CHAPTER 16: NON-TECHNICAL SUMMARY

16.1 EXECUTIVE SUMMARY

- The Project is for an integrated mixed development covering a total area 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 Impact Statement (EIS) from **Chapters 2** to **15** are summarised in **Chapter 1:** Executive Summary.

16.2 PROJECT PROPONENT

- Pelican Paradise Holdings (Timor-Leste) is the Project Proponent (PP) that initiated the EIS for the proposed Pelican Paradise Development, Tibar-Tasi Tolu, Timor-Leste.

16.3 CONSULTANTS AND SPECIALISTS

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

16.4 THE PROJECT

- 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 degrade forest.

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

16.5 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

- The EIS 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 EIS 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.

16.6 PROJECT ENVIRONMENT

(a) Physical Environment

- The Project is located on an enclosed Tasi Tolu bay. This coastal enclave is flanked by a range of hills that slopes to a large expanse of coastal plains of less than 1 to 5 m above mean sea level, towards the Tasi Tolu Beach. Small streams have cut through the hills ending in the three Tasi Tolu Lakes. The streams are dry for most of the year. Within the flat coastal plains, are found three large saline lakes, which are remnants of the bay enclosure.

- The soils are thin with very little organic matter. Because of this and the low annual rainfall received, vegetation is sparse - mainly shrubs, isolated trees and patches of grass, creepers and weeds, which have adapted to this dry savannah-type of climate. Efforts to reforest the hills areas with trees provided by the Forestry Department have floundered on the thin soils and dry conditions. Reforestation of the hills will be tried again in this Project with the assistance of the Forestry Department.

- The three saline Tasi Tolu Lakes form a vital component in the Project area. They are under the jurisdiction of the Government. Lake A will be converted to a freshwater lake to augment freshwater in times of prolonged drought. The other two saline lakes will be rehabilitated from their present semi-eutrophicated status, for public recreation and for the birds, for which the area is well-known internationally.

- Offshore at the Dili Rock, the seawater has a diversity of fish and corals - a divers' paradise. Presently, there are few foreign tourists using the beach although the locals often go there for swimming. Most tourists go to view the Dili Rock and the Pope Monument located on the hillock.

(b) Ecological Environment

- The terrestrial environment is not rich. The vegetation is a mixture of tropical dry forest and coastal plants comprising the Timor mountain gum (*Eucalyptus urophylla*) in the hills and scattered rain trees (*Albizia saman*) nearer to the coast. Very little mangroves were left around the three lakes, except weeds, creepers and shrubs, which are also found along the coast.

- The types of vegetation do not support a large population of animals. Only small animals such as the monkeys and the native Timor Shrew (*Crosidura tenuis*) and Timor Rat (*Rattus timoriensis*) (Trainor et al., 2007a) were reported. Most of the animals were domestic ones such as goats, cattle, hogs and chickens.

- The area around the Tasi Tolu Lakes is listed as an Important Bird Area (IBA). The birds (migratory and resident species) observed were the Australian pelicans (it is for these birds that the Project was conceived), little egrets and great egrets. Herpetofauna, such as Brook's house geckoes (*Hemidactylus brookii*) were found.

- The marine environment is rich and dominated by coral reefs especially west of Dili Rock, where the types and diversity are high. With the presence of food sources such as planktons, other organisms such as seapens and seasquirts were sighted among the reefs. At the sandy seabed east of Dili Rock, the seagrass has attracted large marine fauna, such as dugongs and dolphins.

(c) Economic Environment

- Unemployment in Timor-Leste is high (11% in 2013, as per the Timor-Leste Labour Force Survey 2013 by GDS, 2014). With the Project, it is anticipated that more than 1,500 jobs will be created during both the construction and operational phases. This will reduce the unemployment rate by ~6.4% within the unemployed group. The scale and duration of the Project will likely mean *ad infinitum* employment in the area. This will permanently alleviate the present high unemployment situation in the country.

- An injection of an estimated USD310 – 400 million by the Project will stimulate economic and socio-economic growth of the local economy and country. The "spin-off" effect will be most felt in tourism-related business amongst local aspiring entrepreneurs and even foreign ones to expand the burgeoning tourist market and boost tourist arrivals to the country.

(d) Social Environment

- There is one settlement within the Project site - Kg 12 De Outubro with an estimated 3,803 inhabitants. As they reside on state property already earmarked for development, the Government of Timor-Leste has given an undertaking to deliver the property free of all encumbrances for development of the Project.

- Perception surveys amongst the respondents in the settlements within the 3-km Zone of Impact (ZOI) showed most of them supported the development because of opportunities available, such as jobs, business and skill training.

(e) Cultural Environment

- In Timor-Leste, one of the cultural heritages is the various types of languages used throughout the nation. The most widely used vernacular language in Timor-Leste is Tetum, the country's first official and national language together with Portuguese. Tetum is divided into Tetum-Prasa (influenced by the Portuguese) and Tetum-Terik. In the Municipality of Dili, Tetum-Prasa is the most common mother tongue used by the community. Other than Tetum, Portuguese is also used as the official language in Timor-Leste.

- The nearest historic sites are St Paul's Holy House and the Pope Monument, which are also religious and revered sites. The traditional St Paul's Holy House, was built to commemorate Pope John Paul II's visit in 1989. The St Paul's Holy House will remain intact forming an iconic monument on site.

- The other significant place, also to commemorate the Pope's visit, is the Pope Monument. This Monument, built to commemorate his visit, is located on a hill overlooking the coastal plains and the Project area and the sea. It is a very popular site for tourists and a place for recreation and jogging for the local people.

- St Paul's Holy House and the Pope Monument will not be affected by the Project and will remain open to visitors through the construction and operational phases.

- The three Tasi Tolu Lakes have been considered by the local communities as sacred sites too and are revered as a place of remembrance reflecting a period of history in their struggle for Timor-Leste independence, and accorded an eminent place together with the Peace Park in 2002.

16.7 CLIMATE CHANGE

- The Project is unlikely to cause any global climate change. The Project of 563.04 ha (5.63 km^2) within a country of 15,000 km^2 is too small to affect the global, indeed, even the regional synoptic climate through its environmental activities.

16.8 ALTERNATIVES

- During Project planning and conception, considerations have been taken to select the best alternatives for the Project in terms of best use of the land, landuse compatibility, suitability of developmental components, technology, construction methods and environmental feasibility to avert environmental negativity.

16.9 IMPACT ASSESSMENT AND MITIGATION MEASURES

- From the study findings, the key environmental issues of concern are shown in **Table 16.9.1**. Their positive and negative impacts have been ascertained in **Chapter 9**, and for the negative impacts, pragmatic mitigation measures have been recommended.

Table 16.9.1: Key Environmental Issues of Concern

Impacts		Description
Pre-construction Phase		
Significant Impacts		• No significant negative impacts ascertained. • **Result:** No mitigations needed.
Construction Phase		
Significant Negative Impacts	Major	• Soil erosion and sedimentation. • Marine and lake water quality deterioration. • Air pollution. • **Result:** Mitigations required. • **Time Period:** Short to mid-term.

Impacts		Description
	Minor	• 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		• More jobs and business opportunities. • Multiplier effects on the local economy. • **Result:** Need only enhancements. • **Time Period:** Short to long-term.
Operational Phase		
Significant Negative Impacts	Major	• Water pollution by sewage effluents. • Increased traffic volume. • **Result:** Mitigation measures required. • **Time Period:** Short to mid-term.
	Minor	• Air pollution. • Increased noise level. • Increased peak flow discharges. • **Result:** Intermittent mitigation measures required. • **Time Period:** Short to mid-term.
Significant Positive Impacts		• Aesthetic improvements at 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		• 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		• Reduced traffic volumes. • **Result:** Need to enhance the area before closure. • **Time Period:** Short to mid-term.

16.10 SOCIAL IMPACT ASSESSMENT

- Within the Project site, Kg 12 De Outubro with an estimated 3,803 inhabitants located will be relocated by the Government and hence, is outside the scope of this EIS.

- Within the 3-km ZOI, there are 29 settlements of which respondents from 11 settlements, representing 2.69% of the total households (7,541) were surveyed. They perceived that the Project will have both positive and negative impacts to the socio-economy in the country, with most being positive, more jobs and business to help reduce the unemployment situation in the country and hence they supported the Project.

16.11 ECONOMIC ASSESSMENT

- The Project will inject an estimated USD310 – 400 million into the local economy. This will boost investors' confidence in the country, encouraging more investors to seek participation in the country's development. The Project will create a snow-ball effect in spurring investments in the country.

- Environmental costs and benefits are often the most difficult to estimate because of the intangible nature of the elements, which are based on people's perception rather than market forces and pricing. **Table 16.11.1** shows the benefits and losses resulting from the Project.

Table 16.11.1: Summary of the Environmental Cost and Benefit on Impact

Descriptions	Benefits/Gains	Costs/Losses
Economic development	/	
Employment generation	/	
Enhanced tourism activities	/	
Skills training and development	/	
Reforestation of degraded forest	/	/
Lake rehabilitation	/	/
Deterioration of environmental quality		/
Accidents, safety and health		/

16.12 SUMMARY OF ENVIRONMENTAL MANAGEMENT PLAN

- The main objective of the EMP is to provide guidelines and procedures to protect the environment where the Project is located and its surrounding areas during the construction and operational phases. The EMP comprises (i) mitigation measures to avoid, reduce or minimise the identified negative impacts; (ii) costs of the mitigation measures; (iii) monitoring requirements; (iv) institutional roles and responsibilities for implementing the EMP and monitoring activities and (v) identification of training and capacity building.

16.13 PUBLIC CONSULTATION 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 13** for details).

- The stakeholders have been briefed on the Project and their views considered in the EIS and EMP Reports.

16.14 DIFFICULTIES ENCOUNTERED

- There were some difficulties encountered in conducting the EIS such as insufficient research information in Timor-Leste that can be used for calibration in the simulation exercise for some major environmental components for the EIS.

16.15 CONCLUSION

- The Project will have both positive and adverse impacts on the environment. On the positive side, it will promote economic growth in Dili areas, creating jobs and business that will uplift the living standards of the local communities.

- The Project will augment freshwater (from Lake A) for prolonged droughts, while rehabilitation of the other lakes, will make the environment more conducive for the birds and tourists.

- Many local and foreign visitors will be attracted to visit and have meetings and conventions in the Project, which features resort type of accommodation, meeting rooms, and large exhibition and convention halls. This will be a boon to the local communities and the country.

- On the negative side, adverse impacts will occur mainly during the construction phase where land clearing, platforming, raising the land level comparable to the Rua Terra Santa, construction of buildings and rehabilitation of the lakes, will cause soil erosion, dust and noise, traffic inconveniences to the local communities. These impacts can be mitigated by implementing the recommended measures in the EIS and EMP.

- Overall, there is no adverse impact for which there is no mitigation measure. With the adoption of the recommended mitigation measures, the negative impacts will largely be obviated making the gains greater by comparisons. It is therefore imperative that all the mitigation measures recommended in the EIS and EMP be incorporated into the contractual agreements between the contracting parties responsible for construction and development of the Project. In this way, compliance with the measures set out in the EIS and EMP will be assured.