
CHAPTER 21: NON-TECHNICAL SUMMARY

21.1 EXECUTIVE SUMMARY

- The Project is for an integrated mixed development covering a total of 563.04 ha, straddling Post Administration Dom Aleixo, Municipality of Dili, and Post Administration Bazartete, Municipality of Liquica. It is located ~8 km from the capital, Dili.
- Details of this Environmental Management Plan (EMP) from **Chapters 2 to 21** are summarised in this **Chapter 1: Executive Summary**.

21.2 DETAILS OF PROJECT PROPONENT

- Pelican Paradise Holdings (Timor-Leste) is the Project Proponent (PP) that initiates the EMP for the Proposed Pelican Paradise Development, Tibar-Tasi Tolu, Timor-Leste.

21.3 DETAILS OF THE ENVIRONMENTAL CONSULTANTS

- The Environmental Consultant is Asia Pacific Environmental Consultants Sdn Bhd ('ASPEC' for short).

21.4 ENVIRONMENTAL ASSESSMENT AND APPROVAL PROCESS

- **Legislation:** Regulatory approval for developmental projects, such as this Project (under Category A), is undertaken by the National Directorate of Pollution Control and Environmental Impact (NDPCEI) under Decree-Law No.5/2011 on Environmental Licensing Law (ELL) that defines the environmental licensing system for public and private projects likely to produce environmental impacts. The licensing system comprising procedures, roles and responsibilities is shown in **Figure 4.2.1 (Chapter 4: Description of the Project)**.

21.5 PROJECT DESCRIPTION

- The Project is an integrated mixed Project with a focus on resort development comprising:
 - (i) Commercial component: with an 18-hole golf course, hotels, service apartments, residential units and commercial centres.
 - (ii) Institutional component: with a youth development and community centre, a school and a hospital.
 - (iii) National and environmental component: with parks and large hill areas for a replanting scheme to rehabilitate the degraded forest.

- (iv) Infrastructure and utility component: with a utility centre including sewage treatment plants, water recycling and a desalination plant.

21.6 LEGAL REQUIREMENTS

- This EMP has been prepared to comply with the legal and regulatory requirements under the Decree Law No.26/2012 on Environmental Basic Law (EBL), and the Decree Law No.5/2011 on Environmental Licensing Law (ELL) of the National Directorate of Pollution Control and Environmental Impact (NDPCEI), Democratic Republic of Timor-Leste (DRTL).
- The EMP has used the standards, guidelines and best management practices (BMPs) of Timor-Leste. Wherever these are found lacking, standards and BMPs from ASEAN countries such as Malaysia have been used as agreed upon during our earlier discussions with officials from the NDPCEI.

21.7 INSTITUTIONAL ROLES AND RESPONSIBILITIES

- The institutions that will play a vital role in ensuring a smooth and environmentally sound development of the Project for each phase of development, are listed in **Table 21.7.1**.

Table 21.7.1: Institutions Involved in the Project Development

Phase	Institutions
Pre-construction	• National Directorate of Pollution Control and Environmental Impact (NDPCEI)
	• Pelican Paradise Holdings (Timor-Leste) or Project Proponent (PP)
	• Asia Pacific Environmental Consultants Sdn Bhd (ASPEC)
Construction	• National Directorate of Pollution Control and Environmental Impact (NDPCEI)
	• National Directorate of Land, Property and Cadastral Services
	• National Directorate of Roads, Bridges and Flood Control
	• National Directorate of Water and Sanitation
	• National Directorate of Aquaculture and Fisheries
	• National Directorate of Sanitation Control and Environmental Health
	• Department of Policy and Strategic Planning
	• Suco Comoro and Tibar
	• Pelican Paradise Holdings (Timor-Leste) or PP
	• Main Contractor (MC)
	• Environmental Monitoring Consultant (EnvMC)
• Environmental Auditor (EnvA)	

Phase	Institutions
Operation	<ul style="list-style-type: none"> National Directorate of Pollution Control and Environmental Impact (NDPCEI)
	<ul style="list-style-type: none"> National Directorate of Water and Sanitation
	<ul style="list-style-type: none"> National Directorate of Forestry and Watershed Management
	<ul style="list-style-type: none"> Pelican Paradise Holdings (Timor-Leste) or PP
	<ul style="list-style-type: none"> Environmental Monitoring Consultant (EnvMC)
	<ul style="list-style-type: none"> Environmental Auditor (EnvA)
Decommissioning	<ul style="list-style-type: none"> National Directorate of Pollution Control and Environmental Impact (NDPCEI)
	<ul style="list-style-type: none"> Pelican Paradise Holdings (Timor-Leste) or PP
	<ul style="list-style-type: none"> Decommissioning Contractor (DC)
	<ul style="list-style-type: none"> Environmental Monitoring Consultant (EnvMC)
	<ul style="list-style-type: none"> Environmental Auditor (EnvA)

21.8 SUMMARY OF IMPACTS

- The impacts during each phase of development are summarised in **Table 21.8.1**, where the significance of both positive and negative impacts are provided.

Table 21.8.1: Summary of Impacts and Significance

Impacts		Description
Pre-construction Phase		
Significant Negative Impacts		<ul style="list-style-type: none"> No significant negative impacts ascertained. Result: No mitigations needed.
Construction Phase		
Significant Negative Impacts	Major	<ul style="list-style-type: none"> Soil erosion and sedimentation. Marine and lake water quality deterioration. Air pollution. Result: Mitigations required. Time Period: Short to mid-term.
	Minor	<ul style="list-style-type: none"> Alteration of hydrological system. Displacement of fauna through loss of habitat. Increased noise. Landuse change. Traffic congestion. Social conflicts. Result: Intermittent mitigations required. Time Period: Short to mid-term.
Significant Positive Impacts		<ul style="list-style-type: none"> More jobs and business opportunities. Multiplier effects on the local economy. Result: Need only enhancements. Time Period: Short to long-term.

Impacts		Description
Operational Phase		
Significant Negative Impacts	Major	<ul style="list-style-type: none"> • Water pollution by sewage effluents. • Increased traffic volumes. • Result: Mitigation measures required. • Time Period: Short to mid-term.
	Minor	<ul style="list-style-type: none"> • Air pollution. • Increased noise level. • Increased peak flow discharges. • Result: Intermittent mitigation measures required. • Time Period: Short to mid-term.
Significant Positive Impacts		<ul style="list-style-type: none"> • Aesthetic improvements to Tasi Tolu area. • Enhanced terrestrial and lake ecology. • Generation of jobs and business. • Land value appreciation. • Increase in housing, commercial and institutional development. • Improvements in standard of living. • Increased Gross Domestic Product (GDP) of the country. • Increased tourist arrival. • Result: Need only enhancements. • Time Period: Short to long-term.
Deactivation/Decommissioning Phase		
Significant Negative Impacts		<ul style="list-style-type: none"> • Reduced aesthetics of site. • Loss of jobs and business. • Land value depreciation. • Result: Mitigation measures required for closure. • Time Period: Short to mid-term.
Significant Positive Impacts		<ul style="list-style-type: none"> • Reduced traffic volumes. • Reduced tourist foot traffic. • Result: Need to enhance the area before closure. • Time Period: Short to long-term.

21.9 SOCIAL IMPACTS

- The social impacts are summarised in **Table 21.9.1**.

Table 21.9.1: Social Impacts According to Phases

Phase	Impact
Pre-construction	<ul style="list-style-type: none"> • Economic impact due to increased travel time to work place. • Psychological impact due to relocation and anxiety issues.
Construction	<ul style="list-style-type: none"> • Increased pressure on public amenities and services due to influx of migrant workers. • Public health and safety issues due to construction activities and influx of workers. • Social conflicts due to job competition and different culture and ways of life between migrant workers and locals.

Phase	Impact
Operation	<ul style="list-style-type: none"> Influx of tourists, visitors, and hotel employees from other areas may affect tranquillity and way of life.
Decommissioning	<ul style="list-style-type: none"> Loss of jobs and affecting both nation's economy and workers welfare.

21.10 MITIGATION MEASURES

- The mitigation measures provided in this EMP to mitigate against the significant negative impacts as listed in **Table 21.8.1** as well as the social-economic impacts (**Table 21.9.1**) brought upon by the Project development.

21.11 GOVERNING PARAMETERS

- Environmental Performance Indicators (EPI) to ensure the objectives and standards are met, are listed in **Table 21.11.1**.

Table 21.11.1: EPI and Targeted Compliance Criteria

Key Performance Indicator	Targeted Compliance Criteria	Application		
		Construction Phase	Operational Phase	Decommission Phase
Water Quality	(a) Maintain baseline water quality [refer Section 6.6: Water Quality in the Environmental Impact Statement (EIS) Report]	✓	✓	✓
	(b) Conditions of Environmental License (if any).	✓	✓	✓
Marine Water Quality	(c) Malaysian Marine Water Quality Criteria and Standards (MWQCS)	✓	✓	✓
Lake Water Quality	(d) Malaysian National Water Quality Standards (NWQS)	✓	✓	✓
Groundwater Quality	(e) Malaysian Drinking Water Quality Standard	X	✓	✓
	(f) Decree-Law 5/2009, Licensing Regulations, Sale and Quality of Drinking Water	X	✓	✓

Key Performance Indicator	Targeted Compliance Criteria	Application		
		Construction Phase	Operational Phase	Decommission Phase
Erosion and Sedimentation	(a) Maintain baseline total suspended solids (TSS) [refer Section 6: Water Quality in the EIS]	✓	✓	✓
	(b) MWQCS	✓	✓	✓
	(c) NWQS	X	✓	✓
	(d) Erosion and Sediment Control Plan (ESCP)	✓	X	✓
	(e) Conditions of Environmental License (if any)	✓	✓	✓
Air Quality	(a) World Health Organisation (WHO) Air Quality Guidelines	✓	X	✓
	(b) Conditions of Environmental License (if any)	✓	X	✓
Noise	(a) WHO Guidelines Values for Community Noise in Specific Environments	✓	X	✓
	(b) Conditions of Environmental License (if any)	✓	X	✓
Waste Management	(a) NWQS	X	✓	✓
	(b) Malaysian Sewerage Industry Guidelines	✓	X	X
	(c) Conditions of Environmental License (if any)	✓	✓	✓
Biodiversity	(a) UNTAET Regulation No.2000/19 on Protected Places	✓	X	✓
	(b) Decree Law No.26/2012 Environmental Basic Law, Article 27	✓	X	✓
	(c) UNTAET Regulation No.2000/17 on the Prohibition of Logging Operations and the Export of Wood from East Timor	✓	✓	✓
	(d) Draft Decree Law on Biodiversity, dated March 2012	✓	✓	✓

Key Performance Indicator	Targeted Compliance Criteria	Application		
		Construction Phase	Operational Phase	Decommission Phase
Biodiversity (cont')	(e) Draft Decree Law on Forest Management, Draft 6	✓	✓	✓
	(f) National Biodiversity Strategy and Action Plan (2011 – 2012)	✓	✓	✓
	(g) Forestry Sector Policy Goal Objective and Strategy	✓	X	✓
	(h) Maintain baseline results for phytoplankton and zooplankton and coral reef results in Sections 6.12 and 6.15 of the EIS Report	✓	✓	✓
	(i) Conditions of Environmental License (if any)	✓	✓	✓

21.12 MONITORING AND AUDITING PROGRAMMES

- Environmental components to be monitored during the construction phase are:
 - (i) Site conditions.
 - (ii) Water quality (lake and marine waters).
 - (iii) Air quality.
 - (iv) Noise.
 - (v) Ecology.
 - (vi) Waste management.
 - (vii) Safety and health.
- Environmental components to be monitored during the operational phase are:
 - (i) Water quality (lake, marine water and groundwater).
 - (ii) Sewage effluent.
 - (iii) Ecology.
- Environmental components to be monitored during the decommissioning phase for closure are:
 - (i) Water quality (lake and marine waters).
 - (ii) Air quality.
 - (iii) Ecology.
 - (iv) Waste management.
- Environmental Audit for the Project will be done half yearly during the construction and operational phases and once for closure in the decommissioning phase.

21.13 REPORTING REQUIREMENTS

- Two types of monitoring reports will be prepared for all phases:
 - (i) The first report will be prepared for internal use (quarterly) to provide feedbacks to the Project Proponent (PP), Main Contractor (MC), Environmental Management Team (EMT) and Emergency Response Team (ERT).
 - (ii) The second (half yearly and/or yearly) will be prepared for external use to the NDPCEI for their information.

21.14 RESPONSIBILITIES FOR MITIGATION AND MONITORING

- The members responsible for implementing the mitigation measures and monitoring during each phase of development are provided in **Table 21.14.1**.

Table 21.14.1: Members Responsible for Implementation of Mitigation and Monitoring

Developmental Phase	EMT Members
Construction Phase	<ul style="list-style-type: none"> • Pelican Paradise Holdings (Timor-Leste) or PP • Project Manager (PM) appointed by PP • Main Contractor (MC) • Sub-contractors (SC) • Safety, Health and Environmental (SHE) Manager and Environmental Officer (EO) appointed by the MC • Environmental Monitoring Consultant (EnvMC)
Operational Phase	<ul style="list-style-type: none"> • PP assisted by PM • Golf Course Superintendent assisted by maintenance supervisor • STP Operator • EnvMC
Decommissioning Phase	<ul style="list-style-type: none"> • PP assisted by PM • Decommissioning Contractor (DC) • EnvMC

21.15 EMERGENCY RESPONSE PLAN

- **Table 21.15.1** provides a summary of the Emergency Response Plan (ERP) for each phase of development. The details are in **Chapter 13** of this EMP.

Table 21.15.1: Emergency According to Development Phases

Developmental Phase	Emergency Scenarios
Construction Phase	<ul style="list-style-type: none"> • Serious accidents involving injury • Fatal accidents • Fire or explosions • Oil and hazardous materials spills on land and sea • Structure collapse

Developmental Phase	Emergency Scenarios
Operational Phase	<ul style="list-style-type: none"> • Wastewater overflow • Serious accidents involving injury • Fatal accidents • Fire or explosion
Decommissioning Phase	<ul style="list-style-type: none"> • Serious accidents involving injury • Fatal accidents • Oil and hazardous materials spills • Structure collapse

21.16 DECOMMISSIONING PLAN

- The procedures for decommissioning have been prepared to address two separate abandonment situations, these being (i) during the construction phase and (ii) during the operational phase.

21.17 TRAINING

- Training specifically targeting personnel associated with the Project will be provided to enhance their skills in managing the environmental components of the Project.

21.18 PUBLIC CONSULTATIONS AND INFORMATION DISCLOSURE

- Public consultations with the local communities, Sucos, NGOs and environmental authorities have been carried out from September 2016 to January 2017 (see **Chapter 16** for details).
- The stakeholders have been briefed on the Project and their views considered in the EIS and EMP Reports. The stakeholders perceived that jobs and business would be created to help reduce the unemployment situation in the country and hence they supported the Project.

21.19 COMPLAINT AND GRIEVANCE MECHANISM

- A three-tiered complaint and grievance mechanism (CGM) has been proposed in **Chapter 17**, as an avenue to resolve and address any complaints and grievances that may occur as part of the Project's social responsibilities.

21.20 IMPLEMENTATION SCHEDULE

- The development of the Project from the construction until its final completion is slated originally for three years but is now scheduled for a total of six years.
- The development for the three phases is shown in **Table 21.20.1**.

Table 21.20.1: Project Development Timeline

Phasing	Development Plot/ Component	2017	2018	2019	2020	2021	2022	2023
Phase 1	Plot 1 – Jetty Plot 3 – Service Apartment Plot 10 – 2 nd Hotel (earthworks only)		████████████████████					
Phase 2	Plot 1 – 5-Star Hotel Plot 2 – 18-Hole Golf Course Plot 4 – Utility Centre Plots 8 & 9 – Residential Units (infrastructure works)*		████████████████████████████████████████					
Phase 3	Plot 5 – School Plot 6 – Hospital Plot 7 & 13 – Commercial Centre 1 & 2 Plot 10 – 2 nd Hotel Plot 14 – Youth Development and Community Centre Plot 11 – Forest Reserve Areas (Reforestation)				████████████████████████████████████████			

Note: *Earth fill will be obtained from Plots 8 and 9 for earthworks of the other development component parcels.

21.21 COST ESTIMATES

- Details of the budget allocations for environmental protection will be provided by the PP and the main contractor as part of the overall Project cost.

21.22 REVIEW OF EMP

- The procedures to review this EMP for all phases of development have been provided in **Chapter 20** to meet the objectives and requirements of the approval conditions of the NDPCEI.