 25 FGDs are scheduled for the Investigation Stage.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

The following table shows the places where FGDs for various stakeholders will be conducted:

Table ToR 17: FGDs schedule for the Investigation Phase

Stakeholder group	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge					Outer Zone villages	Total	
	Ywar Ma	Prain	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Say Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar			Tha Pyu Taung
Farmers/Livestock			1					1					1			2	5
Fishermen	1	1				1	1				1	1				3	9
Other livelihoods				1					1						1		3
Youths	1					1				1						1	4
Women			1				1				1					1	4
Total:	2	1	2	1	0	2	2	1	1	1	2	1	1	0	1	7	25
	6					6				6					7	25	

6.4.3.1.2 Socio-Economic Baseline Household Survey

The Socio-Economic Baseline Household Survey will be conducted by a separate team, composed of permanent and part-time staff members of the Social Research Department of MSR. SEBHS will conduct the survey as follows:

Methods: Quantitative and qualitative

Quantitative:	Face-to-face interviews (CAPI)	
	Census:	1,936 HHs (15 villages in inner zone)
	Sampling:	1,000 HHs (Outer zone villages) (20 HHs x 50 sampled villages)

Schedule for Census Survey to be conducted by SEBHS team

The following table shows the number of census units (households) in the inner zone 15 villages:

Table ToR 18: Census to be conducted by SEBHS team in inner zone

Sub-project	Sr. No.	Village	Census units (No. of households)
Made Island Port Terminal of the Project	1.	Ywar Ma	178
	2.	Prain	346
	3.	Kyauk Tan	200
	4.	Kyauk Maw Gyi	52
	5.	Pan Htain Se	36
Total:			812
Yanbye Island Port Terminal of the Project	6.	Sit Taw	119
	7.	Kyan Chein	105
	8.	Say Maw	243
	9.	Thit Poke Taung	146
Total:			613
15-km Access Road & Bridge	10.	Htaunt Chaung	59

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Sub-project of the Project	Sr. No.	Village	Census units (No. of households)
	11.	Ku Lar Bar Taung	118
	12.	U Gin	171
	13.	Kyat Tein	130
	14.	Tha Hpan Khar	17
	15.	Tha Pyu Taung	42
	Total:		537
	All total:		1,962

Schedule for Sampling to be conducted by SEBHS team in outer zone

In the outer zone, 50 villages will be sampled from among the total number of villages. In each village, there will be 20 households sampled for interview. So, the total number of samples in the outer zone will amount to 1,000.

Detailed schedule will be drawn up towards the Investigation Stage.



Figure ToR 10: Locations of 50 sample villages and wards in the Outer Zone where Social Environment Baseline will be collected in Kyauk Phyu Township

6.4.3.1.3 Government engagement (Investigation Phase)

Depending on the extent of involvement in the Project and with the directly affected persons, the following departments/enterprises have been considered for KIIs in the Investigation Phase:

- 1) Department of Agricultural and Land Statistics Department (District)
- 2) Department of Fishery (Township)

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 3) Department of Inland Water Transport
- 4) Department of Marine Administration (District)
- 5) Department of Border Areas and Ethnic Peoples Development (District)
- 6) Myanmar Port Authority (District)
- 7) Department of Rural Development (Township)

6.4.3.2 Health Baseline Work Plan

6.4.3.2.1 Methodology

Baseline data collection

- 1) Internet-based baseline literature search, review, and analysis.
 - Review literature and other reports on the potential health effects that may arise from large port construction projects and road and bridge construction reports. Special interest will be paid to the potential effects on island and coastal communities.
 - Identify location of other projects in the region which may contribute to cumulative health social impacts over time
- 2) Evaluating of data from socio-economic baseline household survey
 - Socio-Economic Baseline Household Survey team will conduct a comprehensive baseline study. Health data obtained from the survey will be evaluated for HIA.
- 3) Collect health data and vital statistics available from electronic Health Management Information System, eHMIS Myanmar.
- 4) In conjunction with Stakeholder engagement team, HIA team will collaborate consultation with government officials, conservation organizations and local communities to help -
 - Provision of secondary data relevant to the Project, such as poverty, business opportunities, culture, natural disaster, and climate
 - identify key biodiversity impacts including those with linkages to local livelihoods, social, and health issues.
 - Identify the population subgroups (villages, families, parties, and individuals) that may be differently affected by the Project.
 - Identify stakeholders and key informants and determine how the HIA team will engage with stakeholders
 - HIA team will collaborate with District Medical Officer, Township Medical Officer, Health care Professionals from public private sector, Basic Health Staffs such as , Health Assistants, Lady Health Visitors, midwives, Auxiliary midwives, Public Health Supervisors form Rural health Community in order to receive Health Profiles, health indicators such as, population growth rate, birth rate, infant mortality rate, maternal mortality rate, abortion rate and other health related background information and baseline data of Public Health Infrastructure
- 5) Baseline measures of key social parameters will be established by quantitative method and qualitative method to assess environment, social and health impacts and people perceptions and lessons learned

6.4.3.2.2 A field assessment

HIA team will visit the Project sites to review of each Project location and meeting with stakeholder to conduct -

- Key informant interviews (KII)
- Focus group discussions (FGD) with different community groups

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Key informant interview and focus group discussion

KII and FGD of HIA will be performed concurrently with the SIA. Hence, inviting key informants, identifying vulnerable, disadvantaged groups, determining the number of events, and schedule of the KIIs, FGDs, Workshops and Public Consultation Meetings (PCMs) will be determined through joint planning. With the arrangement of the Ward and Village Tract administrators and their staff, vulnerable and disadvantaged groups will be invited and interviewed. .

Similarly, FGDs will be held with the assistance of Ward and Village Tract administrative office in inviting participants. Name and general information of all the attendees will be registered.

Detail schedule of KII and FGD are described in SIA work plan.

In KII, the interviewers will make clear description about the Project.

- Provide a summary of the proposed Project (each of the three sub-projects) in sufficient detail for stakeholders to have a clear understanding of the Project and to elicit an adequate response. The explanation will be supported by illustrations and a map.
- Health related interviews will be using open-ended question to facilitate the identification of the range of potential impacts. The Interviewer will ask:
 - about health, traditional marine / land resource use of the community
 - in respondents' opinion what are the main social, health impacts, and risks of proposed project?
 - if there are any questions / comments about the Project
 - are there any existing programs that the Project could link with?
- The responses of interviewee will be recorded as primary data
- Ensure avoiding the need to recontact the same individual over and over

In FGD procedure after provision of a summary of the proposed Project (each of the three sub-projects)

- Discussion on potential impacts (potential impacts and actions of the Project that leads to human health impacts are listed in Table 2-2)
- The audience will be asked:
 - How do residents think the impact could affect their health and others?
 - Do the residents think the management / mitigation measures will be effective?
 - Do residents propose any other management / mitigation measures?
- Discussion on communication – Distribute leaflet and explain how to communicate with Project.
- Which groups might be hard to reach with information (e.g., illiterate, disadvantage group)? How could we best reach these groups?
- What would be the easiest way for them to contact the Project and make a complaint?
- What do they think the best way for Project Proponent to raise awareness in the community?
- Comments, concerns and perceptions will be registered
- Attendees will be encouraged to attend public consultation event

6.4.3.3 Cultural Baseline Work Plan

6.4.3.3.1 Methodology

- An assessment of the proposed Project area will be carried out to identify cultural heritage items and traditional historic places.
- A desktop review of archaeological and historical data such as manuscripts, traditional literature, chronicles will be undertaken before starting field work to determine the likelihood and incidence of cultural and historical items and their location.
- Oral interviews will be undertaken to supplement this data analysis and to enhance understanding of the site's cultural and historical context and that of the surrounding areas and to identify items not identified during the desktop review.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- Field work will be undertaken to locate and describe the cultural and heritage items, verify their continuing existence. Potentially the field work will identify further historical and cultural heritage.
 - **Rapid appraisal** of the archaeological resources involves the collation and review of existing and easily accessible data. It includes the review of the available national, provincial or local registries and contact with local cultural heritage authorities
 - **Desk-based studies** these are more in-depth studies than a rapid appraisal and involve contact with different sources of information and the analysis of available documentation. Types of available documentation that could be used in desk-based studies include; international, national, provincial and local registries or databases; old maps; aerial photographs and satellite imagery, old and recent; photographs; books, newspapers, pamphlets, scientific articles, scientific reports, etc.; parish and estate records, old plans
 - **Aerial photographs and satellite imagery** these are an important source of data. Earthworks are often more easily recognised and interpreted from the air than from the ground
 - **Interviews with communities** including non-governmental organizations (NGOs) and individuals, provide local and traditional knowledge about cultural heritage and how it is valued by communities
 - **Field survey techniques**, including geophysical techniques, fieldwalking, test-pitting, machine trench digging and earthwork surveys. (Not all of these techniques will be applicable in all circumstances)

The resulting report will provide detail of the historical and cultural items present on the potential project site including an evaluation of the significance of the items located.

6.4.3.3.2 Data Collection

The Cultural Impact Assessment team will use its own KII questionnaires: (1) KII for local community, (2) Government departments and (3) Associations. Data collection will not be confined only to the villages in the above table, interviews will also be conducted in Kyauk Phyu and other places like Yangon.

Data will be collected together with the SE-SIA team members.

The following is a checklist of the tangible and intangible cultural items:

6.4.3.3.3 Tangible culture (Checklist)

1. Religious buildings

- (a) Buddhist monasteries
- (b) Buddhist temples
- (c) Community Preaching Halls (Dhammayone)
- (d) Buddhist Pagodas
- (e) Buddha Images (Statues)
- (f) Sacred tree (Bodhi tree or banyan tree)
- (g) Christian places of worship (cathedral, church, etc.)
- (h) Mosques
- (i) Hindu temples
- (j) Buildings of other faiths (Animism, Jainism, Taoism, etc.)
- (k) Shrines of guardian spirits or tree of guardian spirits
- (l) Religious land plots (on which vegetables are grown)
- (m) Religious precincts
- (n) Buddhist Ordination Hall
- (o) Insight meditation tunnel
- (p) Insight meditation cave

2. Monuments

- (a) Historic monuments (e. g. Independence Monument)
- (b) Statues of prominent persons

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

- (c) Historic buildings (Edifice housing Stone Inscriptions)
- (d) Archaeological sites
- (e) Museums
- (f) Antiques
- (g) Works of art and artifacts

3. **Archaeological remains, both above and below ground:** these include buried remains as well as standing buildings, and archaeological sites as well as individual objects and artefacts.

4. **Historic buildings and sites:** individual or groups of separate or connected buildings, both in terms of their architecture and their setting or place in the landscape.

5. **Historic/cultural landscapes:** works of human beings or the combined works of nature and humans. Such areas may be of historic, aesthetic, ethnological or anthropological interest (residential gardens and community parks, rural communities, institutional grounds, cemeteries, battlefield)

6. **A cultural heritage asset's setting:** that is its relevant surroundings; settings have physical factors, which can be changed by a Project, but it is the effect of these changes on the character and value of the cultural heritage asset that is assessed; context is an aspect of setting where a relevant aspect of knowledge, belief or relationships may not be immediately visible or audible

7. **Others**

- (a) Cemeteries (Historic) (e. g. of fallen soldiers)
- (b) Cemeteries (of different faiths) (e. g. Muslim and Christian Cemetery)
- (c) Sacred sites, important both in themselves and through the traditional rituals and practices that they support
- (d) Lands and waters traditionally occupied or used by indigenous and local communities.

6.4.3.3.4 **Intangible culture (Checklist)**

- (a) Beliefs
- (b) Traditions
- (c) Customs
- (d) Values
- (e) Skills
 - Manufacture of handicrafts
 - Making works of art
 - Making musical instruments
 - Performing arts
 - practices of communities embodying traditional lifestyles
- (f) Language (e. g. Native Rakhine language)
- (g) Literature (e. g. Indigenous ethnic literatures)

The baseline study shall be based on

(a) The terms of temporal scope; cultural heritage includes both the past (as expressed by, for example, archaeological remains) and the present (as expressed in traditional and/or spiritual activities and knowledge, for example)

(b) Terms of geographic scope, cultural heritage tangible and intangible – is found in the terrestrial (including freshwater), coastal and marine environments

(c) Terms of the scope of affected communities, an increasing number of texts advocate the integration of ESIA and aboriginal and indigenous peoples' interests.

6.4.4 **Human Rights Impact Assessment (HRIA) Workplan**

The organizations have responsibility to contribute to the promotion and protection of all human rights as specified in both the Covenant on Civil and Political Rights and the Covenant on Economic, Social and Cultural Rights. The Preamble of the Universal Declaration of Human Rights (UDHR) calls on "...every individual and every organ of society, keeping the Declaration constantly in mind, shall strive to promote respect in these rights and freedoms and secure their universal and effective recognition and observance".

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Human Rights-Based Approach (HRBA)

UN Sustainable Development Group defines the HRBA as a conceptual framework for the process of human development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights. It seeks to analyse inequalities which lie at the heart of development problems and redress discriminatory practices and unjust distributions of power that impede development progress and often result in groups of people being left behind. The HRBA has two objectives:

- To empower rights-holders to claim and exercise their rights
- To strengthen capacity of duty-bearers who have the obligation to respect, protect, promote, and fulfil human rights

Rights-holders are individuals or social groups that have particular entitlements in relation to specific duty-bearers. In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights.

Duty-bearers are state or non-state actors, that have the obligation to respect, protect, promote, and fulfil human rights of rights-holders.

The Rights-holders and the Duty-bearers shall be defined based on these principles during HRIA process.

HRBA Principles

The HRBA is underpinned by five key human rights principles, also known as PANEL: Participation, Accountability, Non-discrimination and Equality, Empowerment and Legality.

Participation – everyone is entitled to active participation in decision-making processes which affect the enjoyment of their rights.

Accountability – duty-bearers are held accountable for failing to fulfil their obligations towards rights-holders. There should be effective remedies in place when human rights breaches occur.

Non-discrimination and equality – all individuals are entitled to their rights without discrimination of any kind. All types of discrimination should be prohibited, prevented and eliminated.

Empowerment – everyone is entitled to claim and exercise their rights. Individuals and communities need to understand their rights and participate in the development of policies which affect their lives.

Legality – approaches should be in line with the legal rights set out in domestic and international laws.

Scope of HRIA

In order to gauge human rights risks, any actual or potential adverse human rights impacts with which involved or related to the Project either through the own activities or as a result of the business relationships shall have to be identified and assessed.

The publication of United Nations 2011, “Guiding Principles on Business and Human Rights: Implementing the United Nations ‘Protect, Respect and Remedy’ Framework” states, “Business enterprises should respect human rights.” As a responsible organization, the Business enterprises are required to address the range of Human Rights issues linked to their operations. These can both positively and negatively impact their staff, the workers in their supply chains, or the communities around their operations. This means that they should avoid infringing on the human rights of others and should address adverse human rights impacts with which they are involved.

The Guiding Principles further states the responsibility of the business enterprises to respect human rights as to:

- (a) Avoid causing or contributing to adverse human rights impacts through their own activities, and address such impacts when they occur;
- (b) Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Methodology

MSR Team will follow all the steps and include all assessments of laws and current situations in Myanmar, as instructed in UN Guidelines and the Guidance Note on Implementation of Human Rights Assessments under the Equator Principles. Accordingly, interviews and discussions will be conducted using both quantitative and qualitative research methods. Interviews and engagements will be undertaken with the Project Proponent, KPSEZ MC, stakeholders, government officials, INGOs/NGOs, CSOs, business owners, community leaders and households near the project area. The following activities are envisioned and will be carried out:

- Develop the methodology for undertaking the study, including survey tools, topics guides and questionnaires for surveys
- Conduct desktop research of relevant available information, documents, guidelines, frameworks, policies and case studies in Myanmar and internationally
- Train enumerators and conduct quantitative and qualitative surveys
- Analyze the findings and write a report including recommendations

The survey will consist of the following components that will allow for the collection of relevant quantitative and qualitative data for HRIA:

- Desktop research
- Household survey
- Focus group discussions (FGD)
- Key informant interviews (KII)

The HRIA studies

Before starting the study, MSR will undertake a thorough desktop review of relevant available information relating to contemporary international human rights laws, principles, regulations and policies, along with policies and treaties related to human rights in Myanmar. Specifically, the MSR team will review and analyze the relevant laws, documents, reports, case studies and guidelines by UN Agencies and international organizations on human rights as references. All relevant Myanmar Labour, Health and Safety Laws and the International Bill of Human Rights and the core ILO conventions are defined in the Section 5.8. Those documents and reports will support the implementation of the study and analysis and reporting of the findings. The desktop research will enhance understanding of the human rights situation in Myanmar, including human rights laws, regulations and principles existing research in this respect, and similar projects from other countries. This will inform the design of the household survey, FGD topic guides and KII topic guides.

Analysis of the Human Rights risks presented by the Project

The various actual or potential impacts for each potentially affected group, i.e., affected communities, workers or other stakeholders within the project's area of influence, with particular attention to vulnerable individuals and groups shall be categorized.

To enable to assess the human rights impacts accurately, MSR Team shall seek to understand the concerns of potentially affected stakeholders by consulting them directly in a manner to ensure effective engagement. During ESIA stage, MSR shall undertake meaningful consultation with potentially affected rightsholders and other relevant parties. It will be gender-sensitive and pay particular attention to any human rights impacts on individuals from groups that may be at heightened risk of vulnerability or marginalization.

The assessment shall emphasize on the impacts from the perspective of risk to people rather than risk to business. The risk and impact identification and assessment has to be repeated at regular intervals (i.e., before entering into a new activity, prior to significant decisions about changes in activities, and periodically throughout the project-cycle. (UNGP 18 and Commentary).

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Severity

A negative human rights impact that is severe by virtue of one or more of the following characteristics: its scale, scope and irremediability. Scale means the gravity of the impact on the human right(s). Scope means the number of individuals that are or could be affected. Irremediability means the ease or otherwise with which those impacted could be restored to their prior enjoyment of the right(s). The scale, scope and irremediability shall be determined for individual impact based on Section 5.2 Procedure of Scoping for Environmental and Social Impact Identification during HRIA process.

Respective values shall be assigned under the three headings above and a severity score is calculated. Then, the likelihood value weighing the probability that the risk could lead to an adverse impact shall be determined. The two plot points from the calculation of the severity score and inputting a likelihood score shall be used for the purposes of a heat map.

Under international human rights law, there is no hierarchy of human rights. In other words, no human right is recognized as more important than another. The Human Rights, which are most likely to be impacted by the Project, shall be determined and assessed and included in EIA Report.

Mitigation Measures

The proposed actions for avoiding or mitigating such impacts or otherwise addressing them through appropriate remedy shall be described as mitigation measures. The mitigation measures shall be implemented within the United Nations “Protect, Respect and Remedy” Framework.

Generally, all human rights impact by the Project cannot be addressed by the Project Proponent alone, but instead require involvement from broader spectrum of relevant stakeholders. It is to be noted that the implementation of recommendations arising from this assessment is far more important than the assessment itself.

Consumers and stakeholders increasingly demand that enterprises do more to minimize harms and maximize social dividends – not only in times of economic expansion, but also as a response to present and future crises. Some of these recommendations may be already well underway at the Project Proponent’s organization, while others may be new activities for the Project Proponent. Good Governance can be demonstrated by having a stand-alone Human Rights policy and accountability structure to oversee the Project Proponent’s Human Rights strategy, approach, and milestones. It is advisable to proactively draw upon local stakeholder insights to implement and monitor the mitigation measures.

Corporate sustainability starts with a company’s value system and a principles-based approach to doing business. This means operating in ways that, at a minimum, meet fundamental responsibilities in the areas of human rights, labour, environment and anti-corruption. Based on the Ten Principles of the UN Global Compact, the following mitigation measures are to be implemented as minimum.

- Support and respect the protection of internationally proclaimed human rights;
- Make sure not to be complicit in human rights abuses;
- Uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Eliminate all forms of forced and compulsory labour;
- Effective abolition of child labour; and
- Elimination of discrimination in respect of employment and occupation

6.4.5 Fishery Livelihood Impact Assessment Workplan

6.4.5.1 Methodology

Impact Assessment

The Livelihood Impact Assessment is linked to the socio-economic studies for the SIA. The assessment and analysis of the impacts to the fishery sector and aquaculture, will be carried out using the guidance steps of the Livelihood Toolbox, a tool which is structured in modules, steps, sub-steps, tools and additional tools. Project driven impacts to livelihood in the fishery specific study will be conducted for inner and outer zones, similar to study areas for the Social Impact Assessment (SIA). However, what extraordinary being the fishery livelihood restoration that need special design to address those adverse impacts caused by project activities and actions.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Livelihood Restoration

The Fishery Livelihood restoration will be developed by applying established livelihoods toolbox of Livelihood Center¹⁰⁹. It is a practical resource roadmap to facilitate understanding and access to existing tools for the different phases of a livelihood studies..

It is compulsory to understand the context of fishery sector of Kyauk Phyu district which is the major livelihood of local communities with the highest distribution of employment (i.e., up to 80% occupation). It will be one of the most vulnerable livelihoods and at risk by introduction of economic development Projects. The livelihood assessment of the fishery sector will establish the existing situation and identify the main issues. From this analysis, a response and management plans for implementation will be developed using the Livelihood Toolbox.

The Livelihood Impact Assessment is linked to the socio-economic studies for the SIA. The assessment and analysis of the impacts to the fishery sector and aquaculture, will be carried out using the guidance steps of the Livelihood Toolbox, a tool which is structured in modules, steps, sub-steps, tools and additional tools. Project driven impacts to livelihood in the fishery specific study will be conducted for inner and outer zones, similar to study areas for the Social Impact Assessment (SIA).

Although linked to socioeconomic studies of SIA, mitigation and management measures for alleviating livelihood impact to the fishery sector, will be either separated from or integrated along with management and monitoring plans of SIA section in the ESIA report. Thus, in conjunction with SIA methodology, the methodology of livelihood toolbox is illustrated and each component is further explained below.

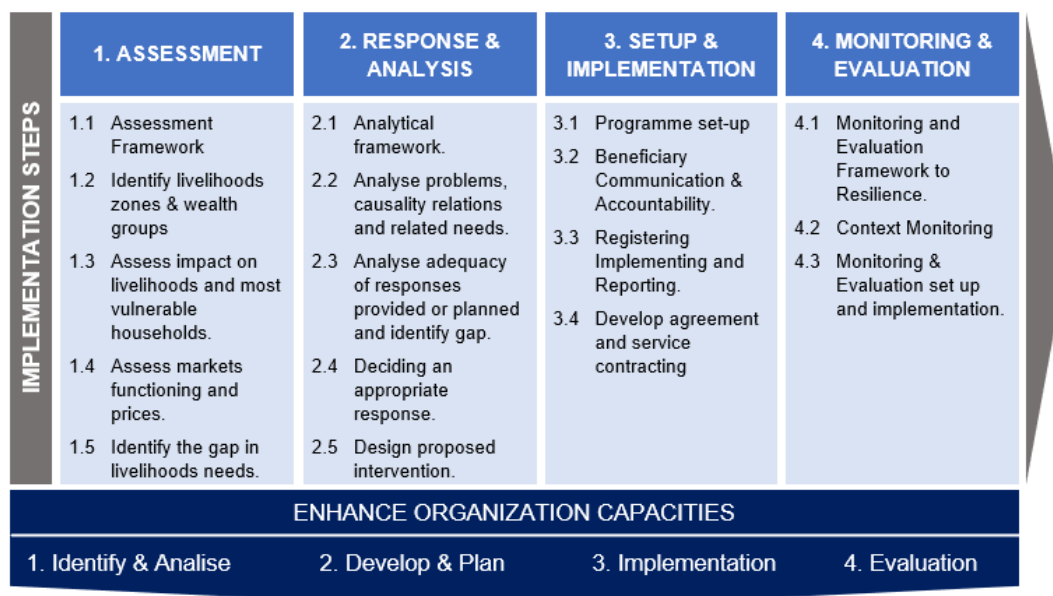


Figure ToR 11: Livelihoods Toolbox

6.4.5.2 Assessment

The module comprises the first actions in the assessment process, where population is identified and their needs assessed. It is conducted just before the response analysis since it implies getting all the necessary information and compile it. As the result of this module, it is expected to define the more vulnerable populations and to get an analysis of what the actual and desired situations are, what is the gap between them and how Project activities are related to this situation.

6.4.5.3 Response Analysis

Response analysis enables deciding what to do based on the existing information. The response analysis process will help the organization to determine the livelihood programmatic options that are most appropriate and feasible, given the priority needs of the most vulnerable population. It is conducted at

¹⁰⁹ www.livelihoodscentre.org

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

the end of the assessment process, in which the affected population's needs are identified. It will be followed by the set up and implementation module which will start with a review of the response proposed at the end of this module.

It is crucial the link between the tools used in the assessment, response analysis and monitoring and evaluation; therefore, the user of the toolbox will have to move back and forward between those modules in order to achieve maximum outcome of the field work done.

6.4.5.4 Set Up and Implementation

In this step, it is to start with the design of the intervention, defining who is going to be the target population, how is going to be implemented, when are going to be the different phases of the intervention and establishing mechanisms for internal and external coordination as well as for communicating with beneficiaries. It is mandatory a context review before starting the execution. Resources, both human and material shall be adjusted to the objective aimed. It is conducted at the end of the response analysis process, in which the type of intervention is chosen but still needs to be refined to a grass root level of implementation. In fact, this module starts with a review of the response proposed at the end of the response analysis module.

6.4.5.5 Monitoring and Evaluation

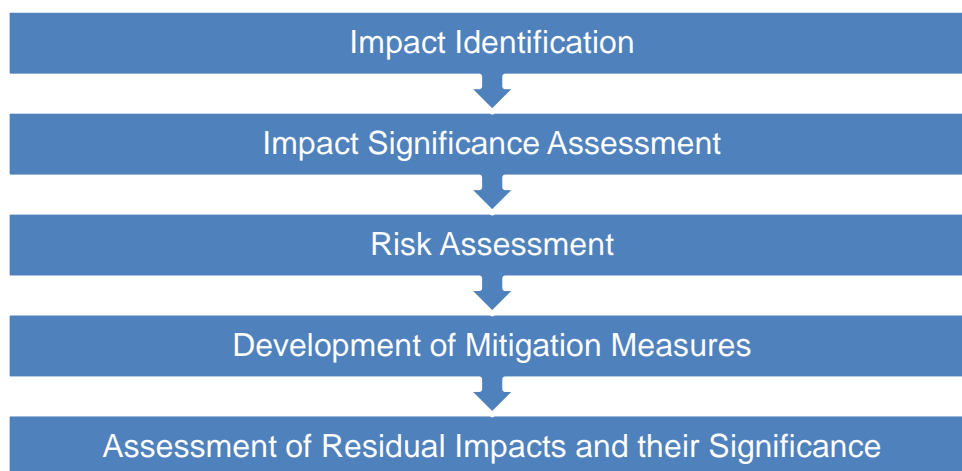
Monitoring and evaluation are particularly important because it helps to understand the community perception of the program, and its effects on non-beneficiary groups. Livelihood programs can affect and even more can be affected by the market chain, the market environment or the key infrastructure, services and inputs. Therefore, market monitoring, particularly price monitoring, should happen regularly.

The Monitoring and Evaluation module crosscuts all the other modules. It actually starts at the preparedness phase, with the development of a monitoring and evaluation framework and the evaluation of the preparedness plan and goes until the practitioner defines a logical framework with response-specific indicators.

7. Impact and Risk Assessment and Mitigation Measures

The ESIA shall provide information on potential impacts (direct, indirect and cumulative) and the magnitude and frequency of potential impacts on physical, biological, socio-economic, cultural and heritage resources resulting from preconstruction, construction, operation and decommissioning/transfer phases of the proposed Project.

The process diagram of impact assessment methodology is shown below.



This chapter will identify and present the impacts and risks of the Project for different project phases, namely, pre-construction, construction, operation and decommissioning / transfer phases and assess the significance of such impacts and risks using the appropriate methodology and criteria. Potential impacts have been identified through a systematic process whereby the activities (both planned and unplanned and also exceptional events and abandonment of the Project) associated with the Project

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

have been considered with respect to their potential to interact with environmental and social resources / receptors. In addition, an assessment of cumulative impacts will also be provided in the EIA Report.

7.1 Impact Identification and Assessment Methodology

In addition to the impacts identified in the scoping report, more aspects and their associated impacts of the activities on the physical, biological, social and socio-economic environment, health and culture will be identified considering a life cycle perspective.

7.2 Impact Significance Assessment

The aspects that have or can have a significant impact is determined by using established criteria. The impact significance will be assessed by using the following methodology. The assessment will also use standardized predictive methods, such as models, to determine the specific range of impacts on environmental and socio-economic resources.

The impact level will be calculated based on scores (high, medium, low and negligible) of extent, duration and magnitude, reversibility and frequency of effects.

Extent: The spatial scale over which the impact will occur.

Duration: Time scale over which the consequence of the effect on the receptor/s will last. [Note that this does not apply to the duration of the Project activity]. The terms 'Intermittent' and 'Temporary' may be used to describe the duration of an impact.

Magnitude: A term describing the actual change predicted to occur to a resource or receptor caused by an action or activity or linked effect.

Reversibility: This describes the degree to which an impact on an environmental parameter can be successfully reversed upon completion of the proposed activity.

Frequency of effects: This describes the frequency of occurrence of an impact.

Sensitivity: A rating given to the importance and/ or vulnerability of a receptor (e.g., conservation value of a biodiversity feature or cultural heritage resource or social receptor).

- Social Receptors: Individuals, communities or groups of stakeholders
- Ecological Receptors: Species, habitats or ecosystems including processes necessary to maintain ecosystem functions
- Physical Abiotic Receptors: Water quality, sediment quality, air quality, noise levels

The levels of impact significance will be calculated by multiplying impact level scores and receptor sensitivity scores. Positive Impact has a positive effect on the environment or socio-economic conditions.

Table ToR 19: Criteria used to determine Impact Significance

Criteria	Score	Detail
Extent	3	High – Area of impact is beyond five (5) km and impact extends to regional and national level
	2	Medium – Area of impact is beyond the Project area but is in a limited area of 1-5 km
	1	Low – Area of impact is in the Project area within a radius of one (1) km
Duration	3	Long Term – Permanent impact and impact will remain after decommissioning of the Project. Impact occurs in long term duration (> five (5) years)
	2	Medium Term – Impact can be reversible overtime (1-5 years), period of impact occurrence is within the Project period, impact occurs over mid-term duration (1-5 years)
	1	Short Term – Impact can be quickly reversible (< 1 year), period of impact occurrence is less than the Project period, impact occurs in short-term duration (<1 year)

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Criteria	Score	Detail
Magnitude	3	High – Impacts predicted to exceed resilience limits of social and environmental components, causing a considerable change in existing conditions of local environment beyond the range of natural variability
	2	Medium – Impacts predicted to be considerably above background conditions, causing a detectable change in social and environmental components of the Project area within the range of natural variability
	1	Low – Impacts predicted to be somewhat above typical background conditions, but within established standards and social perceptions
	0	Negligible – No change from background conditions predicted
Frequency	3	Continuous – Impacts occurring continuously over the assessment period
	2	Frequent – Impacts occurring repeatedly over the assessment period
	1	Infrequent – Impacts occurring once or more
Reversibility	3	Irreversible – Impacts which do not diminish upon the removal of impacts and do not diminish with time
	2	Partially reversible – Impacts remain upon the removal of the source of impacts but diminish with time
	1	Reversible – Impacts diminish upon the removal of the source of impacts
Receptor Sensitivity	3	High – High value/sensitivity receptor or resource, rare or endangered species or habitat impacted on a national or international level, exceeding standards, large permanent change in human use and/or quality of life and/or livelihoods at the local or regional levels, long-term or no reversible.
	2	Medium - Medium value/sensitivity receptor or resource, impact disturbs an area that has a value for conservation or causes change in species diversity. Impact important on a local or regional level, within standards, moderate change in human use and quality of life values at moderate level over a long-term duration, reversible over medium-term
	1	Low - Low value/sensitivity receptor or resource, impact disturbs degraded area or slightly disturbs area with value for conservation, causes small changes in species and diversity, within standards, small local change in human use and quality of life values over a short-term duration, reversible over short-term
	0	Negligible – no detectable sensitivity

Analysis of Impact Level

Impact Level = Extent + Duration + Magnitude + Frequency + Reversibility

Table ToR 20: Impact Level Score

Total Score for Impact Level	Impact Level	Score
11-15	High	3
7-10	Medium	2
3-6	Low	1

Receptor Sensitivity Ranking

Table ToR 21: Receptor Sensitivity Score

Level of Receptor Sensitivity	Score
High	3
Medium	2
Low	1

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Impact Significance Evaluation

Significance of Impact = Impact Level x Receptor Sensitivity

Table ToR 22: Significance Level Score

Significance Level of Environmental Impact			Impact Level		
			Low	Medium	High
Receptor Sensitivity	Low	1	Negligible (1)	Low (2)	Medium (3)
	Medium	2	Low (2)	Medium (4)	High (6)
	High	3	Medium (3)	High (6)	High (9)

Table ToR 23: Categories of Impact Significance

Significance Level	Definition
High	Impact is classified as high and can cause numerous effects. Major impacts affect an entire population or species in sufficient magnitude to cause a decline in abundance and/or change in distribution. Large permanent change in human use and quality of life values at a local or regional level. Fatality from an accident or occupational illness. Severe environmental damage requiring extensive rehabilitation, recoverable within 2-5 years, or exceedance of a statutory or prescribed limit over 2-5 years. Impacts can be managed or resolved by mitigation measures.
Medium	Impact may result in changes that affect the value of resources and environment. Moderate impacts affect a portion of a population and may bring about a change in abundance and/or distribution but does not threaten the integrity of the population. Moderate change in human use and quality of life values at a local level over a medium long-term duration. Major injury or health effects (including Permanent Partial Disability). Impacts exceed a statutory or prescribed limit but can be managed or resolved by mitigation measures to almost insignificant effects within 12 months.
Low	Impact may result in changes in resources and environment, but this change does not decrease value of these resources and environment. Minor impacts which affect individuals within a population over a short period of time. Minor change in human use and quality of life values at a local level over a short-term duration. Minor injury or health effects (Lost Time Injury). Impacts can be managed or resolved by mitigation measures without permanent effect or exceedance of a statutory or prescribed limit.
Negligible	Impact has a small / limited amount of environmental damage which can be controlled within the site.

7.3 Risk Assessment Methodology

Significant aspects / impacts can result in risks associated with either adverse impacts (threats) or beneficial impacts (opportunities). Results of the Impact Assessment will be analyzed and evaluated using quantitative and qualitative techniques to analyze the risk considering two uncertainty factors.

- i. Likelihood - Probability of Occurrence
- ii. Consequence - Severity of Impact

(Refer to the Table ToR 19: Consequence/probability matrix)

Each risk will be categorized as either Extreme, Medium, Low using a combination of Likelihood and Consequence factors to establish an overall risk score for all risks listed. The risk score will be used to establish priority in addressing identified risks. (Refer to the Table ToR 20: Risk ranking matrix)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Table ToR 24: Consequence/probability matrix

Highly Probable / Almost Certain	3	3	6	9
Possible / Occasional / Moderate	2	2	4	6
Rare	1	1	2	3
Likelihood Probability of Occurrence		1	2	3
	Significance of Impact (Consequence) / Severity of Impact	Low / Marginal	Medium / Serious	High / Extreme

Table ToR 25: Risk ranking matrix

7 – 9	High	Requires senior management attention / Requires detailed research and management planning at an executive level
4 – 6	Moderate	Can be managed by specific monitoring or response procedures
1 – 3	Low	Can be managed through routine procedures

7.4 Mitigation Measures

The relevant mitigation measures will be developed for each impact caused by Project activities in different Project phases. These mitigation measures are to avoid or reduce the impacts of the Project activities and will be designed in complying with national guidelines and standards or alternatively with international standards or industry codes.

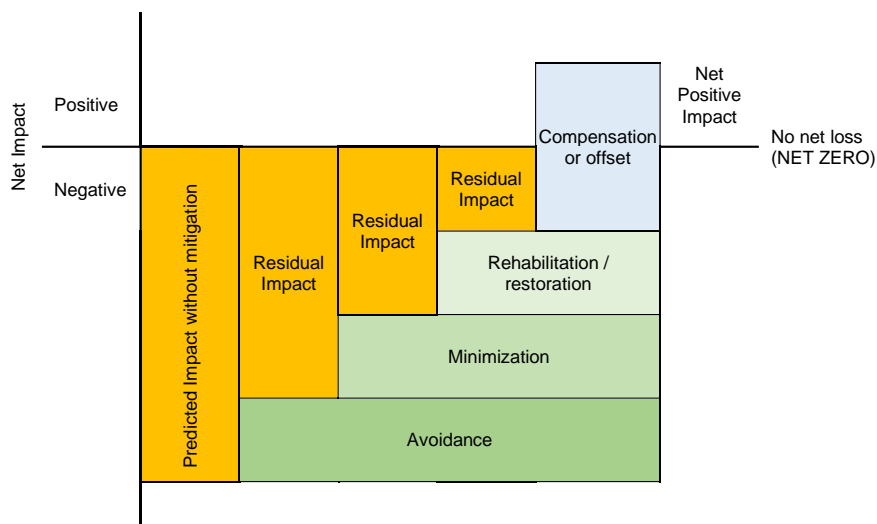
7.4.1 The mitigation hierarchy

The hierarchy follows avoidance, minimization, restoration and offsets in order to reduce development impacts and control any negative effects on the environment. (Source: ICMM IUCN Independent report on biodiversity offsets)

The mitigation hierarchy is defined as a set of the following prioritized approaches or actions:

- Avoidance: measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity
- Minimization: measures taken to reduce the duration, intensity and/or extent of impacts (including direct, indirect, and cumulative impacts, as appropriate) that cannot be completely avoided, as far as is practically feasible
- Rehabilitation/restoration: measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and/or minimized
- Offset: measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimized, and/or rehabilitated or restored, in order to achieve no net loss or a net gain of biodiversity. Offset can take the form of positive management interventions such as the restoration of degraded habitat, arrested degradation or averted risk, or the protection of areas where there is imminent or projected loss of biodiversity.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)



7.5 Residual Impacts Assessment

Residual impacts are those environmental impacts which remain even after proper implementation of proposed mitigation measures. The residual impacts will be assessed for each project phase (Pre-Construction, Construction, Operation and Decommissioning/Transfer). The residual impacts and their significance will be determined by the professional judgement and expertise based on the nature of impacts, namely, magnitude, duration, and reversibility in comparison with applicable regulations, standards and guidelines.

8. Community Health

The information about basic public health infrastructure of Project area covering water, sanitation and hygiene, proportion of households with access to improved sanitation and safe drinking water will be mentioned. The health infrastructure (district and township level) including healthcare human resources, healthcare facilities, healthcare delivery, leading causes of morbidity and mortality, frequently occurred common diseases, stakeholders cum collaborators of healthcare delivery, blood donation, ambulance services will also be described. The health impacts including occupational health and safety and community health will be assessed and relevant mitigation measures will be developed. The management and monitoring plans for occupational health and safety and community health aspects will be developed.

The hazards and factors (for e.g., physical hazards, chemical hazards, confined spaces exposure to organic and inorganic dust and exposure to noise) and the main sources for these hazards which have the potential to cause harm to workers' health and safety will be identified. The significance of impacts of these hazards will be assessed and risk associated with these hazards will also be evaluated.

Note: Health Assessment will also include exposure to dust and noise especially at day-time as determinants of human health. There cannot be possible exposure to dust and noise at night time because the construction and operation activities which may cause noise and dust will not be allowed (This is one of the mitigation measures for noise and dust emission).

9. Cumulative Impact Assessment

The cumulative impacts are the incremental and/or combined effects arising from the Project together with other existing or likely future projects, activities and other developments within a defined spatial and temporal boundary. In order to carry out the Cumulative Impact Assessment (CIA), the following steps will be followed:

- Methodology for identification and assessment of Cumulative Impact Assessment
- Identification of other existing and future private and public projects and developments
- Identification of the potential Cumulative Impact
- Assessment of Cumulative Impacts and their significance on VECs; and
- Management of Cumulative Impacts.

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

10. Environmental Management Plan

The ESIA shall include an Environmental Management Plan to prevent, mitigate and monitor each impact identified in the ESIA. Based on environmental and social impact assessment, mitigation and enhancement measures need to be specified in the form of environmental management plan (EMP). The EMP would be designed to ensure that the mitigation measures proposed in the ESIA are effectively implemented during the life of the Project. The EMP will cover all project phases (construction, and operation) including summary of impacts and mitigation measures, responsible person/ organization, monitoring items, monitoring means, monitoring frequency and allocated budget for implementation of the EMP.

The Management and Monitoring Sub-plans by Project phases (construction, and operation) will also be developed. These sub-plans will address and satisfy all relevant environmental and social management and monitoring issues and contents of each sub-plan are described below:

- Objectives
- Legal Requirements
- Overview maps and site layout maps, images, aerial photos
- Implementation schedule
- Management Actions
- Monitoring Plans
- Projected Budgets and Responsibilities

The following management and monitoring plans but not limited to will be developed.

- 1) Air quality management and monitoring plan
- 2) Wastewater management and monitoring plan
- 3) Noise and vibration management and monitoring plan
- 4) Solid waste (hazardous and non-hazardous waste) management and monitoring plan
- 5) Hazardous materials management and monitoring plan
- 6) Occupational health and safety management and monitoring plan
- 7) Community health and safety management and monitoring plan
- 8) Biodiversity management and monitoring plan

11. Public Consultation and Disclosure

11.1 Planned activities in investigation stage

In the following sections, plans have been drawn up after reviewing the engagement activities conducted during the Scoping Field Trip. The plans are made for two phases—the investigation phase and the reporting phase. The following are planned activities in the investigation phase.

11.1.1 Stakeholder engagement methodologies

The following methodologies will be applied for stakeholder engagement in the investigation stage:

1. Workshops with representatives of key stakeholder groups
2. Public Consultation Meetings (PCMs)
3. Key informant interviews (KIIs) with representatives of stakeholders
4. Focus group discussions (FGDs) with members of the stakeholder groups
5. Socio-Economic Baseline and Household Survey (SEBHS)
6. Workshop with Community Expert Group (CEG) members

11.1.2 Information Disclosure

The following methods will be employed in public disclosure and holding the Public Consultation Meetings:

1. Posting Information on the Project website
2. Inviting participants to the workshops and PCMs
3. Disclosing Project information and ESIA process
4. Selecting participants

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

11.1.2.1 Posting information on the Project website

The Project Proponent has built a website specifically for the KPSEZ-DSP Project:

Project website:	www.citicmyanmar.com
Information to be posted:	<ul style="list-style-type: none"> • Notice of Commencement of ESIA Investigation Stage • ESIA Scoping Report and ToR • ESIA Report (Draft) • The Project Proponent needs to provide project information by posting prominent legible signboards and advertising boards at the Project site which are visible to the public.

11.1.2.2 Inviting participants to the workshops and PCMs

In the investigation stage, two workshops will be held. Regarding the two PCMs to be held, one will be held during the investigation stage field trip, and the other during the Reporting Stage, going on a specific field trip.

The participants will be invited to the workshops and PCMs in the following ways:

Table ToR 26: Planned methods of invitation to workshops and PCMs

	Method of Invitation	Scheduled time	Workshops	PCMs
1.	Right-to-the-doorstep delivery	7 days ahead	■	■
2.	Advertisement in newspapers	14 days ahead	—	■
3.	Posters	14 days ahead	---	■

■ = to be carried out

Public Consultation Meetings: Participants will be invited to the PCMs by sending an invitation letter, inserting advertisements in the newspapers and posting posters in public places—markets, food shops and coffee shops and government offices (like Department of Health, Department of General Administration, etc.).

Workshops: As the number of attendees to the workshops is limited, invitation will be sent right-to-the-doorstep, seven days ahead of the events. If the invitation letter is sent too early (about two weeks ahead), they may lose it or forget to attend.

11.1.2.3 Disclosing Project Information and ESIA Process

The Project information and ESIA process will be disclosed through the following methods:

Table ToR 27: Planned methods of information disclosure

Information to be disclosed	Method		PCM	Workshop
Project information (Brief)	1	Project website	■	x
	2	Invitation letter	■	■
	3	Advertisements in the newspapers	■	x
	4	Leaflets	■	x
	5	Posters	■	x
Project information (Detailed)	6	At the PCMs	■	x
	7	At the workshops	x	■
ESIA process	1	At the PCMs	■	x
	2	At the workshops	x	■

■ = to be carried out

Information about the Kyauk Phyu Special Economic Zone Deep Sea Port Project will be disclosed by a representative of the CITIC Consortium at the PCMs—one to be held in Kyauk Phyu Township and

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

the other on Made Island. A MSR Consortium member will explain the Project information at the workshops.

11.1.2.4 Selecting participants

The participants to the workshops and PCMs will be selected according to the following purposes:

Public Consultation Meetings:	The PCMs are open to the public and representatives of the multi-stakeholder groups will be invited as per methods mentioned above.
Workshops:	Stakeholders who have good knowledge of the regional context will be selected from among the stakeholder groups and invited to the workshops.

11.1.3 Notifications prior to the PCMs

The following table shows the information to be notified and the methods of notifications to be used for the two PCMs:

Table ToR 28: Notifications to the public and notification methods

Kind of notification	Method				
	Newspaper	Project website	Poster	Leaflet	Invitation letter
Notification of Project information ¹	■	■	■	■	■
Initial notice of commencement of EIA investigation stage ²	---	■	---	---	■
Notice about public consultation meeting ³	---	■	■	■	■

Notes:

- ¹ **Notification of Project information:** Project information will be briefly carried in the newspapers, posters, leaflets and invitation letters. CITIC plans to post comprehensive Project information on the Project website. So far, it has been briefly posted.
- ² **Initial notice of commencement of EIA investigation and information:** Information on the commencement of the EIA Investigation Stage will be included in the invitation letter (PCMs) and also posted on the Project Proponent's website.
- ³ **Public consultation meeting:** Information about holding the two PCMs will be shared through all means mentioned above.
- ⁴ ■ = will be carried out

11.1.4 Public participation (All methods)

Stakeholder activities for the Investigation Stage have been scheduled as follows:

Table ToR 29: Schedule of stakeholder engagement activities for Investigation Stage

Method	Initial schedule	Changed schedule	Trip 1	Trip 2	Trip 3	Trip 4
			Completed	Schedule	Schedule	Schedule
Public Consultation Meetings	6	6	2	Combined with Trip 1	2	2
Workshops	4	2	2		2	0
Key informant interviews (KIIs)	189	127	127		62	0
Focus group discussions (FGDs)	34	9	9		25	0
	233	140	140		91	2

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Notes:

- Trip 1 (Scoping Field Trip): Completed
- Trip 2 (Investigation Trip – Rainy Season): Combined with Trip 1
- Trip 3: (Investigation Trip – Dry Season): Data confirmation and collection
- Trip 4: PCM-specific Trip: Just for holding the two PCMs

In addition to the above-mentioned methods, workshops will be held with the Community Expert Group members.

11.1.4.1 Public Consultation Meetings

Two PCMs will be held—one in Kyauk Phyu Township and the other on Made Island. At the PCMs, findings from the Scoping Phase will be clarified and further comments from the participants will be sought.

PCMs scheduled for the Investigation Phase

Sr. No.	Method of participation	Venue	Invitees
1.	Public Consultation Meeting 1	Kyauk Phyu Township	Multi-stakeholders and the public
2.	Public Consultation Meeting 2	Made Island	

Detailed schedule for PCM 1 and PCM 2

The two PCMs will be held according to the following schedule:

Planned invitees:	Representatives of multi-stakeholder groups, including interested persons and parties will be invited.
The venues:	The venue shall be a neutral place where the participants can openly reveal their views and concerns. Hotel Kyauk Phyu is the ideal place which has a space that can accommodate all the participants. On Made Island, the Made Monastery will be chosen. It is the only place on the island with sufficient space to accommodate the participants.
The dates:	Dates for holding the PCMs will be decided after negotiation with the District General Administration Department.
The duration:	The participants will be given sufficient time for presenting their comments.
Invitation:	Multi-stakeholders including government officials, CSOs, INGOs and NGOs, political parties and local residents will be invited.

11.1.4.2 Workshops

Two workshops will be held in Kyauk Phyu Township during the ESIA investigation field trip. At the first workshop, potential positive impacts and negative impacts, mitigation measures, and concerns of the people will be presented to the attendees. At the second workshop, extensive group discussions will be held regarding project impacts, mitigations and comments.

Workshops scheduled for the Investigation Phase

Sr. No.	Method of participation	Venue	Invitees
1.	Workshop 1	Kyauk Phyu Township	The planned invitees are mentioned below:
2.	Workshop 2	Kyauk Phyu Township	

Planned invitees: Representatives of the following groups will be invited to the workshops:

- Government departments
- Town elders
- Civil Society Organizations
- Non-governmental organizations

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- International non-governmental organizations

The two workshops will be held by inviting participants who have comprehensive knowledge of the local context and provide feedback on potential positive and negative impacts and mitigation measures. In holding the workshops, the venue, dates, duration, and invitation of participants will be considered as follows:

The venue:	The venue shall be a neutral place where the participants can openly reveal their views and concerns. Both workshops will be held at the same venue.
The dates:	Dates for holding the workshops will be decided after negotiation with the District General Administration Department that can provide advice on the days (of the week) on which people will be available for attendance.
The duration:	The participants will be given sufficient time for group discussions—in morning and afternoon sessions.
Invitation:	The participants will be invited by delivering the invitation letter to the address. The invitation letter will be released seven days ahead of the workshops.
Group discussions:	On the first day, potential positive impacts, negative impacts, mitigation measures and their concerned will be presented for consideration. On the second day, the same five groups will discuss the points laid out, and provide further comments and suggestions.

11.1.4.3 Key Informant Interviews and Focus Group Discussions

After reviewing the findings from the interviews, workshops and PCMs in the Scoping Stage, it is found that the stakeholder groups directly affected are farmers / cultivation and fishers (boat owners) and fishers (casual workers) and dealers of rice and other crops and marine produce are indirectly affected. Therefore, the schedule in the Investigation Stage is mainly focused on these groups.

In addition to these groups, the groups in Kyauk Phyu Township will be interviewed, including town elders, ward administrators, political parties and government departments / enterprises. They are included in the schedule for the Investigation Stage.

In the ESIA Investigation Phase, it has been scheduled to form six data-collection teams: 3 (three) for KIIs (including health and safety and cultural heritage data) and another 3 (three) for FGDs.

Table ToR 30: KII and FGD teams scheduled to be formed

Team No.	Team members		Responsible for:
Team 1	Leader	Note-taker	KIIs
Team 2	Leader	Note-taker	
Team 3	Leader	Note-taker	
Team 4	Leader	Note-taker	FGDs
Team 5	Leader	Note-taker	
Team 6	Leader	Note-taker	

The following table shows the completion in the Scoping Stage and schedule for the Investigation Stage of KIIs and FGDs:

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

Table ToR 31: Update and schedule of interviews (KIIs and FGDs)

Sr. No.	Stakeholder group	No of interviews				Overall schedule	
		Completed (Scoping)		Scheduled (Investigation)		KII	FGD
		KII	FGD	KII	FGD		
Rural villages (Inner and Outer Zones)							
1.	Village elders (Village profiles)	15	0	0	0	15	0
2.	Village administrators	14	0	0	0	14	0
3.	Farmers / cultivators	6	3	6	5	12	8
4.	Fishermen (Casual workers)	5	2	8	9	13	11
5.	Fishermen (Boat owners)	5	0	3	0	8	0
6.	Livestock breeders	0	0	0	0	0	0
7.	Casual workers (other livelihoods)	0	0	0	3	0	3
8.	Minority ethnic groups	3	0	2	0	5	0
9.	Vulnerable groups	5	0	5	0	10	0
10.	Youths	2	1	0	4	2	5
11.	Women	3	1	0	4	3	5
Kyauk Phyu Township							
12.	Town elders	9	0	3	0	12	0
13.	Political parties	2	0	3	0	5	0
14.	Civil Society Organizations	8	0	4	0	16	0
15.	Non-governmental organizations	2	0		0		
16.	International NGOs	2	0		0		
17.	Religious leaders	3	0	0	0	3	0
18.	Fishermen' association	3	0	0	0	3	0
19.	Money lender	1	0	0	0	1	0
20.	Youth associations	2	0	0	0	2	0
21.	Ward administrators	8	0	0	0	8	0
22.	Government departments	8	0	8	0	16	0
Rural villages and Kyauk Phyu							
23.	Rice/other crops dealers	0	0	6	0	6	0
24.	Fish traders	0	0	9	0	9	0
25.	Health	14	2	3	0	17	2
26.	Culture	7	0	2	0	9	0
	Total:	127	9	62	25	189	34

Livestock breeders: In the villages, as livestock breeding is carried out only on a manageable scale, questions for livestock breeders will be combined with those of farmers (Cultivators).

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Key Informant Interviews (KIIs)

There are 189 KIIs to be conducted overall. Of these, 127 interviews were completed in the Scoping Phase and 62 remain.

In the investigation stage, KIIs will be focused on the following groups:

1. Farmers and fishers of the 15 villages
2. Traders / dealers of agricultural and marine produce in Kyauk Phyu Township
3. Ward administrators (remaining to be interviewed)
4. Town elders (remaining to be interviewed)
5. Political parties (remaining to be interviewed)
6. Government departments / enterprises

The following table shows the places where KIIs for various stakeholders will be conducted:

Table ToR 32: KIIs scheduled for the Investigation Phase

Stakeholder group	Inner Zone Villages														Outer Zone Villages	Downtown Kyauk Phyu	Total	
	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge								
	Ywar Ma	Prain	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Say Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar				Tha Pyu Taung
Farmers		1						1						1	3		6	
Fishermen			1		1			1	1				1	1	2		8	
Boat owners				1		1				1							3	
Vulnerable group	1	1						1						1	1		5	
Minority ethnic group			1				1										2	
Town elders																3	3	
Political parties																3	3	
Rice / other crops trader	1					1						1				3	6	
Fish trader		1						1					1		2	4	9	
CSO/INGO																4	4	
Government																8	8	
Health	1					1						1					3	
Culture												1	1				2	
Total:	3	3	2	1	1	3	1	3	2	1	0	3	3	2	2	7	25	62
	10					9				11					7	25	62	

Adm: Administrator

Focus Group Discussions

The overall schedule of FGDs is 34. Out of these, nine (9) were completed in the Scoping Stage, leaving 25 FGDs. Altogether 25 FGDs are scheduled for the Investigation Stage.

The following table shows the places where FGDs for various stakeholders will be conducted:

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table ToR 33: FGDs schedule for the Investigation Phase

Stakeholder group	Made Island Port Terminal					Yanbye Island Port Terminal				Road and Bridge					Outer Zone villages	Total	
	Ywar Ma	Prain	Kyauk Tan	Kyauk Maw Gyi	Pan Htain Se	Sittaw	Kyan Chein	Say Maw	Thit Poke Taung	Htaunt Chaung	Ku Lar Bar Taung	U Gin	Kyat Tain	Tha Hpan Khar			Tha Pyu Taung
Farmers/Live-stock			1					1					1			2	5
Fishermen	1	1				1	1				1	1				3	9
Other livelihoods				1					1						1		3
Youths	1					1				1						1	4
Women			1				1				1					1	4
Total:	2	1	2	1	0	2	2	1	1	1	2	1	1	0	1	7	25
	6					6				6					7	25	

11.1.4.4 Socio-Economic Baseline Household Survey (SEBHS)

The Socio-Economic Baseline Household Survey will be conducted by a separate team, composed of permanent and part-time staff members of the Social Research Department of MSR. SEBHS will conduct the survey as follows:

Methods: Quantitative and qualitative

Quantitative:

Face-to-face interviews (CAPI)

Census: 1,962 HHs (15 villages in inner zone)

Sampling: 1,000 HHs (Outer zone villages)

(20 HHs x 50 sampled villages)

Schedule for Census Survey to be conducted by SEBHS team

The following table shows the number of census units (households) in the inner zone 15 villages:

Table ToR 34: Census to be conducted by SEBHS team in inner zone

Sub-project	Sr. No.	Village	Census units (No. of households)
Made Island Port Terminal of the Project	1.	Ywar Ma	178
	2.	Prain	346
	3.	Kyauk Tan	200
	4.	Kyauk Maw Gyi	52
	5.	Pan Htain Se	36
Total:			812
Yanbye Island Port Terminal of the Project	6.	Sit Taw	119
	7.	Kyan Chein	105
	8.	Say Maw	243
	9.	Thit Poke Taung	146
Total:			613
15-km Access Road & Bridge of the Project	10.	Htaunt Chaung	59
	11.	Ku Lar Bar Taung	118
	12.	U Gin	171

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sub-project	Sr. No.	Village	Census units (No. of households)
	13.	Kyat Tein	130
	14.	Tha Hpan Khar	17
	15.	Tha Pyu Taung	42
	Total:		537
	All total:		1,962

Schedule for Sampling to be conducted by SEBHS team in outer zone

In the outer zone, 50 villages/wards will be sampled from among the total number of more than 200 villages/wards. In each village/ward, there will be 20 households sampled for interview. So, the total number of samples in the outer zone will amount to 1,000.

A detailed schedule will be drawn up in the Investigation Stage.

11.1.4.5 Government engagement

Altogether 31 government departments, enterprises and administrative bodies, including village administrators and ward administrators were engaged in the Scoping Stage using three methods: KILs, workshops and PCMs. The number of officers engaged amounted to 95.

In the Scoping Phase, KILs were conducted with the following departments and administrative body members as follows:

1. Department of Agricultural Land Management & Statistics (Township)
2. Department of Agriculture (Township)
3. Department of Environmental Conservation (Township)
4. Department of Fire Services (Township)
5. Department of Forestry (Township)
6. Department of Livestock Breeding and Veterinary
7. Department of Religious Affairs (Township)
8. Township Development Committee
9. Electricity Supply Enterprise
10. Village administrators (15 interviewees)
11. Ward administrators (17 interviewees)

Depending on the extent of involvement in the Project and with the directly affected persons, the following departments/enterprises have been considered for KILs in the Investigation Phase:

1. Department of Agricultural and Land Statistics Department (District)
2. Department of Fishery (Township)
3. Department of Inland Water Transport
4. Department of Marine Administration (District)
5. Department of Border Areas and Ethnic Peoples Development (District)
6. Myanma Port Authority (District)
7. Department of Rural Development (Township)

All related departments and enterprises (township and district levels) will be invited to the two workshops and two PCMs.

Other key stakeholders

Other key stakeholders namely Kyauk Phyu SEZ Management Committee, Rakhine State Government, and the Project Proponent shall be consulted during the EIA study to determine their needs and expectations which could have impacts on the Project implementation.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

11.1.4.6 Community Expert Group Workshop

In the investigation and reporting stages, workshops with CEG members will be held at least one to two times. At the workshop, the draft Fisher EIA Report will be presented and feedback will be sought from the participants. Information about the CEG is provided in Chapter 6: Public Consultation and Disclosure of this report.

11.2 Planned activities in reporting stage

After completing the investigation phase field trip, there will be two main activities as follows:

1. Compilation of the ESIA Report, and
2. Holding the fifth and sixth Public Consultation Meetings

11.2.1 Compilation of ESIA Report

MSR Consortium will start compilation of the ESIA Report on completion of the investigation phase data collection, and proceed according to the following process:

1. Compilation of the ESIA Report
2. Holding the last two PCMs, by undertaking a specific field trip, for disclosure of findings in the draft ESIA Report
3. Holding a Community Expert Group
4. Revising the report with feedback from the PCMs, and internal and international Review Teams of MSR Consortium and workshop with CEG
5. Submitting the draft ESIA Report to the Project Proponent
6. Revising the draft ESIA Report with feedback from the Project Proponent
7. Submitting the ESIA Report to ECD

Parts of the report will be compiled by the executing teams of respective disciplines: Legal, physical environment, biological environment and social environment and public consultation and disclosure. The parts will be combined into three reports—Made Island, Yanbye Island and Access Road and Bridge.

11.2.2 Public Consultation Meetings

A specific field trip will be made to hold one PCM each in Kyauk Phyu Township and Made Island. Findings in the ESIA Report (Draft) will be clarified and comments from the attendees will be sought at the PCMs, which will be held in the similar way—participants, dates, venues, duration, etc.—as in the PCMs in the Investigation Stage.

The PCMs involve the following activities, which will be carried out in the Investigative Stage:

1. Information disclosure
 - (a) Posting Information on the Project website
 - (b) Inviting participants to the workshops and PCMs
 - (c) Disclosing Project information and ESIA process
 - (d) Selecting participants

These activities will be carried out as mentioned in Section 12.2.2.

2. Public consultation meetings
 - (a) PCM in Kyauk Phyu Township
 - (b) PCM on Made Island

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

The two PCMs will be held according to the following detailed schedule:

Planned invitees:	Representatives of multi-stakeholder groups, including interested persons and parties will be invited.
The venues:	The venue shall be a neutral place where the participants can openly reveal their views and concerns. Hotel Kyauk Phyu is the ideal place which has a space that can accommodate all the participants. On Made Island, the Made Monastery will be chosen. It is the only place on the island with sufficient space to accommodate the participants.
The dates:	Dates for holding the PCMs will be decided after negotiation with the District General Administration Department.
The duration:	The participants will be given sufficient time for presenting their comments.
Invitation:	Multi-stakeholders including government officials, CSOs, INGOs and NGOs, political parties and local residents will be invited 14 days ahead of the PCMs.

11.3 Responsible entities

In the investigation and reporting phases, the following activities will be carried out by MSR Consortium. Notice of Commencement of ESIA Investigation Stage and PCMs will be held jointly with the Project Proponent, Kyaukphyu Special Economic Zone Deep Seaport Co., Ltd..

The following table shows the share of responsibilities for respective tasks:

1. ESIA Investigation Stage			
1.	Investigation Field Trip (One time)	MSR	—
2.	Site visits	MSR	—
3.	Key Informant Interviews	MSR	—
4.	Focus Group Discussions	MSR	—
5.	Notice of Commencement of ESIA Investigation Stage	MSR	CITIC
6.	Workshops (Two)	MSR	■
7.	Public Consultation Meetings (Made and Yanbye)	MSR	—
2. ESIA Report Compilation Stage			
1.	PCM-specific field trip (Made and Yanbye)	MSR	CITIC
2.	Public Consultation Meetings at other places	MSR	CITIC

■ = Participation of CITIC in the workshops in optional.

MSR Consortium members involved in holding the PCMs

The following key persons will be involved in holding the PCMs:

Sr. No.	Name	DSP ESIA duty
Leading persons		
1.	U Kyaw Hlaing	Project Director
2.	U Ye Nyunt	Report Writer (Public Consultation and Disclosure)
3.	U Ko Ko Soe Lwin Thaw	Project Manager
4.	U Kyan Dyne Aung	Leading Report Writer 1 (Made Island)
5.	Dr. Htay Aung Pyae	Leading Report Writer 2 (Yanbye Island)
6.	Dr. Aye Aye Saw	Leading Report Writer 3 (Access Road with Bridge)

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr. No.	Name	DSP ESIA duty
7.	U Aung Lin	Social Environment, PCM Organizer
Persons responsible for clarifications		
8.	Physical Environment team members	
9.	Biological Environment team members	
10.	Social Environment team members	
11.	Other team members (Legal and Public Consultation and Disclosure)	

Specific team members will also be assigned to the following tasks:

1. Preparation at the PCM venue
2. Reception and registration of participants
3. Note-taking of meeting minutes (Audio and manual script)
4. Photo recording

11.4 Control of Documents

MSR Consortium has formed Project Executing Teams for various disciplines: Report Review Teams (Local and International), Physical Environment, Biological Environment and Socio-economic Environment, legal instruments, management and document control and report preparation.

The Document Control Team has the following team members:

Sr. No.	Name	Designation (MSR)	Document Control and Report Preparation Team (DSP ESIA Project)
1.	U Ye Nyunt	Research Director	Leader
2.	Daw Nyein Nyein Myo	Deputy Director	Member
3.	Daw Win Win Mar	Project Manager	Member

The functions of the team are:

1. Keeping all digital documents in systematically created folders, according to ESIA Project phase and topic
2. Organizing meetings, as instructed and necessary, among ESIA Project Executive Team members, advisors and consultants and the representatives of the DSP Project Proponent.
3. Inviting participants to the meetings and keeping meeting minutes
4. Preparing and formatting reports (plans, Scoping Report and ESIA Reports), contributed by respective report writers, and
5. Keeping databases as necessary.

11.5 Recommendations for the PCMs

There are three recommendations in relation to holding the Public Consultation Meetings for the investigation and reporting stages as follows:

1. **Venue:** So far, two PCMs have been held in the Scoping Phase, and four more remain—two in the investigation phase and another two in the reporting stage. Not all the local residents could attend the PCM in Kyauk Phyu. To allow people of the villages to participate, two more PCMs should be held—one for the residents of villages on Yanbye Island and another one for villages along the Access Road with Bridge. The total would increase to eight.

Completed, remaining and further suggested PCMs

Status	PCM	Venue	Stage
Completed	PCM 1	Kayak Phyu Township	Scoping
	PCM 2	Made Island	Scoping
Remaining	PCM 3	Kyauk Phyu Township	Investigation

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Status	PCM	Venue	Stage
	PCM 4	Made Island	Investigation
	PCM 5	Kyauk Phyu Township	Reporting
	PCM 6	Made Island	Reporting
Suggested:	PCM 7	Largest one of the four villages on Yanbye Island	To be decided
	PCM 8	Largest one of the six villages on Access Road	To be decided

The total number of PCMs will become eight if the suggested PCMs are added.

2. **Major interest and concerns:** The Project information and ESIA process are shared at the PCMs, the clarification part of the PCM takes many hours to present project information. Sufficient time is given for participants to contribute their comments and concerns. The participants are not interested in long ESIA process and potential impacts on the environment. Most of them are interested only in the following, in order of importance:

- (1) Whether their livelihoods will be lost, and information about remedial measures
- (2) Whether resources they are relying on—water, fuelwood, etc.—will be lost
- (3) Requirements for infrastructure—roads, health and education.

The Project information should be provided properly, but explanations and information around the ESIA process should be clear, succinct and brief so as not to irritate / annoy participants, and to allow more time for the participants for thinking and contributing their comments.

3. **Permission for holding PCMs:** The KPSEZ DSP Project is a significant project, but permission for holding the PCMs is not completed at the district level (District General Administration Department). It has to be sought from higher authorities. Therefore, the process should be reconsidered.

12. Conclusion and Recommendation

The conclusion will contain the main conclusions from all sections of the EIA report. Residual impacts and issues (if any) will be presented in detail in this section, including how to manage these impacts. Finally, the conclusion will state whether the proposed Project can be implemented without significant and / adverse environmental and social impacts.

The recommendations will be made based on Project cost, engineering and design, impacts on the physical, biological and social environment, and suggestions and comments provided by all stakeholders. If there are any difficulties in collecting the necessary data and information and conducting any assessments by the MSR Consortium (and/or the Project Proponent), these would also be taken into account when providing recommendations.

Recommendations will also include all necessary management measures to mitigate and manage residual impacts and issues (if any).

Clarification of conditions to implement the Project will be presented in this section.

13. Community Development Plans

Project implementers need to engage in community investment efforts as a way to promote local development and benefit stakeholders in their areas of operation. In carrying out activities for community development, “issues of highest concerns to local stakeholders” is one of the parameters mentioned in the IFC good practice handbook.¹¹⁰

According to the findings from the Scoping Stage studies, the following are the issues of highest concerns:

1. Remedial measures for loss of livelihoods, impacted by the Project
2. Capacity building in preparation for jobs of various kinds
3. Development of local infrastructure including transportation, health and education, access to

¹¹⁰ Strategic Community Investment: A good practice handbook for companies doing business in emerging markets, IFC, 2010

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

**KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)**

- water and electricity, etc.
- 4. Establishment of businesses.

The Project implementer needs to formulate a detailed, comprehensive Community Development Plan, including budget, a strategy and the local context

In the ESIA Report, the plan will be outlined, based on findings from the investigation stage findings, and referencing internationally accepted documents.

14. Visual and Graphic Presentation

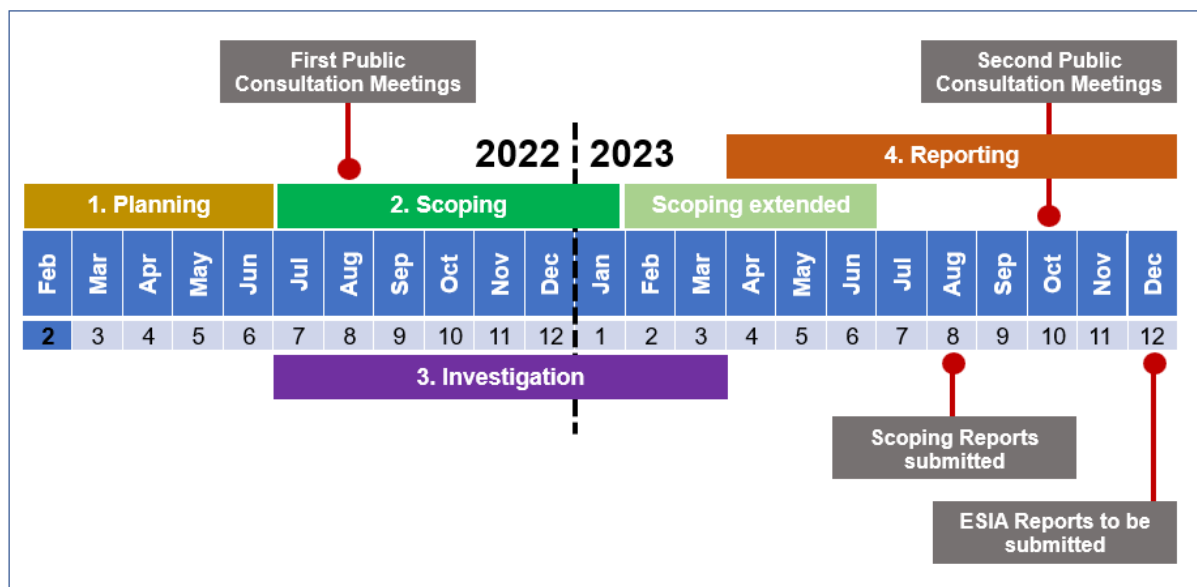
The relevant maps, aerial photos, satellite images and figures in proper scale clearly indicating the location of Project area, Project phases layout, section plans, surrounding environment, study area and baseline data collection, significant cultural places in the Project area, observed climatology of temperature of Rakhine, monthly temperature and precipitation of Rakhine, terrain map, topographic map, soil map, geological map, etc. will be included.

These maps, aerial photos, satellite images and graphic presentations will be produced by MSR Consortium and acquired from reliable sources such as UNEP, google earth, world bank group, U.S. Geological Survey, University of Texas Libraries, Global Multi-Resolution Topography, National Oceanic and Atmospheric Administration, Land Use and Inspection Division (Ministry of Agriculture, Livestock and Irrigation – Union of Myanmar), Myanmar Earthquake Committee. The figures, images and maps provided by the Project Proponent will also be used.

15. Implementation Program

The overall schedule for conducting the Environmental and Social Impact Assessment including scoping study is described in the table below.

Table ToR 35: Overall schedule for conducting the Environmental and Social Impact Assessment (See enlarged table in Appendix 10)



The Project is a Public Private Partnership (PPP) Project under the design, build, finance, operation, maintenance and transfer (DBFOT) system. According to the Special Economic Zone Law (2014), the land lease term is permitted a 50-year period and extendable up to additional 25 years.

The DSP Project development will cover six (6) main Project activities, namely, Start Up Works, Feasibility Study, Design Development, Construction, Operation and Transfer. The detailed work for each activity is described in the following table.

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Table ToR 36: Detailed Work for Project Activities

Start Up Works	Feasibility	Design	Construction	Operation	Transfer
<ul style="list-style-type: none"> ● Preliminary Geology & Topography Survey (PGTS) ● Environmental and Social Assessment (ESIA) 	<ul style="list-style-type: none"> ● Concept Plan Optimization ● Feasibility Study 	<ul style="list-style-type: none"> ● Preliminary Design ● Detailed Design 	<p>Procurement</p> <ul style="list-style-type: none"> ● Contractors, materials, equipment, etc. <p>Construction and Control</p> <ul style="list-style-type: none"> ● QA/QC Control ● HSE Management ● Progress Control ● Cost Control ● Information Management <p>Completion & Commissioning</p>	<ul style="list-style-type: none"> ● Engage with experience and professional operation team ● Development of Operation Plan ● Operation Implementation 	<ul style="list-style-type: none"> ● Upon the end of concession period, the DSP Project facilities will be transferred to Myanmar

The implementation schedule for each particular segment of the Made Island Port Terminal of the Project is unknown at start-up phase. The Project setting and description is subject to change with respect to the outcomes and assessments which are in progress in the start-up or commissioning phase.

Upon final design and feasibility studies proving-up the Project, it will proceed according to the description in the conceptual plans and the Project proposal report. The implementation schedule will be duly updated and reported to concerned authorities and ECD.

16. Table of contents for the EIA report and EMP

- EIA Report Compliance Checklist
- Table of contents for the EIA report
- List of Tables
- List of Figures
- Acronyms
- Executive Summary (Myanmar and English)

Chapter 1. Introduction

- 1.1 Project Context
- 1.2 Objectives and Rationale of Project
- 1.3 Project Benefits
- 1.4 Presentation of the Project Proponent
- 1.5 Presentation of the Environmental and Social Experts

Chapter 2. Policy, Legal and Institutional Framework

- 2.1 Project's Environmental and Social Policies
- 2.2 Policy and Legal Framework
- 2.3 Institutional Framework
- 2.4 International Conventions, Treaties and Agreements
- 2.5 International Best Practice
- 2.6 Project's Environmental and Social Standards
- 2.7 Contractual and other Commitments

Chapter 3. Description of the Project and Alternatives

Project Description

- 3.1 Project Description
- 3.2 Project Dimension and Details
- 3.3 Project Location
- 3.4 Scope of Project and Salient Features
- 3.5 Site Access and Site Roads
- 3.6 Terminal Design and Information
- 3.7 Navigation and Shipping
 - 3.7.1 Shipping Channel

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 3.7.2 Design Vessel
 - 3.8 Marine Infrastructure
 - 3.8.1 Approach Channel
 - 3.8.2 Dredging
 - 3.8.2.1 Revetments/Shore Protection
 - 3.8.2.2 Berth
 - 3.8.2.3 Aids to Navigation
 - 3.8.2.4 Anchorage
 - 3.8.2.5 Dredging and Land Reclamation
 - 3.8.2.6 Breakwater/Revetments
 - 3.9 Terminal Infrastructure and Facilities
 - 3.9.1 Reclamation/Land Transformation
 - 3.9.2 Power Supply
 - 3.9.3 Telecommunication
 - 3.9.4 Water Supply
 - 3.9.5 Stormwater Management
 - 3.9.6 Water Treatment Plant
 - 3.9.7 Sewage Treatment Plant
 - 3.9.8 Transfer Waste Station
 - 3.9.9 Refuelling Yard
 - 3.9.10 Firefighting
 - 3.9.11 Borrow Sources
 - 3.9.12 Ancillary facilities
 - 3.9.13 Marine Supply Base
 - 3.9.14 Pavement/Landing facility/Construction jetty
 - 3.10 Operational Requirements
 - 3.10.1 Handling Technology
 - 3.10.2 IT System
 - 3.10.3 Maintenance
 - 3.10.4 Infrastructure (sub-projects) Summary
 - 3.11 Workforce and Accommodation
 - 3.12 Construction Materials and Resources
 - 3.13 Project Phases
 - 3.13.1 Pre-construction Phase
 - 3.13.2 Construction Phase
 - 3.13.3 Operation (and Maintenance) Phase
 - 3.13.4 Decommissioning/Transfer Phase
 - 3.14 Project Implementation Schedule
 - 3.15 Project Cost
- Project Alternatives**
- 3.16 Comparison and Selection of Alternative
 - 3.16.1 Methodology
 - 3.16.2 Comparison and Selection of Alternative
 - 3.17 Description of the Selected Alternative
 - 3.17.1 Technical Description of the Selected Alternative
 - 3.17.2 Detail Design

Chapter 4. Description of Surrounding Environment

- 4.1 Introduction
- 4.2 Setting Study Area and Limits
- 4.3 Physical Environment
 - 4.3.1 Climate
 - 4.3.2 Air Quality
 - 4.3.3 Noise and Vibration
 - 4.3.4 Surface Water Quality (Fresh and Sea)
 - 4.3.5 Ground Water
 - 4.3.6 Soil and Geology

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 4.3.7 Topography
 - 4.3.8 Hydrology
 - 4.3.9 Coastal Hydrology
 - 4.4 Biological Environment (Terrestrial)
 - 4.4.1 Terrestrial flora
 - 4.4.2 Terrestrial fauna
 - 4.5 Biological Environment (Marine)
 - 4.5.1 Marine fauna
 - 4.5.2 Seagrass and Seaweed
 - 4.5.3 Benthos, Mollusks and Gastropods
 - 4.5.4 Coral Reefs
 - 4.5.5 Plankton
 - 4.5.6 Marine Fish
 - 4.5.7 Mangrove
 - 4.6 Protected Areas and Ecoregions
 - 4.7 Social Environment
 - 4.7.1 Rakhine State Overview
 - 4.7.2 Kyauk Phyu Township Overview
 - 4.7.3 Made Island Overview
 - 4.7.3.1 Business and Job Opportunities
 - 4.7.3.2 Infrastructure and Transportation
 - 4.7.3.3 Education, Healthcare and Social Life
 - 4.7.3.4 Security
 - 4.7.4 Village Profile: Communities in Project Intersection
 - 4.7.4.1 Sit Taw Village
 - 4.7.4.2 Say Maw Village
 - 4.7.4.3 Kyan Chein Village
 - 4.7.4.4 Thit Poke Taung Village
 - 4.7.5 Ethnic Minorities and Indigenous Groups
 - 4.7.6 Land Ownership and Customary Land Rights
 - 4.7.7 Land Acquisition and Resettlement
 - 4.7.8 Community Health
 - 4.7.9 Cultural and Heritage
 - 4.8 Local Infrastructure and Services
 - 4.9 Port and National Security
 - 4.10 Natural Disasters and Hazards
 - 4.10.1 Earthquakes
 - 4.10.2 Mud Volcano
 - 4.10.3 Tsunami and Storm surges
 - 4.10.4 Flood and Inundation
 - 4.10.5 Cyclones and Storms
 - 4.10.6 Landslide
 - 4.10.7 Wildfire
 - 4.10.8 Drought
- Chapter 5. Impact and Risk Assessment and Mitigation Measures**
- 5.1 Impact Assessment Methodology
 - 5.1.1 Identification of Impacts
 - 5.1.2 Impact Significance Assessment
 - 5.1.3 Risk Assessment
 - 5.1.4 Project-Environment Interaction Risk Matrix
 - 5.1.5 Developing Mitigation Measures
 - 5.1.6 Assessment of Residual Impacts and their Significance
 - 5.2 Physical Environment Impact Assessment
 - 5.2.1 Water Quality (fresh water, ground water and sea water)
 - 5.2.2 Ambient Air Quality
 - 5.2.3 Ambient Noise Quality
 - 5.2.4 Soil and Marine Sediment

Terms of Reference (ToR) for Environmental Impact Assessment (EIA)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

- 5.2.5 Climate Change
- 5.2.6 Microclimate
- 5.2.7 Coastal Hydrology
- 5.2.8 Wastes Generation
- 5.3 Biological Environment Impact Assessment
 - 5.3.1 Marine Biological Environment
 - 5.3.1.1 Fauna
 - 5.3.1.2 Flora
 - 5.3.2 Terrestrial Biological Environment
 - 5.3.2.1 Fauna
 - 5.3.2.2 Flora
- 5.4 Social Environment Impact Assessment
 - 5.4.1 Socio-economic Impact Assessment
 - 5.4.2 Community Health Impact Assessment
 - 5.4.3 Cultural Heritage Impact Assessment
 - 5.4.4 Livelihood Impact Assessment
 - 5.4.5 Human Rights Impact Assessment

Chapter 6. Cumulative Impact Assessment

- 6.1 Methodology for identification and assessment of Cumulative Impact Assessment
- 6.2 Identification of other existing and future private and public projects and developments
- 6.3 Identification of the potential Cumulative Impact
- 6.4 Assessment of Cumulative Impacts and their significance on VECs; and
- 6.5 Management of Cumulative Impacts.

Chapter 7. Environmental Management Plan (Table of Contents for EMP)

- 7.1 Objectives
- 7.2 Legal Requirements
- 7.3 Overview maps and site layout maps, images, aerial photos
- 7.4 Implementation schedule
- 7.5 Management Actions
- 7.6 Monitoring Plans
- 7.7 Projected Budgets and Responsibilities

Chapter 8. Public Consultation and Disclosure

- 8.1 Planned activities in the investigation stage
 - 8.1.1 Stakeholder engagement methodologies
 - 8.1.2 Information disclosure
 - 8.1.3 Notifications prior to the PCMs
 - 8.1.4 Public participation (all methods)
- 8.2 Planned activities in reporting stage
 - 8.2.1 Compilation of ESIA Report
 - 8.2.2 Public Consultation Meetings
- 8.3 Responsible entities
- 8.4 Control of Documents
- 8.5 Recommendations for the PCMs

Chapter 9. Conclusions and Recommendations

- 9.1 Conclusions
- 9.2 Recommendations

- References
- Appendices
- Photo records

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

References

i) International Policies, Frameworks and Guidelines

1. International Union of Conservation of Nature. (2016). A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0. First edition.
2. International Finance Corporation. (2012). Performance Standard 6—Biodiversity Conservation and Sustainable Management of Living Natural Resources.
3. International Finance Corporation. (2017b). Environmental, Health and Safety Guidelines Ports, Harbours and Terminals.
4. International Union of Conservation of Nature. (2016). A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0. First edition.
5. United States Agency for International Development (USAID). (2017). Draft Guidelines on Public Participation in Myanmar's EIA Processes.
6. Agreement Between the Government of the Peoples Republic of China and the Government of the Union of Myanmar on the Promotion and Protection of Investments. Government of the Union of Myanmar (2001).
7. Agreement on Investment of the Framework Agreement on Comprehensive Economic Co-Operation Between the People's Republic of China and the Association of Southeast Asian Nations (ASEAN). Government of the Union of Myanmar. (2009).
8. International Finance Corporation (IFC). (2017). IFC's Environmental, Health and Safety (EHS) guidelines for Ports, Harbours and Terminals.
9. International Finance Corporation (IFC). (2012). International Finance Corporation (IFC)'s environmental and social performance standards.
10. International Finance Corporation (IFC). (2007). IFC's general Environmental, Health and Safety (EHS) guidelines (2007).
11. IFC World Bank Group. (n.d.). Environmental, Health, and Safety (EHS) Guidelines. GENERAL EHS GUIDELINES: COMMUNITY HEALTH AND SAFETY.
12. IFC. (2017). ENVIRONMENTAL, HEALTH, AND SAFETY GUIDELINES PORTS, HARBORS, AND TERMINALS Technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP).
13. International Finance Corporation. (2012). Performance Standard 6—Biodiversity Conservation and Sustainable Management of Living Natural Resources.
14. International Finance Corporation. (2017b). Environmental, Health and Safety Guidelines Ports, Harbours and Terminals.

ii) National Policies, Frameworks and Guidelines

1. Government of the Union of Myanmar, State and Order Restoration Council. (1992). Forest Law (No.8/92) Myanmar.
2. Government of the Union of Myanmar. (2015). Environmental Impact Assessment Procedure.
3. Ministry of Environmental Conservation and Forestry. (2015a). National Biodiversity Strategy and Action Plan.
4. Ministry of Environmental Conservation and Forestry. (2015a). National Biodiversity Strategy and Action Plan.
5. Ministry of Environmental Conservation and Forestry. (2015b). Environmental Impact Assessment Procedures (Notification No. 616/2015). Nay Pyi Taw, Myanmar.
6. Ministry of Environmental Conservation and Forestry. (2015b). Environmental Impact Assessment Procedures (Notification No. 616/2015). Nay Pyi Taw, Myanmar.
7. Ministry of Environmental Conservation and Forestry. (n.d.). National Environmental Quality (Emission) Guidelines.
8. Ministry of Environmental Conservation and Forestry. (n.d.). National Environmental Quality (Emission) Guidelines.

REFERENCES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

9. Ministry of Natural Resources and Conservation (MONREC). (2019). Project Proposal Report Guidelines.
10. Myanmar Climate Change Master Plan. (2018 – 2030).
11. Myanmar Climate Change Policy. (2019).
12. Myanmar Climate Change Strategy. (2018 – 2030).
13. Myanmar National Waste Management Strategy and Master Plan. (2018 – 2030).
14. Myanmar Sustainable Development Plan. (2018 – 2030).
15. National Biodiversity Strategy and Action Plan. (2015 – 2020).
16. National Environmental Policy of Myanmar. (2019).
17. National Environmental Quality (Emission) Guidelines. (2015).
18. National Land Use Policy. (2016).
19. National Sustainable Development Strategy. (2009).
20. Pyidaungsu Hluttaw. (2012). Environmental Conservation Law No. 9 / 2012.
21. Pyidaungsu Hluttaw. (2014). Myanmar Special Economic Zone Law No. 1/2014.
22. Republic of the Union of Myanmar. (2013). Framework for Economic and Social Reforms— Policy Priorities for 2012-15 towards the Long-Term Goals of the National Comprehensive Development *Plan*.
23. Republic of the Union of Myanmar. (2013). Framework for Economic and Social Reforms— Policy Priorities for 2012-15 towards the Long-Term Goals of the National Comprehensive Development *Plan*.
24. Republic of the Union of Myanmar. (2014). Myanmar National Social Protection Strategic Plan.
25. Republic of the Union of Myanmar. (2016a). National Land Use Policy.
26. Republic of the Union of Myanmar. (2016b). Economic Policy of the Union of Myanmar.
27. Republic of the Union of Myanmar. (2016c) Notification No. (85/2015-2016). Ministry of Industry—the Prevention of Hazard from Chemical and Related Substances Rules.
28. Republic of the Union of Myanmar. (2019). National Environmental Policy of Myanmar.
29. Republic of the Union of Myanmar—Ministry of Planning and Finance. (2018). Myanmar Sustainable Development Plan (2018-2030).
30. The Union of Myanmar. State Peace and Development Council. (2006). *The Conservation and Water Resources and Rivers Law* (No. 8/2006).

iii) Science Journals

1. Alongi, D.M., (2002). Present state and future of the world's mangrove forests. *Environmental conservation*, 29(3), 331-349.
2. Aung and Kuso, Toshihiro. (n.d.). *Newly Emerging Industrial Development Nodes in Myanmar: Port, Roads, Industrial Zones along Economic Corridors* in *Emerging Economic Corridors in the Mekong Region*. Ed. Masami Ishida, BRC Research Report No. 8, Bangkok Research Center, IDE-JETRO, Bangkok, Thailand.
3. Aung Myo Chit, (2016). *Dolphin Survey - Grow Back for Posterity Myanmar*
4. Aung, L.L., Zin E.E., Theingi, P., Elvera, N., Aung, P.P., Han, T.T., Oo, Y., Skaland, G.R. (2017). *Myanmar Climate Report*. Department of Meteorology and Hydrology, Ministry of Transport and communications, Government of the Republic of the Union of Myanmar; Norwegian Meteorological Institute, Norway:
5. Aye Aye Saw & Kanzaki, M. (2015). Local livelihoods and encroachment into a mangrove forest reserve: a case study of the Wunbaik reserved mangrove forest, Myanmar. *Kyoto University, Graduate School of Agriculture, Kyoto 606-8502, Japan*.
6. Aye, W. N, Tong, X. & Tun, A.W. (2022). Species diversity, Biomass and Carbon stock Assessment of Kanhlyashay Natural Mangrove Forest. *Forest 2022*.
7. Baxter, J. (2018). *Vegetation Sampling Using the Quadrat Method*. Department of Biological Science. College of Natural Sciences and Mathematics, Sacramento State.

REFERENCES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

8. Bibby, C. Jones, M., & S. Marsden. (1998). Expedition Field Techniques: Bird Surveys. Expedition Advisory Centre, Royal Geographical Society, 1 Kensington Gore, London.
9. C, Trozzi and R. Vaccaro. (2000). Environmental impact of port activities Maritime Engineering and Ports II. ISBN 1-85312-829-5
10. Cazenave, A., and Cozannet, G.L., (2014). Sea level rise and its coastal impacts. *Earth's Future*, 2(2), 15-34.
11. Chit, A.M. (2016). Dolphin Survey - Grow Back for Posterity Myanmar.
12. Cliff, D., Carter, P. (2016). Exploration of the Rakhine Basin, Pushing Out the Barriers with New 3D. Adapted from: Innovation in Geoscience: Unlocking the Complex Geology of Myanmar, AAPG/EAGE/MGS Conference, Innovation in Geoscience. Yangon, MM:AAPG Data pages Inc.
13. Curtis, J.T. and McIntosh, R.P. (1959). The Interrelations of Certain Analytic and Synthetic Phytosociological Characters. *Ecology*, 31(3): 434-455.
14. de Silva, P., Khan, W.A., Kanchanasaka, B., Reza Lubis, I., Feeroz, M.M. & Al-Sheikhly,
15. Doorn-Groen, S. M., & Foster, T. M. (2007). Environmental monitoring and management of reclamations works close to sensitive habitats. *Terra et Aqua*, 108, 3.
16. Gardner, S, P., Sidisunthorn & V. Anusarnsunthorn, (2000). A Field Guide to Forest Trees of Northern Thailand. Funded by IUCN, The world bank, Toyota Thailand Foundation, Kobfai Publishing Project.
17. Giesen, W. et. al. 2007. Mangrove Guidebook for Southeast Asia. Printed by Dharmasarn Co., Ltd. ISBN-974-7946-85-8.
18. Healy, T., Wang, Y., and Healy, J.A., (Eds.). (2002). Muddy coasts of the world: processes, deposits and function. *Elsevier*.
19. Holmes, K. E, Tint Tun, U et. al. (2014). Marine Conservation in Myanmar: Current knowledge and research recommendations. WCS Myanmar, Aye Yeik Mon, 1st Street, Ward 3, Building C1, Hlaing Township, Yangon, Myanmar.
20. Holmes, Katherine E., U Tint Tun, U Kyak Thinn Latt, Muresh Subedee, Spriya V. Khadke, Andrew E. Hostetler (2014). Marine Conservation in Myanmar: Current Knowledge and Research Recommendations. WCS and MSAM.
21. Horton., R., De Mel, M., Peters, D., Lesk, C., Bartlett, R., Helsingen, H., Bader, D., Capizzi, P., Martin, S. and Rosenzweig, C. (2016). Assessing Climate Risk in Myanmar. New York, NY, USA: Center for Climate Systems Research at Columbia University, WWF-US and WWF-Myanmar.
22. Hossain, M. M. M. (2004). National Report of Bangladesh on "Sustainable Management of the Bay of Bengal Large Marine Ecosystem (BOBLME) (GCP/RAS/179/WBG (FAO).
23. Hote Linn, U. (2017). Standard Nomenclature of Forest Plants, Myanmar. Second Edition, Nanthazin Press, No. (194), 39 Street, Kyauktatar Twonship, Yangon.
24. Hote Linn, U. (2018). Birds of Myanmar: Natural behavior and outstanding characteristics.
25. Humphrey, S.L. and Salm, R.V. (Eds.). (1996). Status of Sea Turtle Conservation in the Western Indian Ocean. Nairobi: IUCN/UNEP, Regional Seas Reports and Studies No. 165, 162pp.
26. Hundley, H.G. and U Chit Ko Ko. (1986). List of Trees, Shrubs, Herbs and Principal Climbers, etc. Recorded From Burma with Vernacular Names. 4th edition. Superintendent of Government Printing and Stationery, Rangoon.
27. Ilangakoon, A.D. and Tun, T., (2007): Rediscovering the Dugong Dugong dugon in Myanmar and capacity building for research and conservation. *The raffles Bulletin of Zoology*, 55(1): 195-199.
28. Jefferson, T. A.; Hung, S. K. (2004). "Neophocaena phocaenoides" (PDF). *Mammalian Species*. 746: 1–12
29. Joffre, O., and Aung, M. (2014). Fishery Value Chain Analysis in Rakhine State— Assessment for village level interventions. Oxfam.
30. John W.K.P & Tin Than U. (2003). A guide to the large mammals of Myanmar. WWF International and World Bank, Myanmar.

REFERENCES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

31. Kirwan, M.L. and Megonigal, J.P., (2013). Tidal wetland stability in the face of human impacts and sea-level rise. *Nature*, 504(7478), 53-60.
32. Ko Ko, T. (2019). Rakhine opens new beaches for hotel, tourism investments. Myanmar Times.
33. Kress, W. J, A. D. Robert, E. Farr, and D. Yin Yin Kyi. (2003). A Checklist of the Trees, Shrubs, Herbs, and Climbers of Myanmar. Smithsonian Institution, Washington DC. U.S.A.
34. Kusku, H., Yigit, M., Ergun et. al. (2018). Acoustic Noise Pollution from Marine Industrial Activities: Exposure and Impacts. *Aquatic Research*, 1(4), 148-161. DOI: 10.3153/AR 18017.
35. Kylar et al. (2012). Photographic Guide to the freshwater turtles and tortoise of Myanmar.
36. Ledec, G and P. J. Posas. (2003). Biodiversity Conservation in Road Projects: Lessons from World Bank Experience in Latin America. 8th International Conference on Low-Volum Roads, Reno, Nevada, U.S.A
37. Lynn K.S. (2010). Burma (Myanmar). In: Bird E.C.F. (eds) Encyclopedia of the World's Coastal Landforms. Springer, Dordrecht
38. MacKinnon, J., Verkuil, Y.I., and Murray, N. (2012). IUCN situation analysis on east and south-east Asian intertidal habitats, with particular reference to the Yellow Sea (including the Bohai Sea). Occasional paper of the IUCN species survival commission, 47.
39. Maung, W & W. K. Ko. (2002). Turtle and Tortoise of Myanmar. Wildlife Conservation Society, Myanmar Program.
40. Min, K. (2013). *China-Myanmar Gas Pipeline Becomes Fully Operational*. Myanmar Business Today.
41. Mjelde, M., Ballot, A., Swe, T., Eriksen, E.T., Nesheim, I., Aung., T.T. (2017). Integrated Water Resources Management in Myanmar. Water usage and introduction to water quality criteria for lake and rivers in Myanmar. Preliminary report. Oslo,
42. Murray, N.J., Keith, D.A., Tizard, R., Duncan, A., Htut, W.T., Hlaing, N., Oo, A.H., Ya, K.Z., Grantham, H. (2020). Threatened ecosystems of Myanmar. An IUCN Red List of Ecosystems Assessment. Version 1.0. Wildlife Conservation Society. ISBN: 978-0-9903852-5-7
43. Murray, N.J., Phinn, S.R., DeWitt, M., Ferrari, R., Johnston, R., Lyons, M.B., Clinton, N., Thau, D., and Fuller, R.A. (2019). The global distribution and trajectory of tidal flats. *Nature*, 565(7738), 222.
44. Naidoo, G. (2006). Factors Contributing to Dwarfing in the Mangrove *Avicennia marina*. *Annals of Botany Journal*, Oxford University Press, U.S.A.
45. O.F. (2015). *Lutrogale perspicillata*. *The IUCN Red List of Threatened Species 2015*.
46. Pe, M. (2004) *NATIONAL REPORT OF MYANMAR On the Sustainable Management of the Bay of Bengal Large Marine Ecosystem (BOBLME)—GCP/RAS/179/WBG*.
47. Platt, S.G., K. Platt, et. al. (2012). Photographic Guide to the freshwater turtles and tortoise of Myanmar. Private printed in Yangon, Myanmar.
48. Richards, D.R., and Friess, D.A. (2015). Rates and drivers of mangrove deforestation in South-east Asia, 2000–2012. *Proceedings of the National Academy of Sciences*, 113(2), 344–349.
49. Riitters, Kurt H. (2007). Forest Fragmentation. Pages 9-15 In: Forest health monitoring: 2005 national technical report. General Technical Report SRS-104. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station.
50. Rosenberg, M. (2020). "Differences Between Hills and Mountains." M.A., Geography, California State University – Northridge, B.A., Geography, University of California - Davis
51. S., L. García-Menéndez and O. Merk. (2013). Environmental impacts of ports OECD del Saz-Salazar, "The Port and its Environment: Methodological Approach for Economic Appraisal", OECD Regional Development Working Papers, 2013/24, OECD Publishing.
52. Sindhu, B., and Unnikrishnan, A.S. (2013). Characteristics of tides in the Bay of Bengal. *Marine Geodesy*, 36(4), 377–407.
53. Smith, M. L. (2003). Aquatic Ecology in Environmental Impact Assessment. EIA Guideline Series. The Ecology Lab P/L, 4 Green Street, Brookvale NSW 2100.
54. Snelgrove, P. V. (1997). The importance of marine sediment biodiversity in ecosystem processes. *Ambio*, 578-583.

REFERENCES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

55. Soe-Htun U., San-Tha-Htun U., Mu-Mu-Aye, D., Win, D. L-L., & Ohno, M. (2001). Notes on seagrasses along Myanmar Coastal Regions. *Bulletin of Marine Sciences and Fisheries*, Kochi University, 21, 13.
56. Soe-Htun, U. (1998). The seaweed resources of Myanmar. *Seaweed resources of the world*. Kanakawa International Fisheries Training Center, Japan International Cooperation Agency (JICA), 99-105.
57. Spalding, M., Kainuma, M. and Collins, L. [eds.]. (2010). *World atlas of mangroves*.
58. Stanley O and J. Broadhead. (2011). *Integrated Mangrove Management Plan for Wunbaik Reserved Forest*. Yangon.MIN.
59. Stanley, D., Broadhead, J. and Myint, A. (2011). *The atlas and guidelines for mangrove management in Wunbaik reserved forest*, UNFAO, Myanmar Publication 2011/04.
60. Thein, M., Myint, T., Tun, S. T., & Swe, T. L. (2009). Earthquake and tsunami hazard in Myanmar. *Journal of Earthquake and Tsunami*, 3(02), 43-57.
61. Thompson, R.C., Crowe, T.P., and Hawkins, S.J. (2002). Rocky intertidal communities: past environmental changes, present status and predictions for the next 25 years. *Environmental Conservation*, 29(2), 168-191.
62. Tin Than, U. (n.d.). *Large mammals of Myanmar*.
63. Tomlinson, P. B. (1986). *Earthscan*. London, UK. 319 pp. *The Botany of Mangroves*. Cambridge university press, Cambridge. 413pp
64. Tun Yin, U. (1993). *Wild mammals of Myanmar*. Forest Department, Myanmar.
65. Wang, Y. (2013). *Earthquake Geology of Myanmar*. Dissertation (Ph.D.), California Institute of Technology.
66. Win Mg and Win Ko Ko. (2002). *Turtle and Tortoise of Myanmar*.
67. Young Myanmar researchers. (2019-20). *Marine mammals in the Gulf of Mottama*
68. Zau Lunn. (2012). Status and challenges of coral reef monitoring in Myanmar. ICRI (International Coral Reef Initiative) East Asia Regional Workshop - 8th_EARW. Jeju, Korea: Biodiversity and Nature Conservation (BANCA) & Fauna & Flora International (FFI).
69. Zaw, K., Swe, W., Barber, A. J., Crow, M. J., & Nwe, Y. Y. (2017). Introduction to the geology of Myanmar. *Geological Society, London, Memoirs*, 48(1), 1-17.
70. Zaw, Than, Aung Moe, Myint Ko and Ye Myint Wse. (2018). Groundwater Resources in Myanmar in Mukherjee, Abhijit.ed. *Groundwater of South Asia*. Springer
71. Zöckler, C., Aung, P.P., Grindley, M., Aung Ch. & Momberg, F. (2018). *Coastal wetlands in Myanmar – a directory of important sites for biodiversity*. ArcCona Ecological Consultants, Cambridge, UK.

iv) Reports and Periodicals

1. Asian Disaster Preparedness Centre. (2011). *Multi-Hazard Risk Assessment in the Rakhine State of Myanmar*.
2. Baltic Marine Environment Protection Commission. (2016). *Underwater noise mitigation measures*. Fifth Meeting of the Working Group on Reduction of Pressures from the Baltic Sea Catchment Area, Warsaw, Poland, 25-27 October 2016.
3. *Baseline Assessment Report Terrestrial Biodiversity*. Strategic Environmental Assessment of the Hydropower Sector in Myanmar. Washington, DC: International Finance Corporation. (2017).
4. CITIC Consortium. (2015). *Technical & Financial Proposal for Development of Deep-Sea Port (DSP) At Kyauk Phyu Special Economic Zone, Myanmar*.
5. Environmental Resources Management. (2017). *Environmental and Social Impact Assessment (ESIA) for Future Development of Shwe Project—Scoping Report*.
6. GHD. (2013). *Environmental Best Practice: Port Development: An Analysis of International Approaches*, report prepared for the Department of Sustainability, Environment, Water, Population and Communities, Canberra, Australia.
7. Health and Safety Executive. (n.d.). *A quick guide to health and safety in ports*. a web-friendly version of leaflet INDG446, published 01/11

REFERENCES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

8. ICRC. (2021). International Coral Reef Initiative.
9. IFC. (2017 – 2021). SUB-BASIN EVALUATION: Strategic Environmental Assessment of the Hydropower Sector in Myanmar. Pennsylvania Avenue, N.W., Washington D.C.20433
10. Institute of Marine Research. (2014). MYANMAR Ecosystem Survey.
11. International Federation of Red Cross and Red Crescent Societies. (2010). DREF Operation—Myanmar: Cyclone Giri.
12. International Federation of Red Cross and Red Crescent Societies. (2010). DREF Operation—Myanmar: Cyclone Giri.
13. International Finance Corporation. (2017). Baseline Assessment Report Terrestrial Biodiversity. Strategic Environmental Assessment of the Hydropower Sector in Myanmar. Washington, DC:
14. International Union for Conservation of Nature (IUCN). (2019). Report: More than 300 species in Myanmar, Endanger. Myanmar.
15. International Union for Conservation of Nature (IUCN). (2021). IUCN's Red List version 2021-3 (2020-2021): Table 7. Species changing IUCN Red List Status, Last Updated: 09 December 2021, Pdf Format.
16. International Union for Conservation of Nature (IUCN). (2021). Red List version 2021-3., 2020-2021. Species changing IUCN Red List Status, Last Updated: 09 December 2021, Table 7, Pdf Format.
17. International Union for Conservation of Nature. (2019). Red List of Threatened Species. Red listed Terrestrial Species of Concern around Yanbye Island.
18. Kerry Myanmar Environmental & Social Review Summary Project Number 39743 Company Name KM TERMINAL AND LOGISTICS LIMITED, Date ESRS Disclosed Mar 26, 2018 Country Myanmar
19. Kyauk Phyu Special Economic Zone Management Committee. (2014). [presentation] Kyauk Phyu Special Economic Zone Development—Road Show, Yangon, MYANMAR.
20. Marine Geodesy. (n.d.). 36:4, 377-407.
21. Ministry of Immigration and Population—Department of Population. (2015). The 2014 Myanmar Population and Housing Census. The Union Report—Census Report Volume 2.
22. Ministry of Planning and Finance. 2019. Myanmar Sustainable Development Plan.
23. Myanma Annawa Swan and Shin Group (S) Company Ltd. (2016). Myanmar Port, Environmental & Social Review Summary Project Number 37126: Date ESRS Disclosed Jan 28, 2016 Country Myanmar
24. Myanmar Center for Responsible Business. (2016) Briefing Paper: Indigenous Peoples' Rights and Business in Myanmar.
25. Myanmar Centre for Responsible Business. (2018). Biodiversity in Myanmar, including Protected Areas and Key Biodiversity Areas. Supplement to MCRB's Briefing Paper on Biodiversity, Human Rights and Business.
26. Myanmar Environment Institute. (2017). Kyauk Phyu Township Environmental Impact Assessment.
27. Myanmar Environment Institute. (2017). Kyuakpyu Township Environmental Assessment.
28. Myanmar Naval Hydrographic Centre. (2014a). *Myanmar Rakhine Coast: Gadechy Harbour*, (1: 25000) surveyed by Myanmar Naval Hydrographic Center- February 2014.
29. Myanmar Naval Hydrographic Centre. (2014b). *Myanmar Rakhine Coast: Kyauk Phyu Harbour Approach*, (1:25000) surveyed by Myanmar Naval Hydrographic Center- January 2014.
30. Norway: Norwegian Institute. (n.d.) Norwegian Institute for Water Research
31. Ospar. (2008). Assessment of the environmental impact of land reclamation. Ospar Commission.
32. Ports Primer: 7.1 Environmental Impacts US EPA
33. Republic of the Union of Myanmar—Department of Population. (2014). The 2014 Myanmar Population and Housing Census—The Union Report—Census Report Volume 2.

REFERENCES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

34. The International Union for Conservation of Nature's Red List of Threatened Species (IUCN). (2019). Red listed Terrestrial Species of Concern around Yanbye Island. Retrieved from iucnredlist.org/ accessed on June 26, 2019.
35. UNEP-WCMC, Short, F.T. (2021). Global distribution of seagrasses (version 7.1). Seventh update to the data layer used in Green and Short (2003). Cambridge (UK): UN environment world conservation monitoring centre.
36. WCS. (2014). Marine Conservation in Myanmar - The current knowledge of marine systems and recommendations for research and conservation.
37. WCS. (2019). Preliminary survey for marine protected area (MPA) in western Myanmar coast (Nathar Kyun and Manaung Islands).
38. Wildlife Conservation Society (WCS). 2019. Report of Preliminary Survey for MPA in Western Myanmar Coast.
39. Wildlife Conservation Society. (2019). Preliminary Survey for MPA in Western Myanmar Coast (Nathar Kyun and Manaung Islands).

v) Websites

1. <https://dmediag.com>
2. <https://ecd.gov.mm>
3. <https://ecomatcher.com>
4. <https://forestecosyst.springeropen.com>
5. <https://handbook.iwc.int>
6. <https://ifc.org>
7. <https://imo.org>
8. <https://iucnredlist.org>
9. <https://moali.gov.mm>
10. <https://monrec.gov.mm>
11. <https://myanmar.gov.mm>
12. <https://nationalgeographic.org>
13. <https://seeturtles.org>
14. <https://serc.carleton.edu>
15. <https://thebluecarboninitiative.org>
16. <https://un.org>
17. <https://www.cnpc.com.cn/en/myan-marcsr/201407/f115a1cc6cdb4700b55def91a0d11d03/files/dec09c5452ec4d2ba36ee33a8efd4314.pdf>
18. <https://www.cnpc.com.cn/en/myan-marcsr/201407/f115a1cc6cdb4700b55def91a0d11d03/files/dec09c5452ec4d2ba36ee33a8efd4314.pdf>
19. https://supremegroupcompanies.com/wp-content/uploads/2020/06/Kyaukphyu-135-MW-CCPP-EIA_Final.pdf
20. <https://www.offshore-technology.com/projects/shwe-natural-gas-project/>
21. <https://www.myanmaritv.com/news/gas-fired-power-supply-plants-kyaukphyu-produce-285-mw>

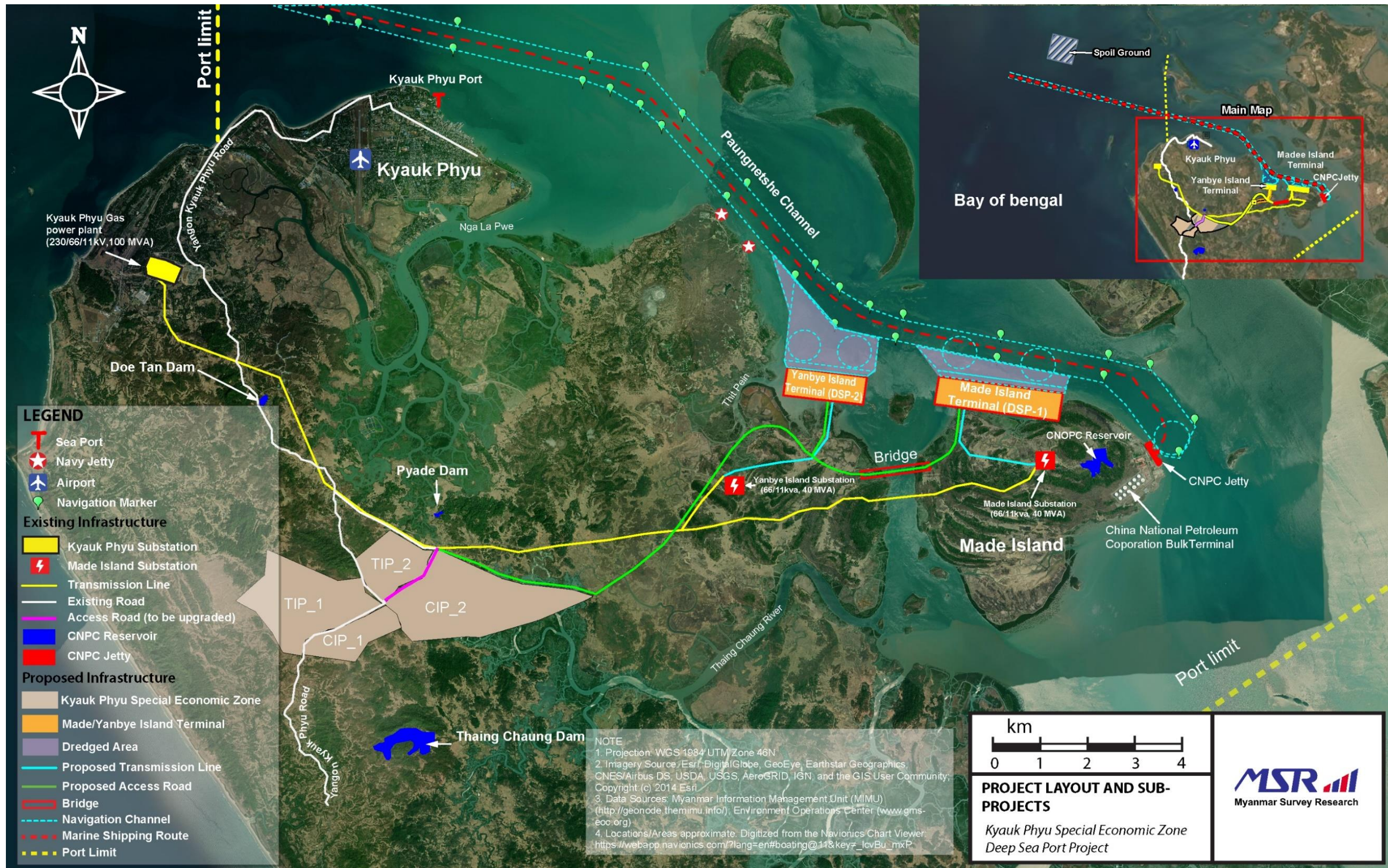
APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Appendices

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

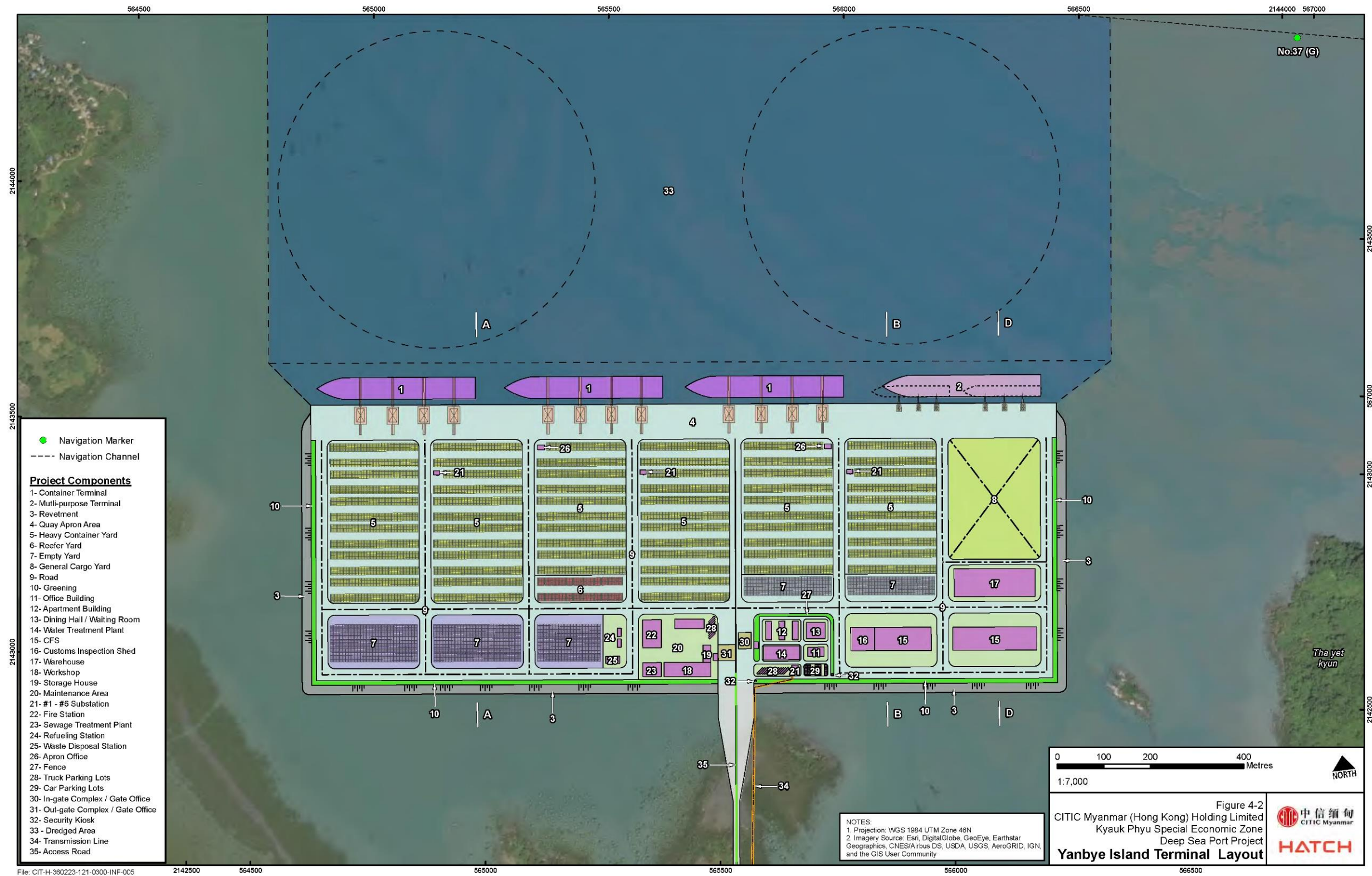
Appendix 1: Project Layout



APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

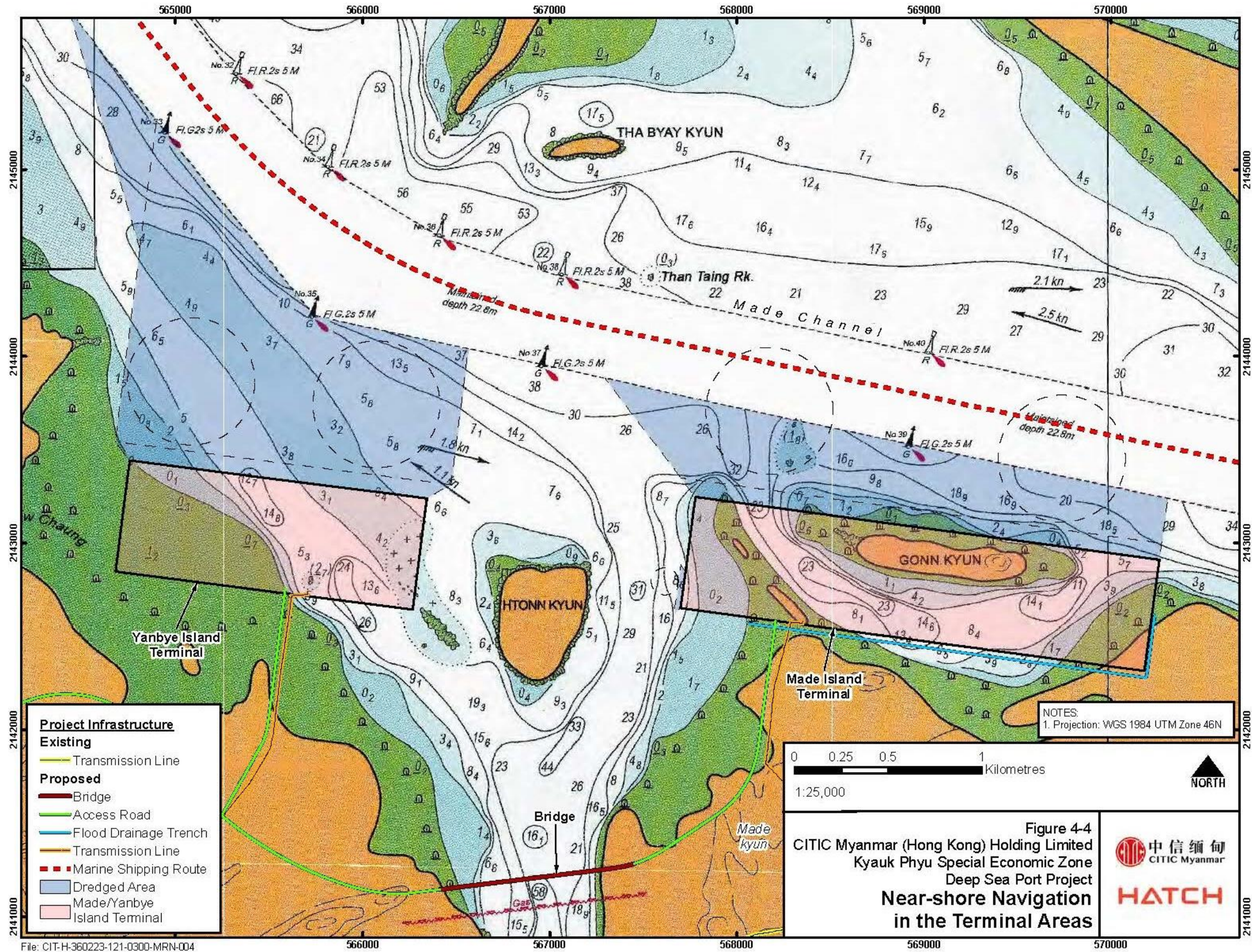
Appendix 2: Yanbye Island deep sea port layout



APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

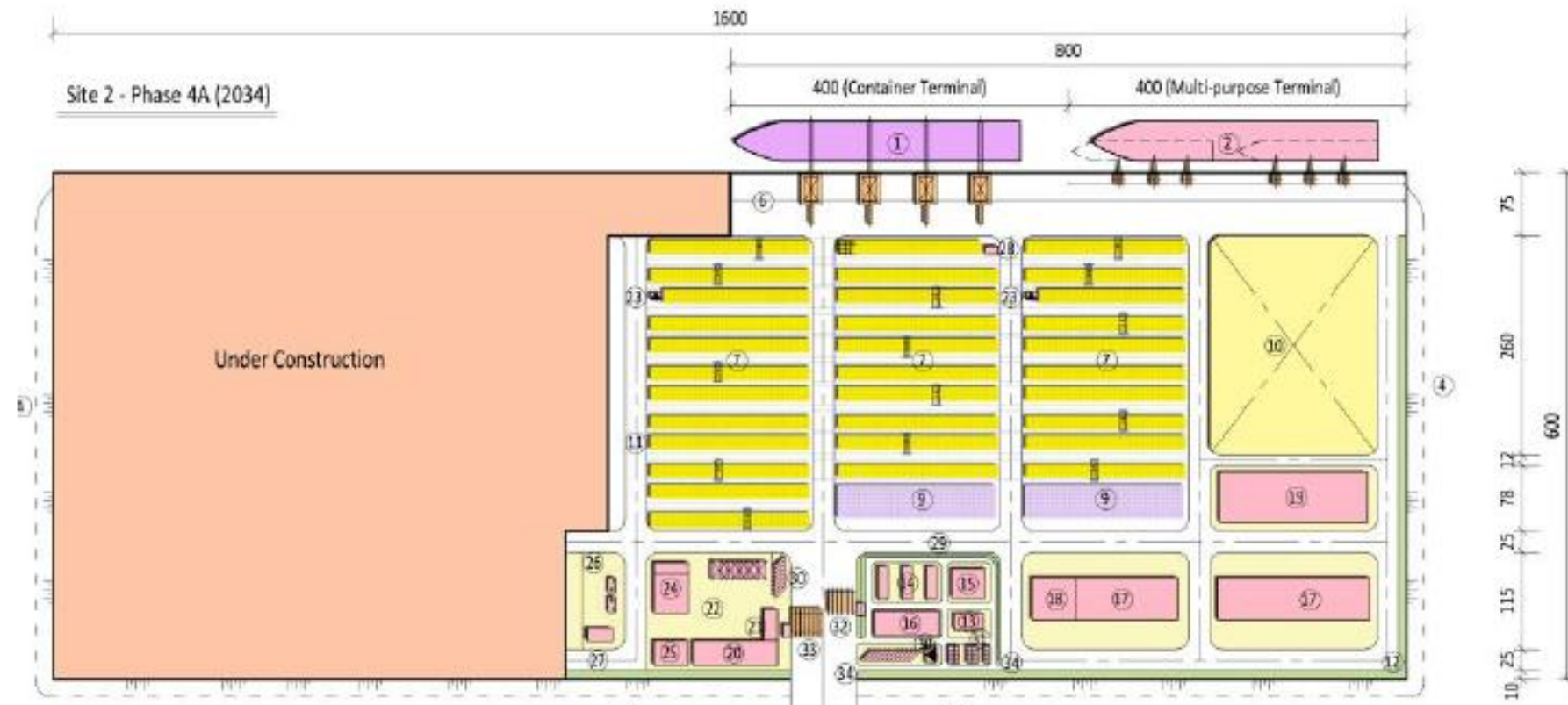
Appendix 4: Near-Shore Navigation in the Terminal Areas



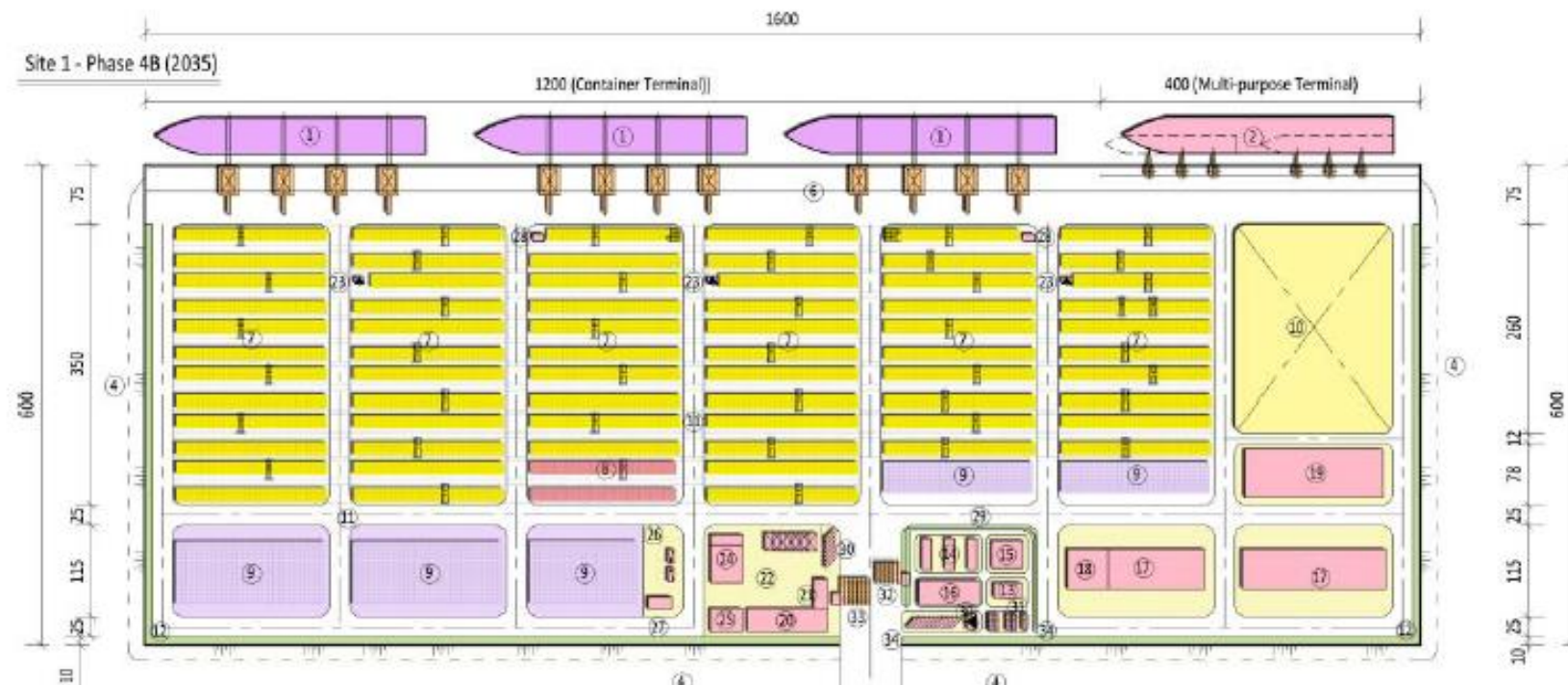
Appendix 5: Layout of Phase 4 A

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)



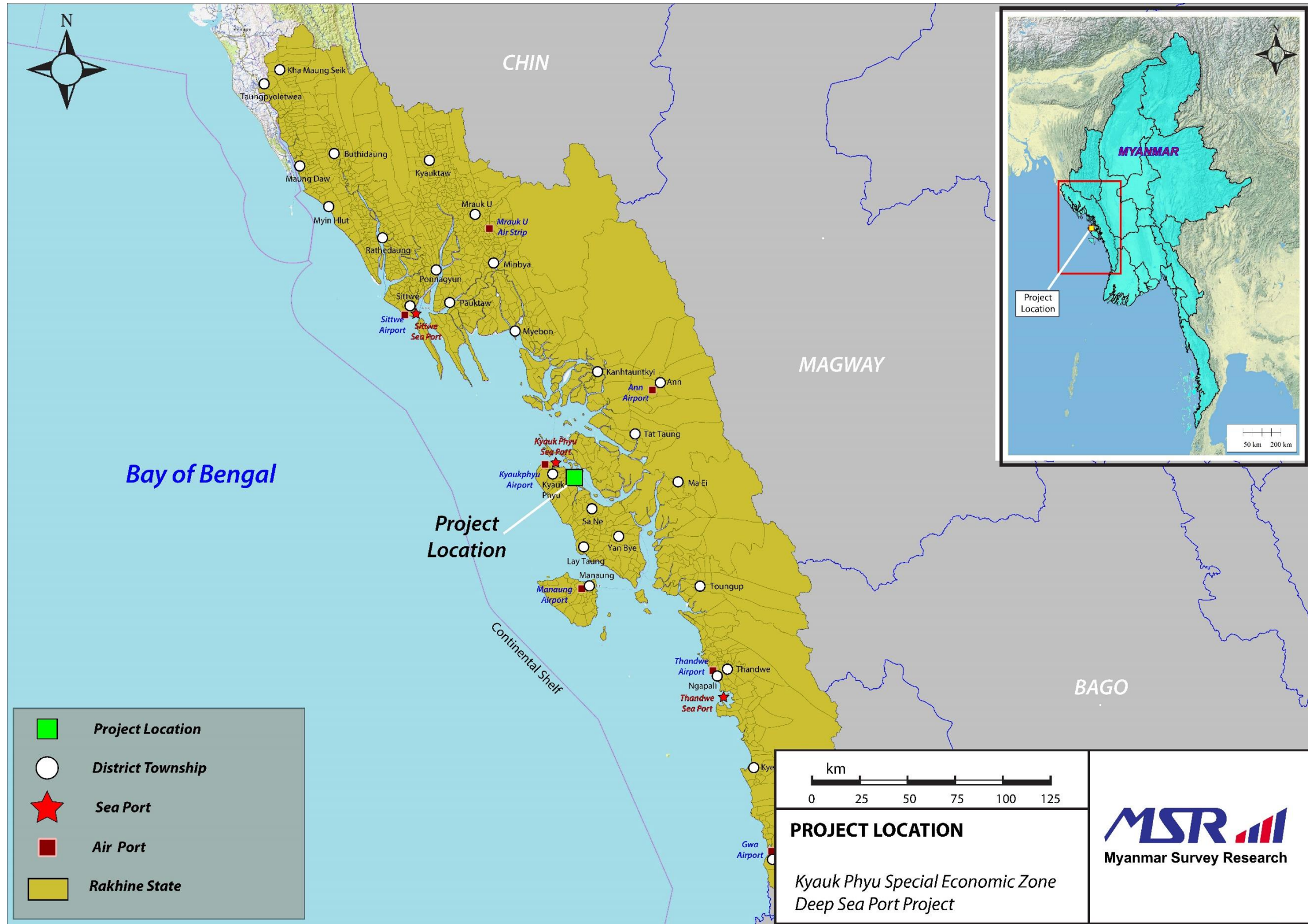
Appendix 6: Layout of Phase 4 B



Appendix 7: Project Location

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

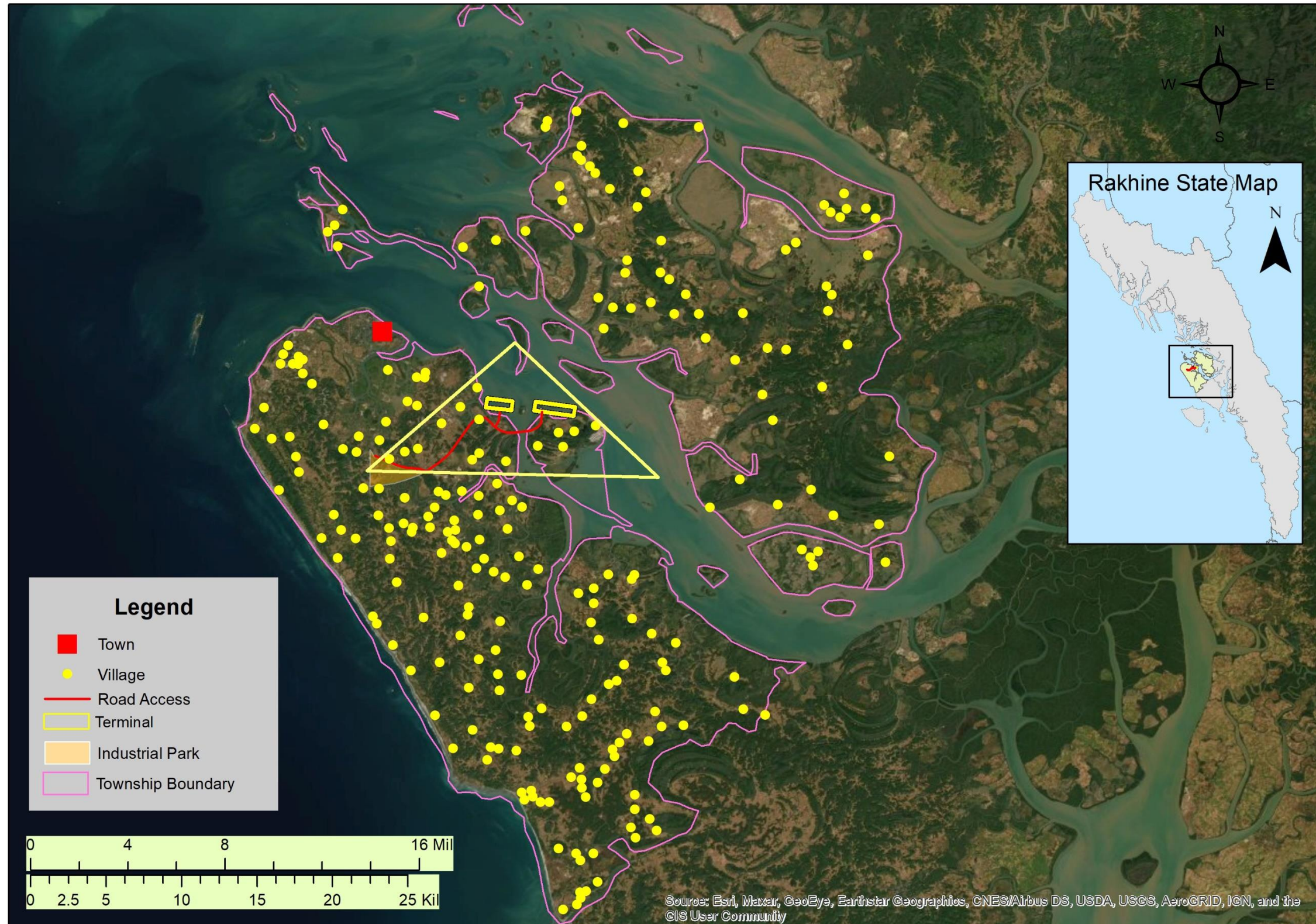


MSR CONSORTIUM



KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

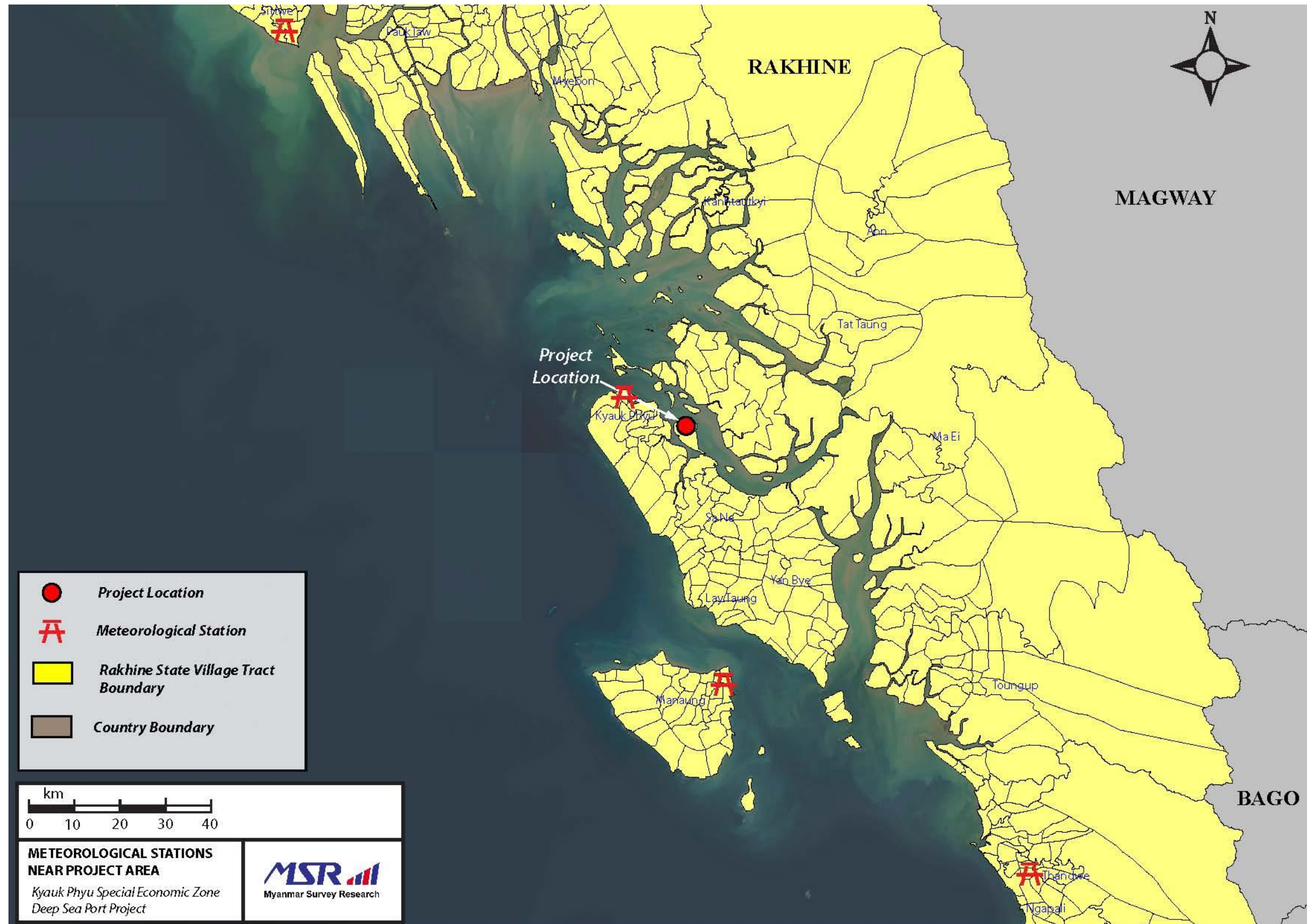
Appendix 8: Location of Villages in Inner zone and Outer zone of the Project site



APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Appendix 9: Meteorological Stations in the Project Area

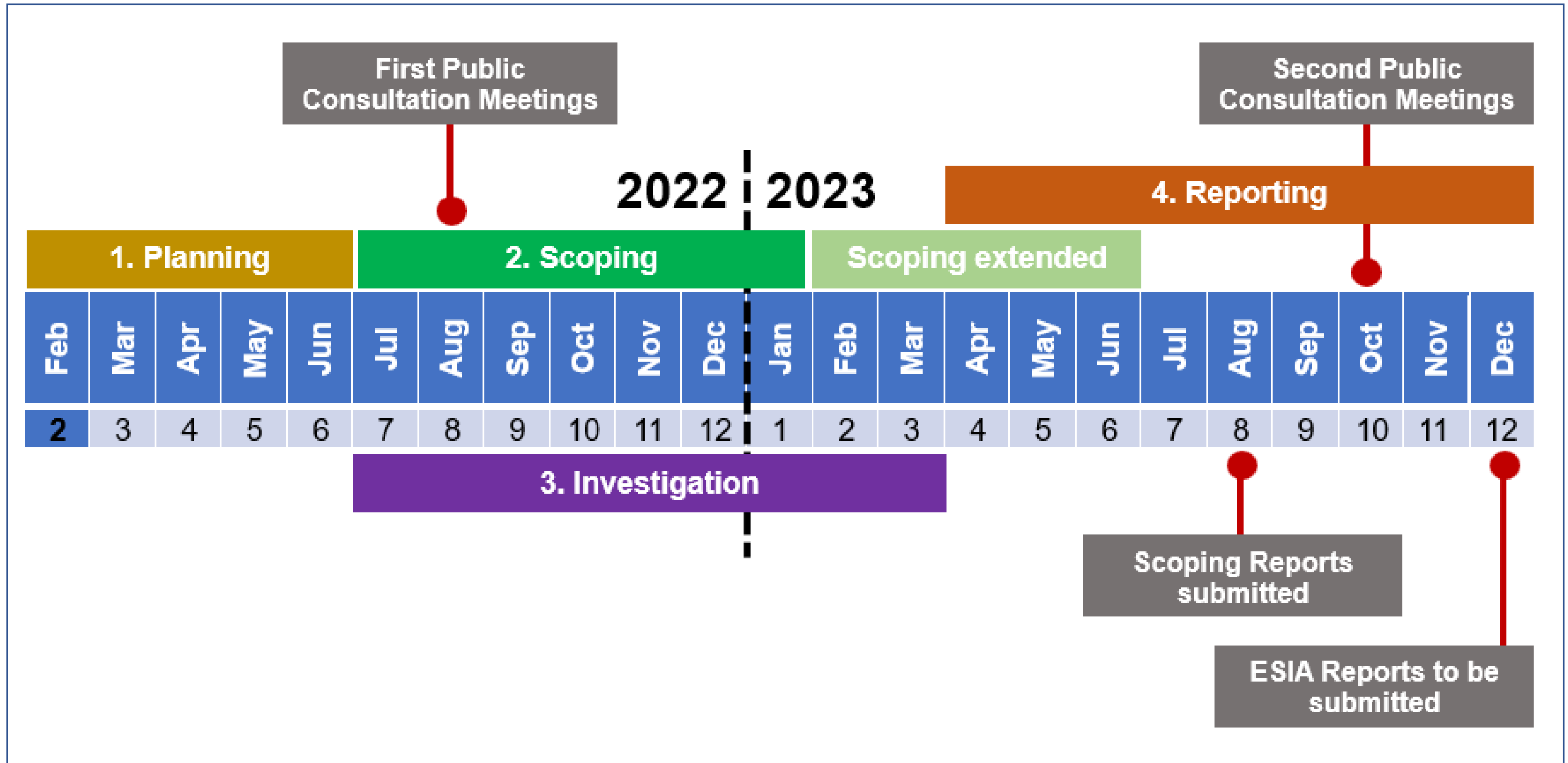


MSR CONSORTIUM



KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Appendix 10: Overall schedule for conducting the Environmental and Social Impact Assessment



APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Appendix 11: Baseline Air Quality Sampling Result

Sr/No	Parameters	AQ - 1								NEQG Guidelines Values	International Stds
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average		
1	PM ₁₀ (24Hrs) µg/m ³	13.5	9.8	11.8	8.1	9.1	10.3	12.6	10.3	50 µg/m ³	WHO
2	PM _{2.5} (24Hrs) µg/m ³	5.7	3.2	5.1	2.3	3.4	2.2	3.7	3.3	25 µg/m ³	WHO
3	CO (8Hrs) ppm	0.9	0.6	0.8	0.6	1	0.8	0.9	0.8	9 ppm	US.EPA
4	NO ₂ (1Hr) µg/m ³	0.2	24.1	1	1	0.4	0.3	0.2	3.9	200 µg/m ³	WHO
5	SO ₂ (24Hrs) µg/m ³	1	16.2	0	0	0.4	2.6	0	2.9	20 µg/m ³	WHO
6	O ₃ (8Hrs) µg/m ³	20.1	18.9	18.3	17.7	19	19.8	20.4	19.0	100 µg/m ³	WHO

Sr/No	Parameters	AQ - 2								NEQG Guidelines Values	International Stds
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average		
1	PM ₁₀ (24Hrs) µg/m ³	33.2	25.8	28.5	20.7	25.5	22.7	34.3	27.2	50 µg/m ³	WHO
2	PM _{2.5} (24Hrs) µg/m ³	29	22.4	24.6	19.4	23.7	20.8	27.2	23.9	25 µg/m ³	WHO
3	CO (8Hrs) ppm	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	9 ppm	US.EPA
4	NO ₂ (1Hr) µg/m ³	9.8	4.9	3	9.8	828.4	6.2	9.2	124.5	200 µg/m ³	WHO
5	SO ₂ (24Hrs) µg/m ³	9.7	15.7	1	25.2	4.1	1.5	50.2	15.3	20 µg/m ³	WHO
6	O ₃ (8Hrs) µg/m ³	14.6	38.6	26.8	32.3	25.4	17.3	19.9	25.0	100 µg/m ³	WHO

Sr/No	Parameters	AQ - 3								NEQG Guidelines Values	International Stds
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average		
1	PM ₁₀ (24Hrs) µg/m ³	17.8	17.5	26.6	32.2	28.3	26.6	17.9	23.8	50 µg/m ³	WHO
2	PM _{2.5} (24Hrs) µg/m ³	8.6	6.8	11.8	11	9.9	9.7	8.4	9.5	25 µg/m ³	WHO
3	CO (8Hrs) ppm	0.9	0.8	1.3	0.8	1.3	1.6	0.6	1.0	9 ppm	US.EPA
4	NO ₂ (1Hr) µg/m ³	6	1	1	2	9	5	16	5.7	200 µg/m ³	WHO
5	SO ₂ (24Hrs) µg/m ³	0	1.1	43.8	2.3	58.2	87.4	0	27.5	20 µg/m ³	WHO
6	O ₃ (8Hrs) µg/m ³	23	21.2	17.8	18.2	20	17.7	23.1	20.1	100 µg/m ³	WHO

MSR CONSORTIUM



Independent
Engineers

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr/No	Parameters	AQ - 4								NEQG Guidelines Values	International Stds
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average		
1	PM ₁₀ (24Hrs) µg/m ³	11.5	13.1	14	15.1	9.8	11.8	11.7	12.4	50 µg/m ³	WHO
2	PM _{2.5} (24Hrs) µg/m ³	4.7	4.1	4	5.3	2.6	3.5	3.8	4.0	25 µg/m ³	WHO
3	CO (8Hrs) ppm	1.9	1.4	1.1	1.2	1.7	1.2	1.4	1.4	9 ppm	US.EPA
4	NO ₂ (1Hr) µg/m ³	2	15	1	1	3	2	1	3.6	200 µg/m ³	WHO
5	SO ₂ (24Hrs) µg/m ³	76.7	12.1	5.2	2.2	11.6	43.8	13.8	23.6	20 µg/m ³	WHO
6	O ₃ (8Hrs) µg/m ³	15.8	16.8	16.2	18.3	19	17.9	16.1	17.2	100 µg/m ³	WHO

Sr/No	Parameters	AQ - 5								NEQG Guidelines Values	International Stds
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average		
1	PM ₁₀ (24Hrs) µg/m ³	40.8	45.3	36.6	37.4	36.7	39.2	37	39.0	50 µg/m ³	WHO
2	PM _{2.5} (24Hrs) µg/m ³	33.3	35.3	30.5	31.1	30.3	29.9	28.6	31.3	25 µg/m ³	WHO
3	CO (8Hrs) ppm	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	9 ppm	US.EPA
4	NO ₂ (1Hr) µg/m ³	2.8	2.1	2.7	2.5	2.4	3.1	2.6	2.6	200 µg/m ³	WHO
5	SO ₂ (24Hrs) µg/m ³	52.3	21.9	25.8	17.3	31.6	60.6	27.8	33.9	20 µg/m ³	WHO
6	O ₃ (8Hrs) µg/m ³	16.9	11.3	15.2	15.2	18.8	21.8	16.8	16.6	100 µg/m ³	WHO

MSR CONSORTIUM



Independent
Engineers

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Sr/No	Parameters	AQ - 6								NEQG Guidelines Values	International Stds
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average		
1	PM ₁₀ (24Hrs) µg/m ³				40.2					50 µg/m ³	WHO
2	PM _{2.5} (24Hrs) µg/m ³				32.5					25 µg/m ³	WHO
3	CO (8Hrs) ppm				0.1					9 ppm	US.EPA
4	NO ₂ (1Hr) µg/m ³				5.6					200 µg/m ³	WHO
5	SO ₂ (24Hrs) µg/m ³				4.9					20 µg/m ³	WHO
6	O ₃ (8Hrs) µg/m ³				53.4					100 µg/m ³	WHO

Sr/No	Parameters	AQ - 7								NEQG Guidelines Values	International Stds
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average		
1	PM ₁₀ (24Hrs) µg/m ³	37.5	36.3	42.6	51.2	50.4	34.1	37.7	41.4	50 µg/m ³	WHO
2	PM _{2.5} (24Hrs) µg/m ³	28.5	32.4	30.8	41.1	33.8	28.3	28	31.8	25 µg/m ³	WHO
3	CO (8Hrs) ppm	0.1	0	0.1	0.1	0	0	0.1	0.1	9 ppm	US.EPA
4	NO ₂ (1Hr) µg/m ³	2	2	2	2	2	2	2.1	2.0	200 µg/m ³	WHO
5	SO ₂ (24Hrs) µg/m ³	1.3	1.8	2.2	8.5	1.2	1	1.8	2.5	20 µg/m ³	WHO
6	O ₃ (8Hrs) µg/m ³	19.3	7.4	3.9	12.5	13.6	5	22.2	12.0	100 µg/m ³	WHO

MSR CONSORTIUM



Independent
Engineers

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Appendix 12: Baseline Noise Quality Sampling Result

NQ - 1

Noise Level		Date							
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average
Leq in dBA	Leq Day	75.8	70.7	73.4	78.5	83.7	72	70.3	74.9
	Leq Night	74.6	68.6	71.9	77.3	80.8	73.5	72	74.1
	Leq Total	75.4	70	72.9	78.1	82.8	72.6	71	74.7
Lmax in dBA	Lmax Day	54.8	53.7	58.4	62.4	59	53.5	53.3	56.4
	Lmax Night	64.1	58.3	59.7	64.8	68.4	63.4	61.7	62.9
	Lmax Total	58.5	55.5	58.9	63.3	62.7	57.5	56.6	59.0
Level of Noise in 24 Hrs dBA	Average	57.8	55.1	58.6	63	61.7	56.9	56.2	58.5
	Maximum	73.6	67.1	69.4	74.5	81.9	69.8	67	71.9
	Minimum	44.5	44.8	46.3	46.2	46.4	45.4	43.2	45.3
	Median	59.3	55.4	59.4	62.3	62.4	58.1	57.9	59.3

Receptor	One Hour Leq (dBA)	
	Day Time 07:00 - 22:00 (10:00 - 22:00 for Public Holiday)	Night Time 22:00 - 7:00 (22:00 - 10:00 for Public Holiday)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

NQ - 2

Noise Level		Date							
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average
Leq in dBA	Leq Day	68.7	60.2	62.8	75.2	76.6	69.4	68.3	68.7
	Leq Night	72.5	65.1	64.3	67.7	76	69.3	67.9	69.0
	Leq Total	70.5	62.7	63.4	73.6	76.4	69.4	68.1	69.2
Lmax in dBA	Lmax Day	52.4	47.8	49.5	57.5	54.2	50.8	52.3	52.1
	Lmax Night	58.1	53	53.7	55.8	63.9	57.6	56.5	56.9
	Lmax Total	54.6	49.8	51.1	56.9	58.1	53.5	53.9	54.0
Level of Noise in 24 Hrs dBA	Average	54.1	49.7	51	56.44	57.3	53	53.6	53.6
	Maximum	70.1	61.1	58.3	70.6	74.4	67.6	63.4	66.5
	Minimum	46.1	44.4	43.2	45.8	44.6	45.2	45.2	44.9
	Median	53.2	49	51.1	55.4	56.2	50.9	54.7	52.9

Receptor	One Hour Leq (dBA)	
	Day Time 07:00 - 22:00 (10:00 - 22:00 for Public Holiday)	Night Time 22:00 - 7:00 (22:00 - 10:00 for Public Holiday)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

NQ - 3

Noise Level		Date							
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average
Leq in dBA	Leq Day	69.5						68.7	69.1
	Leq Night	65.8						72.5	69.2
	Leq Total	68.4						70.5	69.5
Lmax in dBA	Lmax Day	52.8						52.4	52.6
	Lmax Night	53.9						58.1	56.0
	Lmax Total	53.2						54.6	53.9
Level of Noise in 24 Hrs dBA	Average	53						52.6	52.8
	Maximun	67.3						75.3	71.3
	Minimum	45.7						44.1	44.9
	Median	52.1						49.3	50.7

Receptor	One Hour Leq (dBA)	
	Day Time 07:00 - 22:00 (10:00 - 22:00 for Public Holiday)	Night Time 22:00 - 7:00 (22:00 - 10:00 for Public Holiday)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

NQ - 4

Noise Level		Date							
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average
Leq in dBA	Leq Day	64.4	64.8	62.1	59.8	61.4	64	66.6	63.3
	Leq Night	65.2	63.4	64.2	62	62.9	60.9	67.6	63.7
	Leq Total	64.7	64.3	63	60.8	62	63	67	63.5
Lmax in dBA	Lmax Day	50	50	48.5	46.1	48.4	43.9	50.8	48.2
	Lmax Night	54.4	52.8	54.5	52.2	53.1	51.2	55.4	53.4
	Lmax Total	51.7	51.1	50.9	48.5	50.2	50	52.6	50.7
Level of Noise in 24 Hrs dBA	Average	51.5	50.9	50.6	48.2	50	49.8	52.3	50.5
	Maximun	60.6	60	57	55	55.1	58.2	63.7	58.5
	Minimum	44.5	40.3	39.5	40.1	42.8	42.7	43.4	41.9
	Median	51	51.2	53.3	48	50.3	50.3	51.6	50.8

Receptor	One Hour Leq (dBA)	
	Day Time 07:00 - 22:00 (10:00 - 22:00 for Public Holiday)	Night Time 22:00 - 7:00 (22:00 - 10:00 for Public Holiday)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

MSR CONSORTIUM

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

NQ - 5

Noise Level		Date							
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average
Leq in dBA	Leq Day	63	62.4	59.5	67.4	60.8	62.5	67.7	63.3
	Leq Night	63.4	68.9	59.2	61.8	61.3	61.5	73	64.2
	Leq Total	63.1	66	59.4	66	61	62.2	70.5	64.0
Lmax in dBA	Lmax Day	50.7	48.5	46.8	52.8	48.7	50	51.8	49.9
	Lmax Night	53.3	57.1	49.4	51.5	51.1	51.2	52.5	52.3
	Lmax Total	51.7	51.9	47.8	52.3	49.6	50.4	52.1	50.8
Level of Noise in 24 Hrs dBA	Average	51.7	51.6	47.7	52.2	49.6	50.3	51.7	50.7
	Maximun	56	63.4	54	62.9	55.3	55.5	72.7	60.0
	Minimum	47.5	44.8	43.3	46.5	46.4	46.3	46.1	45.8
	Median	51.4	48.8	46.9	50.8	49.1	49.4	49.8	49.5

Receptor	One Hour Leq (dBA)	
	Day Time 07:00 - 22:00 (10:00 - 22:00 for Public Holiday)	Night Time 22:00 - 7:00 (22:00 - 10:00 for Public Holiday)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

NQ - 6

Noise Level		Date							
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average
Leq in dBA	Leq Day				90.2				90.2
	Leq Night				90.5				90.5
	Leq Total				90.3				90.3
Lmax in dBA	Lmax Day				76.5				76.5
	Lmax Night				80.8				80.8
	Lmax Total				78.1				78.1
Level of Noise in 24 Hrs dBA	Average				78				78
	Maximun				81.9				81.9
	Minimum				64.4				64.4
	Median				79.9				79.9

Receptor	One Hour Leq (dBA)	
	Day Time 07:00 - 22:00 (10:00 - 22:00 for Public Holiday)	Night Time 22:00 - 7:00 (22:00 - 10:00 for Public Holiday)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

NQ - 7

Noise Level		Date							
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Average
Leq in dBA	Leq Day	58.1						76	67.1
	Leq Night	53.9						72.5	63.2
	Leq Total	57						74.9	66.0
Lmax in dBA	Lmax Day	42.8						51.4	47.1
	Lmax Night	42.8						57.8	50.3
	Lmax Total	42.8						53.9	48.4
Level of Noise in 24 Hrs dBA	Average	42.5						53.1	47.8
	Maximum	55.1						74	64.6
	Minimum	35.7						39.5	37.6
	Median	41.2						50.9	46.1

Receptor	One Hour Leq (dBA)	
	Day Time 07:00 - 22:00 (10:00 - 22:00 for Public Holiday)	Night Time 22:00 - 7:00 (22:00 - 10:00 for Public Holiday)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

MSR CONSORTIUM



KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Appendix 13: List of Parameters for Laboratory Sampling and Analysis under Physical Environment

A. Environmental compartment: Soil¹¹¹

• ***Physiochemical Investigation***

1. Moisture
2. pH
3. Texture
4. Organic Matter
5. Total Nitrogen (N)
6. Available Phosphorus (P₂₀₅)
7. Exchangeable Potassium (K)
8. Cation Exchange Capacity (CEC): (Ca⁺ Mg⁺ K⁺ Na⁺ Al⁺ H⁺)
9. Micronutrients (Zn, Cu, Fe, Mn)

• ***Heavy Metals***

1. Lead (Pb)
2. Cadmium (Cd)
3. Nickel (Ni)
4. Chromium (Cr)
5. Cobalt (Co)
6. Arsenic (As)
7. Mercury (Hg)

¹¹¹ soil analysis methods includes FAO methods and analytical methods used by the soil fertility and analytical services section of Department of Agricultural and Irrigation Research (Myanmar).

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

B. Environmental compartment: Water

B.1 Surface Water (Fresh and Sea)

No	Parameters	Unit	Method
1	5-day Biochemical Oxygen Demand	mg/l	Estimated by Eco-Lab with Jenway Dissolved Oxygen Meter (Model 970)
2	Ammonia	mg/l	Lovibond SpectroDirect Method No.60
3	Arsenic	mg/l	Lovibond Arsenic test kit code. No-400700
4	Cadmium	mg/l	AAS, Shimadzu AA-6200 Cd (228.8 nm)
5	Chemical Oxygen Demand	mg/l	Lovibond SpectroDirect Method No.130~132
6	Chlorine (Total residual)	mg/l	Lovibond SpectroDirect Method No.100
7	Chromium (hexavalent)	mg/l	Hanna Multiphotometer
8	Chromium (Total)*	mg/l	Spectroscopy
9	Copper	mg/l	AAS, Shimadzu AA-6200 Cu (324.8 nm)
10	Cyanide (free)	mg/l	Lovibond SpectroDirect Method No.157
11	Cyanide (total)*	mg/l	Spectroscopy
12	Fluoride	mg/l	Lovibond SpectroDirect Method No.170
13	Heavy metal (total)*	mg/l	Spectroscopy
14	Iron	mg/l	Lovibond SpectroDirect Method No.222
15	Lead	mg/l	AAS, Shimadzu AA-6200 Pb (283.3 nm)
16	Mercury	mg/l	Direct Thermal Decomposition, Gold Amalgam Collection Cold AAS Method
17	Nickel	mg/l	Lovibond SpectroDirect Method No.256
18	Oil & Grease	mg/l	Hexane Extraction Method
19	pH	S.U.a	pH meters
20	Phenols	mg/l	Lovibond SpectroDirect Method No.315
21	Selenium*	mg/l	Spectroscopy
22	Silver*	mg/l	Spectroscopy
23	Sulphide	mg/l	Lovibond SpectroDirect Method No.365
24	Temperature Increase	°C	Jenway DO meters
25	Total coliform bacteria	100mL	Plate Count.
26	Total Phosphorus	mg/l	Lovibond SpectroDirect Method No.320,321
27	Total Nitrogen	mg/l	Lovibond SpectroDirect Method No.280,281
28	Total Suspended Solid	mg/l	Lovibond SpectroDirect Method No.383
29	Zinc	mg/l	Lovibond SpectroDirect Method No.400
30	Total Solid		Lovibond SpectroDirect Method No.383

(*) these parameters need special methods since they need additional reagent.

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

B.2 Ground Water

No	Parameter	Unit	Methods
1	pH	S.U.a	pH meter
2	Colours	mg/l	Lovibond SpectroDirect Method No.203
3	Total Dissolved Solid	mg/l	Hana TDS meter
4	Conductivity	mg/l	Hana Conductivity meter
5	Hardness	mg/l	Lovibond SpectroDirect Method No.200,201
6	Chloride	mg/l	Lovibond SpectroDirect Method No.90
7	Arsenic	mg/l	Lovibond Arsenic test kit code. No-400700
8	Iron	mg/l	Lovibond SpectroDirect Method No.222
9	Lead	mg/l	AAS, Shimadzu AA-6200 Pb (283.3 nm)
10	Alkalinity	mg/l	Lovibond SpectroDirect Method No.30
11	Sulphate	mg/l	Lovibond SpectroDirect Method No.360
12	Calcium	mg/l	Hanna Multiphotometer
13	Magnesium	mg/l	Hanna Multiphotometer
14	Total Coliform	C.F.U/ml	Gram Strain Test
15	Total E.Coli Count	C.F.U/ml	Gram Strain Test
16	Coli Form Bacteria	B.C.U	Gram Strain Test
17	Total Nitrogen	mg/l	Lovibond SpectroDirect Method No.280,281
18	Turbidity	mg/l	Lovibond SpectroDirect Method No.385

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

C. Environmental compartment: Ambient Air Quality

C.1 *Dust and Particulate*

1. PM_{2.5}
2. PM₁₀

C.2 *Fugitive Gases*

1. Carbon Monoxide (CO)
2. Nitrogen Dioxide (NO₂)
3. Sulphur Dioxide (SO₂)
4. Ozone (O₃)

C.3 *Noise*

1. dB(A)

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

D. Environmental compartment – Marine Sediment

D.1 Metals (mg/kg dry weight)

1. Antimony
2. Cadmium
3. Chromium
4. Copper
5. Lead
6. Mercury
7. Nickel
8. Silver
9. Zinc
10. Arsenic

D.2 Organics and Organometallic (mg/kg dry weight)

1. Tributyltin (as Tin)
2. Total Polycyclic Hydrocarbons: (PAH)
3. Total Dichlorodiphenyltrichloroethane; Total DDT
4. Dichlorodiphenyldichloroethylene: p,p'-DDE
5. Dichlorodiphenyldichloroethane: o,p'- + p,p'-DDD
6. Chlordane
7. Dieldrin
8. Endrin
9. Lindane
10. Total polychlorinated biphenyls: PCBs
11. Total Petroleum Hydrocarbon: TPH

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

Appendix 14: Recommended default guideline values for toxicants in sediment

Type of toxicant	Toxicant	DGV	GV-high
Metals (mg/kg dry weight) ^a	Antimony	2	25
	Cadmium	1.5	10
	Chromium	80	370
	Copper	65	270
	Lead	50	220
	Mercury	0.15	1
	Nickel	21	52
	Silver	1	4
	Zinc	200	410
Metalloids (mg/kg dry weight) ^a	Arsenic	20	70
Organometallics (µg/kg dry weight, 1% OC) ^{c, d}	Tributyltin (as Tin)	9	70
Organics (µg/kg dry weight, 1% OC) ^{b, c}	Total PAHs ^e	10,000	50,000
	Total DDT	1.2	5
	p,p'-DDE	1.4	7
	o,p'- + p,p'-DDD	3.5	9
	Chlordane	4.5	9
	Dieldrin ^f	2.8	7
	Endrin ^f	2.7	60
	Lindane	0.9	1.4
	Total PCBs	34	280
Organics (mg/kg dry weight) ^b	TPHs ^g	280	550

Notes:

DDD = dichloro diphenyl dichloroethane; DDT = Dichloro diphenyl trichloroethane; DDE = dichlorodiphenyl dichloro ethylene; DGV = default guideline value; GV-high = additional upper guideline value; PAHs = polycyclic aromatic hydrocarbons; PCBs = poly chlorinated biphenyls; TPHs = total petroleum hydrocarbons; OC = organic carbon

- a. Primarily adapted from the effects range low (ERL) and effects range median (ERM) values of Long et al. (1995).
- b. Primarily adapted from threshold effects level (TEL) and probable effects level (PEL) values of MacDonald et al. (2000) and CCME (2002).
- c. Normalised to 1% OC within the limits of 0.2 to 10%. Thus if a sediment has (i) 2% OC, the '1% normalised' concentration would be the measured concentration divided by 2, (ii) 0.5% OC, then the 1% normalised value is the measured value divided by 0.5, (iii) 0.15% OC, then the 1% normalised value is the measured value divided by the lower limit of 0.2.
- d. Basis of revision is described in Appendix A2 of Simpson et al. (2013a).
- e. The DGV and GV-high values for total PAHs (sum of PAHs) include the 18 parent PAHs: naphthalene, acenaphthylene, acenaphthene, fluorene, anthracene, phenanthrene, fluoranthene,

APPENDICES

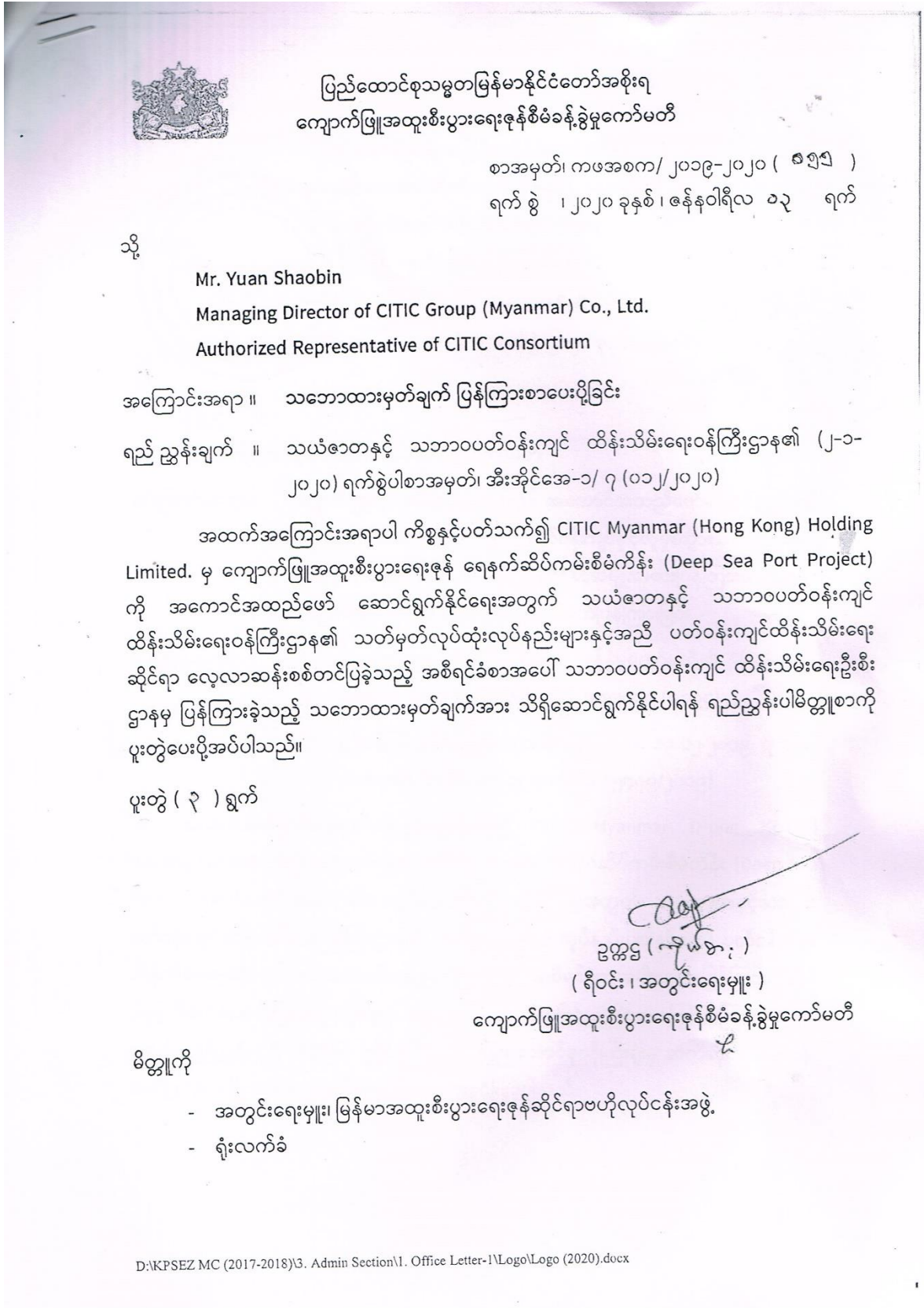
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)

pyrene, benz [a] anthracene, chrysene, benzo [a] pyrene, perylene, benzo [b] fluoranthene, benzo [k] fluoranthene, benzo [e] pyrene, benzo [ghi] perylene, dibenz [a,h] anthracene and indeno [1,2,3-cd] pyrene. Where nonionic OCs like PAHs are the dominant chemicals of potential concern (COPCs), the use of equilibrium partitioning sediment benchmarks (ESBs) is desirable, which includes a further 16 alkylated PAHs (generally listed as C1-/C2-/C3-/C4-alkylated), as described in Appendix A3 of Simpson et al. (2013a).

- f. Where dieldrin or endrin are the major COPCs, it is recommended that ESB approaches are applied as described in Appendix A4 of Simpson et al. (2013a).
- g. Origin described in Appendix A5 of Simpson et al. (2013a).

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)


Appendix 15: Environmental Conservation Department's remarks on the implementation of KPSEZ DSP



KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
 သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
 ရုံးအမှတ်(၅၃)၊ နေပြည်တော်

စာအမှတ်/အီးအိုင်အေ-၁/၇(၀၁၂ /၂၀၂၀)
 ရက်စွဲ၊ ၂၀၂၀ ခုနှစ် ဇန်နဝါရီလ ၂ ရက်



သို့

ဥက္ကဋ္ဌ

ကျောက်ဖြူအထူးစီးပွားရေးဇုန်စီမံခန့်ခွဲမှုကော်မတီ

အကြောင်းအရာ။ ကျောက်ဖြူအထူးစီးပွားရေးဇုန်တွင် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် ရေနက်ဆိပ်ကမ်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားသိခိုက်မှုအပေါ် အကဲဖြတ်လေ့လာဆန်းစစ်ရေးအစီရင်ခံစာအမျိုးအစားပြန်ကြားပေးပါရန် တင်ပြလာခြင်းအပေါ် သဘောထားမှတ်ချက်ပြန်ကြားခြင်း

- ရည်ညွှန်းချက်။
- (၁) ကျောက်ဖြူအထူးစီးပွားရေးဇုန်စီမံခန့်ခွဲမှုကော်မတီ၏ ၆-၉-၂၀၁၉ ရက်စွဲပါစာအမှတ်၊ ကဖအစက/၂၀၁၈-၂၀၁၉ (၀၁၉၄)
 - (၂) ဤဝန်ကြီးဌာန၊ ပြည်ထောင်စုဝန်ကြီးရုံး၏ ၁၃-၁၂-၂၀၁၉ ရက်စွဲပါ စာအမှတ်၊ (သစ်တော) ၃(၂)/၁၆(ဃ)(၅၄၇၉/၂၀၁၉)

၁။ အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ CITIC Myanmar (Hong Koun) Holding Limited သည် ကျောက်ဖြူအထူးစီးပွားရေးဇုန်၊ ရေနက်ဆိပ်ကမ်းစီမံကိန်း (Deep Sea Port Project) ကို အကောင်အထည်ဖော်ဆောင်ရွက်နိုင်ရေးအတွက် သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၏ သတ်မှတ်လုပ်ထုံးလုပ်နည်းများနှင့်အညီ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ လေ့လာဆန်းစစ်မှုတင်ပြရမည့် အစီရင်ခံစာအမျိုးအစားပြန်ကြားပေးနိုင်ပါရန် စီမံကိန်းအဆိုပြုလွှာပူးတွဲလျက် ရည်ညွှန်း (၁) ပါစာဖြင့် ညှိနှိုင်းအကြောင်းကြားလာခြင်းအပေါ် ရည်ညွှန်း (၂) ပါစာဖြင့် ဤဝန်ကြီးဌာန၊ ပြည်ထောင်စုဝန်ကြီးရုံးမှ သက်ဆိုင်ရာစီမံကိန်းအဆိုပြုသူထံသို့ သဘောထားမှတ်ချက်ပြန်ကြားခွင့်ပြုခဲ့ပါသည်။

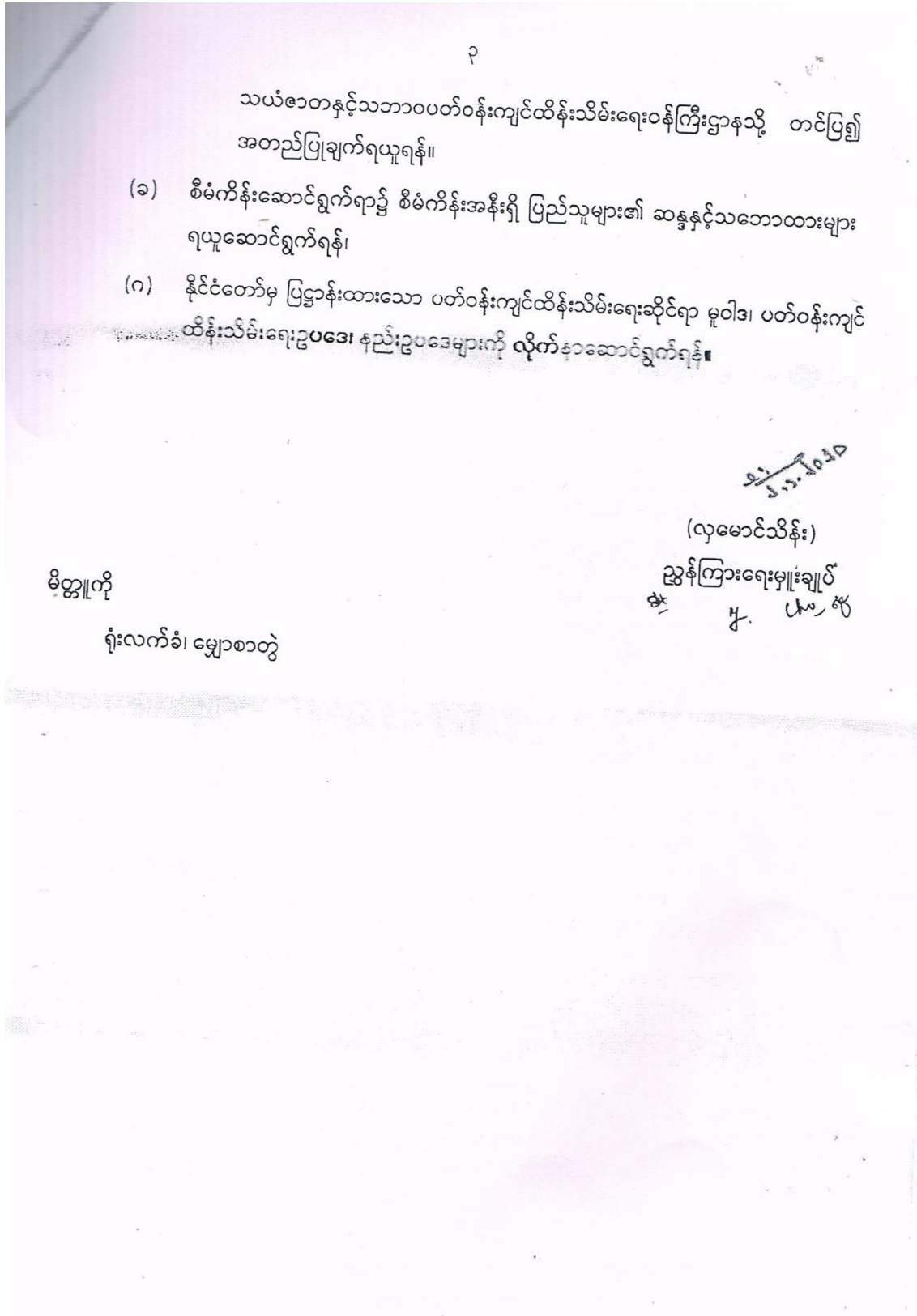
KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

၂။ စီမံကိန်းအဆိုပြုလွှာအရ မဒဲကျွန်းနှင့် ရမ်းဗြဲကျွန်းတို့၌ တည်ဆောက်မည့် ရေနက်ဆိပ်ကမ်း နှစ်ခုသည် လုပ်ငန်းသဘာဝတူညီသော်လည်း သီးခြားကျွန်းတစ်ခုစီ၌ တည်ရှိနေသောကြောင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment - EIA) အစီရင်ခံစာ ၁ စောင်စီ ဆောင်ရွက်သင့်ပါကြောင်းနှင့် အဆိုပြုစီမံကိန်းတွင် တည်ဆောက်မည့် တံတားနှင့် ၁၅ ကီလိုမီတာခန့် အရှည်ရှိ လမ်းဖောက်လုပ်မည့် လုပ်ငန်းနေရာသည် တူညီနေခြင်းကြောင့် အဆိုပါ လမ်းနှင့် တံတားလုပ်ငန်းနှင့်အတူပင် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment - EIA) အစီရင်ခံစာ ၁ စောင် သီးခြားဆောင်ရွက်ရမည်ဖြစ်ကြောင်း စိစစ် တွေ့ရှိရပါသည်။

၃။ သို့ဖြစ်ပါ၍ ကျောက်ဖြူအထူးစီးပွားရေးဇုန်၊ ရေနက်ဆိပ်ကမ်းစီမံကိန်း (Deep Sea Port Project) နှင့်ပတ်သက်၍ အောက်ပါအတိုင်းသဘောထားမှတ်ချက်တင်ပြအပ်ပါသည်-

- (က) မဒဲကျွန်းတွင် တည်ဆောက်မည့် ရေနက်ဆိပ်ကမ်းတစ်ခုအတွက် EIA အစီရင်ခံစာ ၁ စောင်၊ ရမ်းဗြဲကျွန်းတွင် တည်ဆောက်မည့် ရေနက်ဆိပ်ကမ်းတစ်ခုအတွက် EIA အစီရင်ခံစာ ၁ စောင်၊ ကျွန်းနှစ်ခုဆက်သွယ်သွားလာနိုင်ရေးအတွက် တံတား ၁ စင်းတည်ဆောက်ခြင်းနှင့် ရေနက်ဆိပ်ကမ်းများမှ ကျောက်ဖြူအထူးစီးပွားရေးဇုန် သို့ ဆက်သွယ်သွားလာနိုင်ရန် လမ်းဖောက်လုပ်ခြင်းအတွက် EIA အစီရင်ခံစာ ၁ စောင်တို့ကို အောက်ပါအချက်များနှင့်အညီ ဆောင်ရွက်ရန်-
 - (၁) ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းကို ဆောင်ရွက်မည့် တတိယပုဂ္ဂိုလ် (သို့မဟုတ်) အဖွဲ့အစည်းအား ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် ၄၅ နှင့်အညီ သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာနသို့ တင်ပြ၍ အတည်ပြုချက်ရယူရန်၊
 - (၂) တတိယပုဂ္ဂိုလ် (သို့မဟုတ်) အဖွဲ့အစည်းအတွက် အတည်ပြုချက်ရရှိပြီးပါက လုပ်ထုံးလုပ်နည်းအပိုဒ် ၅၃ အရ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအစီရင်ခံစာကို သယံဇာတနှင့်သဘာဝ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသို့တင်ပြ၍ အတည်ပြုချက်ရယူရန်၊
 - (၃) အတည်ပြုထားသည့် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအစီရင်ခံစာကို အခြေခံ၍ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် ၆၃ နှင့်အညီ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာကို

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)



သယ်ယူပို့ဆောင်ရေးနှင့်သင်္ဘောပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသို့ တင်ပြ၍
အတည်ပြုချက်ရယူရန်။

- (ခ) စီမံကိန်းဆောင်ရွက်ရာ၌ စီမံကိန်းအနီးရှိ ပြည်သူများ၏ ဆန္ဒနှင့်သဘောထားများ
ရယူဆောင်ရွက်ရန်၊
- (ဂ) နိုင်ငံတော်မှ ပြဋ္ဌာန်းထားသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ မူဝါဒ၊ ပတ်ဝန်းကျင်
ထိန်းသိမ်းရေးဥပဒေ၊ နည်းဥပဒေများကို လိုက်နာဆောင်ရွက်ရန်။

၂၀၁၃.၁၀.၁၀

(လှမောင်သိန်း)

ညွှန်ကြားရေးမှူးချုပ်
ဦး ဖုန်းလှ

မိတ္ထူကို

ရုံးလက်ခံ၊ မျောစာတွဲ

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Appendix 16: Project-Environment Interaction Risk Matrix

Project Works / Physical Activities	Project - Environment Interaction Risk Matrix (To be Updated in EIA Stage)																								
	Air Quality	Climate (GHG emissions)	Noise & Vibration (includes underwater noise)	Soil & Terrain (bankfront/shoreline disturbance)	Hydrology	Freshwater (Brackish) Surface Water Quality	Hydrogeology		Marine Environment (includes species at risk)											Wildlife (includes species at risk)				Veget. Primary Forest	
							Quality	Quantity	Marine fish (shark, ray, commercial fisheries etc)	Marine Mammals (whales, porpoise, dugong)	Crustaceans / Invertebrates (shrimp, crab, octopus, squid)	Marine Turtles	Marine Birds	Seawater Quality	Sediment Quality & Quantity	Coastal Mangrove Forest	Beach	Coral Reefs	Seagrass	Intertidal Zone Habitat	Amphibians, Reptiles, Snakes	Migratory Birds	Large Mammals		Small Mammals (Palm Civet / Shrew)
Construction & Operations Phases																									
Quay Gravity Caisson Structure Placement																									
Onland Pile Driving For Rear Of Quay Structure																									
Temporary Jetty Construction																									
Dredging																									
Revetment Construction																									
Offshore Spoil Disposal (Unsuitable Dredgate)																									
Onshore Spoil Disposal																									
In-Water Works (Bridge Construction)																									
Land Reclamation																									
Water Use																									
Watercourse Crossings																									
Influx Of Construction/Operations Workers																									
Utilities (Transmission Line; Telecommunications; Water Lines)																									
Road Traffic For Transportation Of Equipment, Supplies And Materials, Heavy Equipment, Cargo, And Workers																									
Shipping Traffic																									
Spills																									
Hazardous Materials Management/Disposal																									
Solid Waste Management																									
Effluent Discharges (Sewage; Construction Wastewater; Stormwater)																									
Concrete Management																									
Clearing, Grubbing And Stripping																									
Closure & Decommissioning																									
Decommissioning Reclamation And Closure Of Terminal																									

APPENDICES

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
 Scoping Report and ToR of Environmental and Social Impact Assessments
 (Yanbye Island Port Terminal of the Project)

Project Works / Physical Activities	Project - Environment Interaction Risk Matrix – Continued (To be Updated in EIA Stage)																			
	Land Use							Heritage Sites			Socio-economic									
	Rare Plants	Fishing	Rice and Shrimp Farming	Traditional Use (firewood, herbal medicines, seasons fruits and vegetable)	Ecosystem Services	Recreational Use	Drinking water quality	Ancestral Sites / Monuments	Culturally Important Heritage Regions	Employment Opportunities	Human Health	Navigation	Cultural Customs / Practices	Aesthetics	Re-settlement	Public Safety	National Security	Human Rights	Self-Determination Zones - Ethnic Groups	Community and Worker Health & Well-being
Construction & Operations																				
quay gravity caisson structure placement																				
onland pile driving for rear of quay structure																				
Temporary jetty construction																				
Dredging																				
Revetment construction																				
Offshore Spoil Disposal (Unsuitable Dredgate)																				
Onshore Spoil Disposal																				
In-water works (bridge construction)																				
Land Reclamation																				
Water use																				
Watercourse crossings																				
Influx of construction/operations workers																				
Utilities (transmission line; telecommunications; water lines)																				
Road Traffic for transportation of equipment, supplies and materials, heavy equipment, cargo, and workers																				
Shipping Traffic																				
Spills																				
Hazardous Materials Management/Disposal																				
Solid Waste Management																				
Effluent Discharges (sewage; construction wastewater; stormwater)																				
Concrete Management																				
Clearing, grubbing and stripping																				
Closure & Decommissioning																				
Decommissioning, Reclamation and Closure of Terminal																				

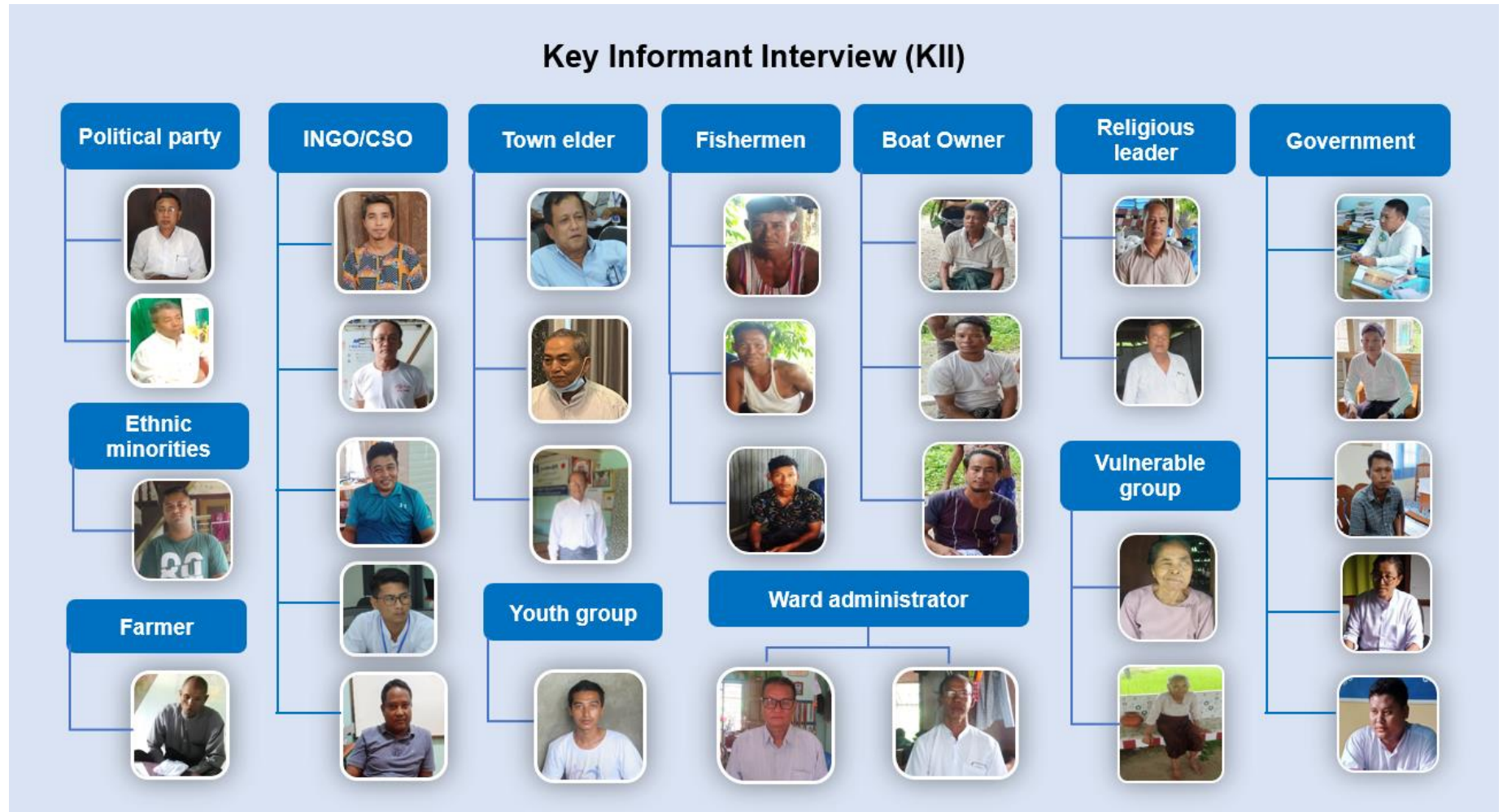
PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT
Scoping Report and ToR of Environmental and Social Impact Assessments
(Yanbye Island Port Terminal of the Project)

Photo Records

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Key informant interviews: In the scoping stage, a total of 127 Key informants were interviewed. The above-mentioned are photo records of the some of the key informants.

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Focus Group Discussions: In the scoping stage, a total of 9 FGDs were conducted with stakeholders in 15 inner villages and Kyauk Phyu Township. The above-mentioned are photo records of the some of the FGDs.

MSR CONSORTIUM



Independent
Engineers

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Group 1 – Discussion of Natural Resources & Mangroves

Two workshops at Hotel Kyauk Phyu (26 – 27 August, 2022)



Group 2 – Discussion of fishery and marine/aquatic animals



Group 3 – Discussion of farmlands, agriculture and livestock breeding



Group 4 – Discussion of rural places, transportation and water resources



Group 5 – Discussion of health, education and cultural traditions and customs

Workshops: In the scoping stage, 2 workshops were held with key stakeholders including government officials. On the first day potential impacts under 5 headings were discussed and on the second day mitigations of them were sought the above photos shows the 5 discussion groups in process.

MSR CONSORTIUM



Independent
Engineers

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Project Director of MSR Consortium



INGO



Political Party

Public Consultation Meeting at Hotel Kyauk Phyu (August 28, 2022)



CSO



Town Elder



Kyauk Phyu Local

Kyauk Phyu PCM: In the scoping stage, 2 PCMs were held—one in Kyauk Phyu and the other in Made Island. The above photos show some records of the proceedings at the PCM in Kyauk Phyu Township.

MSR CONSORTIUM



Independent
Engineers

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Made Island Monastery Head Monk



Made Island Local attendees



Project Director of MSR Consortium

Public Consultation Meeting at Made Island Central Monastery (August 29, 2022)



Political Party



Made Island Regional Development Association



Made Island Local

Made Island PCM: In the scoping stage, 2 PCMs were held—one in Kyauk Phyu and the other in Made Island. The above photos show some records of the proceedings at the PCM in Made Island.

MSR CONSORTIUM



Independent
Engineers

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Online



In-person of community experts group



INGO/CSO

Community experts group workshops at MSR Head Office (22 – 25 November, 2022)



In-person of MSR consortium and community experts group



Government



Political Party

CEG Workshops: In the scoping stage, a workshop with Community Experts was held for four days at MSR office in Yangon to seek their views and concerns on the DSP Projects. The above photos are some of the records of the workshop.

MSR CONSORTIUM



Independent
Engineers

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Revision of Scoping Report (19.01.2023)



Revision of Scoping Report (20.01.2023)



Revision of Scoping Report (23.01.2023)

Revision of Made Island Scoping Report at MSR Head Office (January, 2023)



Revision of Scoping Report (24.01.2023)



Revision of Scoping Report (26.01.2023)



Revision of Scoping Report (27.01.2023)

MSR CONSORTIUM



Independent
Engineers

PHOTO RECORDS

KYAUK PHYU SPECIAL ECONOMIC ZONE DEEP SEA PORT PROJECT Scoping Report and ToR of Environmental and Social Impact Assessments (Yanbye Island Port Terminal of the Project)



Participants (online) of MSR consortium and community expert group at Kyauk Phyu Township

Meeting with CEG to clarify Executive Summary of the Scoping Report at MSR Head Office (February 7, 2023)



Participants (in person) of MSR consortium at MSR Head Office, Yangon

MSR CONSORTIUM



Independent
Engineers