

CHAPTER I

EXECUTIVE SUMMARY

1.1. Executive Summary

Lai-Ara Nikmat Mujur, Lda. is a new company in Timor-Leste, it is the company that combination of Lai-Ara Shipping Agency Company, owned by Mr. Ramiro Dias Quintas and Nikmat Mujur Company from Malaysia, owned by Mr. Law See Nam and as the director for this company is Mr. Ramiro Dias Quintas. These two companies made a joint venture together as **Lai-Ara Nikmat Mujur, Lda.** Nowadays, the company was working hard for building Jetty and Fuel Storage Terminal in Dili-Liquiça road, of Aldeia Mota Ikun, Suco Mota-Ulun, Post administrative of Bazartete, Municipality of Liquiça.

The project document has been submitted to NDPCEI for recommendation on the categorization of the project. Based especially on the location factor where the project is located near sensitive environment, it was recommended that the project fall under Category A projects with the need to develop an Environmental Impact Statement. Hence, the ToR is developed based on check list for Terms of References from the Expert 101 EIS system developed by NDPCEI.

Lai-Ara Nikmat Mujur Lda. will responsible for day to day management and monitoring of the jetty and fuel storage, including implementation of the requisite legal frame works and the mitigation measures required during the pre-construction, construction, operation and decommissioning phase.

The potential for environmental impacts is closely related to activities carried out for the construction of two project components that will change or negatively affect the biophysical, socio-cultural-economic and public health. Lai-Ara Nikmat Mujur, L.da will mitigate all matters relating to the environment and health and safety in the workplace. The purpose of the implementation of the Environmental Management Plan (EMP) is to evaluate and control (mitigate) environmental impacts which include: controlling noise and air quality, emerging hazards, erosion control, marine life and flora and fauna, worker health and the public health surrounding community, socio-economic conditions such as public unrest and also re-vegetation / rehabilitation for the last phase.

1.2. Stage of the planning activities

Planning of the Jetty and Fuel Storage Construction, will be divided into 4 stage/phase:

- a. Pre Construction
 - Licensing
 - Land clearing and land compaction
 - Socialization
- b. Construction
 - Recruitment of labour
 - Building of fence and base camp
 - Mobilization of equipment and material
 - Building of Jetty and Fuel storage and other facilities
- c. Operation
 - Recruitment of labour for operation fuel terminal
 - Activities of fuel
 - Mobilization of the costumer
 - Utility
- d. Post Operation/decommissioning
 - Demobilization material of jetty and fuel storage
 - Rehabilitation/re-vegetation

1.3. EIS Goal

a. Environmental Management Plan aims:

1. Avoid or prevent negative environmental impacts from the construction of Jetty and fuel storage
2. Environmental management aimed at overcoming, minimizing, or controlling negative impacts that arise during a business and / or activity;
3. Environmental management that enhances positive impacts so that these impacts can provide greater benefits to both the proponent and other parties, especially those who enjoy the positive impact.

b. Plan for Environmental Monitoring, aims to:

1. Evaluating the level of management success that is carried out especially towards the management of important impacts and the use of methods and methods used in managing activities.
2. Evaluating levels: compliance, tendencies and critical levels at the environmental management stage

3. Improving the environmental management that has been carried out as stated in the environmental management plan so that the mitigation of impacts can be carried out as effectively and efficiently as possible with the existing technological, social and economic and institutional approaches.

Activity plan about Jetty and Fuel Storage terminal that located in Mota-ikun, Suco Mota-ulun, Bazartete Post Administrative, Municipality of Liquiça will be make impact to component geo-physic-chemistry, biology, social-economy-culture, and community health. Generally impact will be appear like dust (TSP) and noise. Example impact from dust (TSP) and noise:

1. Dust (TSP)

Dust will happen when pre-construction phase and construction phase like mobilization equipment and material, result of that activity will make impact to public health like respiratory infection.

2. Noise (dBA)

During construction phase will increasing noise, therefore activity of the mobilization equipment to build the construction of the Jetty and other building.

The pre-construction phase or land preparing, have several environment impact who happen like dust raising and plants reduction, but in this phase not really happen important environment impact. The plants in that area of project are wild plants and not important or not conduct to local community. Also like raising dust at area of project, not give negative impact to local community because distance between location project about 100 meter to community home town.

Environment impact just now happen in area of project like overflow, but that happen when the rain come. In area of project also already have intrusion of salt water, that is why community in that area only use groundwater to wash clothes, give to animal and pour plants.

The process of public consultation held at Suco office that located in Mota-ikun, Suco Mota-ulun, Bazartete Post Administrative, Municipality of Liquiça with method; suggestion, opinion and idea. Who invite:

1. Community that affected by Project proposed
2. Xefe suco and Xefe aldeia of project located
3. Official of Environment and other relevant authority

The economic condition nearby area of project generally is a farmer and fisherman. With the development of the Jetty and Fuel station will make positive impact to social and economic for community at area of project likes opportunity to work and opportunity to effort.

CHAPTER II
DETAILS OF THE PROJECT PROPONENT

LAI-ARA NIKMAT MUJUR, LDA is one new company in Timor-Leste, it was the company that combination of Lai-Ara shipping agency Company and Nikmat Mujur Company from Malaysia. These two companies joint venture as Lai-Ara Nikmat Mujur, Lda. The company has gotten the Certificate of Commercial Registration, with the company name Lai-Ara Nikmat Mujur, Lda. with registration number 1260386 that issued on 23/11/2016. The Certificate of Debts also have issued on 22/02/2017.

Recently Lai-Ara Nikmat Mujur, L.da is running a project on the construction of Jetty and Fuel Storage Terminal in Municipality of Liquica and this is also the first project of this company. The details of the project proponents are presented in **table 1**.

1. Proponent Details

Table 1. Details of the project Proponent

Name of company	Lai-Ara Nikmat Mujur, Lda.
No./ Date of Establishment	1260386 / 23 nd November 2016
Address	Rua Dili-Liquica, Aldeia Mota-Ikun, Suco Mota-Ulun, Sub-districto Bazartete, Distrito Liquiça
Phone/Fax	+(670) 7801 8488
Responsibility	Ramiro Dias Quintas
Position	Director
Contact Number	+(670) 7801 8488
Address	-
Email	r.quintas@laiara.com

CHAPTER III
DETAILS OF THE CONSULTANT

2. Details of the Consultant that Prepared the EMP

The preparation of the Environmental Impact Statement (EIS) and Environmental Management Plan (EMP) of jetty and fuel storage terminal activities is carried out by environmental consultant (Kaduak Mineral/KM Consulting) which is the Service Provider of environmental document formulation. In this case, as for technical support from experts in the field who are environmental service providers (Engineer Professional Team/EPT Consultant) in response to the requirements of environmental assessment to obtain the Environmental License required under the Environmental Licensing Law 05/2011. The details of the Consulting that prepared EIS and EMP are;

Name of Company/Institution: “KM” Consulting Collaborate with EPT Consultant

Address : Rua Caicoli, Aldeia 03, Suco Sacoco, Vera Cruz, Dili

Contact Number : (+670) 77329534

Person in Charge : Emeliano de Oliveira, S.T.,CST

Position : Team Leader

Address : Rumbia, Caicoli, Dili, Timor Leste

Company/Institution : “KM” Consulting

we also have members of EIS document preparation and its expertise, as follows are shown in table below:

Table 2. Details of EIS Consultant

No	Name	Company/Institution	Qualification
1	Emeliano de Oliveira	“KM” Consulting	Environment
2	Maximiano de Oliveira	“KM” Consulting	Geology-Environment
3	Izaias Amaral	“KM” Consulting	Environmental Engineering
4	Noviyanti, M.T	“KM” Consulting	Environmental Engineering
5	Silvia Maria Babo	“KM” Consulting	Public Health
6	Anggela Risti Puspitasari	“KM” Consulting	Environmental Engineering
7	Yasir Agus Hartanto	EPT Consultant	Geodesy
8	Octaviano Maria Oscar	EPT Consultant	Chemical Engineering
9	Hercio Camilho Fernandes	EPT Consultant	Geological engineering
10	Sugiharto	EPT Consultant	Geodesy
11	Suzana da Costa Marcal	EPT Consultant	Geodetical Engineering

CHAPTER IV

DESCRIPTION OF THE PROJECT

4.1. Identification of the Project

LAI-ARA NIKMAT MUJUR, Lda. is a new company in Timor-Leste, it is the company that combination of LAI-ARA Shipping Agency Company, owned by Mr. Ramiro Dias Quintas and NIKMAT MUJUR Company from Malaysia, owned by Mr. Law See Nam and as the director for this company is Mr. Ramiro Dias Quintas. These two companies made a join venture together as LAI-ARA NIKMAT MUJUR, Lda. Nowadays, the company was working hard for building Jetty and fuel storage terminal in Dili-Liquica Road, Aldeia Mota-ikun, Suco Mota-Ulun, Post Administrative of Bazartete, Municipality of Liquica.

4.2. Category of the Project

The Project has been classified as Category A by the NDPCEI-ANPM. The Category has been clearly established in the letter from the joint committee NDPCEI-ANPM to the project proponent and declared that the Project is Category A (Annex 1) on 17th of July 2017 (Letter ref. 041/KK-AIA/DNCPIA-ANPM/VII/2017).

According to Timor-Leste law the project can be classified as Category A because this classification is based on the nature, size (Annex 1), technical characteristic of the project as based on Decree-Law Np. 5/2011, on Environmental License. Pursuant to the category A project above and as per Decree-Law No. 5/2011, Lai-Ara Nikmat Mujur, L.da is required to conduct a complete environmental impact study and submit the Environmental Impact Statement (EIS) and Environmental Management Plan (EMP).

4.3. Brief Description of the Nature, Size and the Location of the Project

The project located in the north-east part of Liquica Municipality in Mota-ikun, Suco Mota-ulun, Bazartete Post Administrative. While there is a widely-used village boundary map in Timor Leste, it should be noted that within the country, village affiliation is more of a cultural concept rather than a geographic boundary concept. Therefore, communities might reside within the geographical boundary of one village but identify themselves as

residents of a different village. Based on the Global Positioning System (GPS) coordinate, the project is located between 8° 33' 49,02" S' and 125° 24' 40,77" E.

Table 3. Project Location

Aldeia/Hamlet	Mota-ikun
Suco/Village	Mota-ulun
Post Administrative	Bazartete
Municipality	Liquica

Project site borders with Ulmera village in the east, Lauhata village in the west, Timor Sea in the north and hills of Bazartete in the south. No direct adverse impacts are projected in the other municipalities since the activities involved in the project will be restricted within project corridor (see figure 1).

The proposed of this project is for fuel storage terminal, divided into two stage (stage I and stage II). Components that will store to this terminal are;

Table 4. Description of Fuel Storage (tank) stage I

No	Equipment	Capacity (KL)	Function	Specification
1	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15	84,861 of each tank	Diesel storage tank	ASME CL 150

Other Support Facilities:

Valve (ball valve, gate valve, check valve), SS flexible Hose, Y strainer, PRV (pressure relieve valve), Pressure Gauge, Air eliminator, Solenoid Valve, reducer, centrifugal pump. All the facilities will be added more correspond to the necessity of the project. The descriptions of facilities for the proposed project are listed in the description below:

Table 5. Oil / Fuel Storage Terminal Specifications for stage I

No.	Main Equipment	Function	Specification
1	TK-1, TK-2	Asphalt storage tank	ASTM 283 M GR C
2	TK-3, TK-4	Jet A1 storage tank	ASTM 283 M GR C
3	TK-5, TK-6	Diesel storage tank	ASTM 283 M GR C
4	TK-7, TK-8	Gasoline storage tank	ASTM 283 M GR C

Table 6. The Description of the Fuel Storage and Jetty for stage II

No.	Name Of Equipment	Size	Capacity	Function
1.	TK-1, TK-2	12.7m Dia x 15m H	1,500 MT	Asphalt Storage Tank
2.	TK-3, TK-4	15m Dia x 10.6m H	1,500 MT	Jet A1 storage Tank
3.	TK-5, TK-6	28.8m Dia x 16m H	5,000 MT	Diesel Storage Tank
4.	TK-7, TK-8	19.2m Dia x 13.5m H	3,000 MT	Gasoline storage Tank
5.	TK-9,TK-10,TK11	22.8M Dia x 16m H	5,000 MT	Future plan storage tank
6.	Jetty	6.3m x 13.08 m	-	Used as fuel tanker tethering
7.	Trestle	100m	-	Used as pipeline rack for process loading and unloading fuel from tanker to terminal storage tank

Workers needed for construction activity has been recruited by the contractor. As far as practicable, manpower will be sourced using local people, especially for semi-skilled and unskilled work labourers. Project workers will be provided with facilities appropriate to the circumstances of their work, including access to hygiene facilities and appropriate areas for rest. Where accommodation services are provided to project workers, policy will be put in place and implemented on the management and quality to protect and promote health, safety and well-being of the project workers, ad to provide access to or provision of services that accommodate their physical, social and cultural needs.

Table 7. Estimation of Project Manpower

No	Position	Quantity
1	Operation Manager	1
2	Safety Manager	1
3	Construction Manager	1
4	Welder	8
5	Driver	4
6	Heavy equipment operators	4
7	Skilled Labourer	10
8	Worker	30
9	Security	3
TOTAL		62

Analysis : Lai-ara Nikmat Mujur, L.da

4.4. Justification and need for the project

To develop the storage facility of petroleum product to ensure better availability of petroleum product in the state of Timor-Leste. In the other hand, the objective of the proposed project is to fulfil petroleum product demand and to balance oil price in Timor-Leste territories. The project will contribute towards the socio-economic development of the area. The direct and indirect employment to the local population during the operation of the project for both skilled and unskilled levels thereby the local population will be benefited.

This investment as an opportunity to Timorese business people to take apart on the Timor-Leste Strategic Development Plan 2011-2030 that already established by the Government in a specific Private sector Investment. The main objective of this investment is for the good of Timorese people. The petroleum product aims to distribute for various sectors: for community consumption, industry consumption, transportation, electricity, etc. This project will create job opportunity to Timorese people, especially to local community; it will increase community income likewise. This investment as already described, will also increase national income.

Given the current situation with fuel supply infrastructure in the country, there is a tremendous need to invest in the modernization of fuel supply transport and handling through the development of large scale storage and sea transport (jetty or port) facility that will allow for faster, safer and more reliable supply into the country. Hence, the idea for the development of Laiara Nikmat Mujur Fuel Storage and Jetty Plant came into being.

The objectives of the development are as follows:

1. To enhance the reliability of fuel distribution in Timor-Leste.
2. To provide additional storage facility that is modern and managed in high safety standards.
3. To create job opportunity for many Timorese in every process of fuel distribution system.
4. To enhance Timor-Leste private sector's participation in strategic industries such as fuel distribution.
5. To build capacity of local operators within petroleum industry especially downstream field in Timor-Leste.

4.5. The proponent's endorsements of the EIS

Lai-Ara Nikmat Mujur, Lda commits to implement all the requirements of this Environmental Impact Statement (EIS) and the Environmental Management Plan (EMP); including implementation of requisite legal frameworks. Monitoring of the site activities will be carried out by the company. As the project's proponent and will be responsible for day-to-day management and monitoring of the project's activities consist of jetty and fuel storage terminal.

4.6. The structure of the EIS

This EIS report is organized into 16 Chapters in line with the **Annex 4** in the Ministerial Diploma Regulation on the Detailed Requirements for Screening, Scoping and the Term of Reference (ToR), Environmental Impact Statement (EIS) and Environmental Management Plan (EMP) for Environmental Assessment 22 April 2014.

Chapter 1	Executive Summary
Chapter 2	Details of the Project Proponent
Chapter 3	Details of the EIS Consultant
Chapter 4	Description of the Project
Chapter 5	Policy, Legal and Institutional Framework
Chapter 6	Description of the Environment
Chapter 7	Climate Change
Chapter 8	Alternatives
Chapter 9	Impact Assessment and Mitigation Measures
Chapter 10	Social and Economic Impact Assessment
Chapter 11	Summary of Environmental Management Plan
Chapter 12	Public Consultation and Information Disclosure
Chapter 13	Difficulties Encountered
Chapter 14	Conclusions and Recommendations
Chapter 15	Non Technical Summary

Figure 1. General Location of the



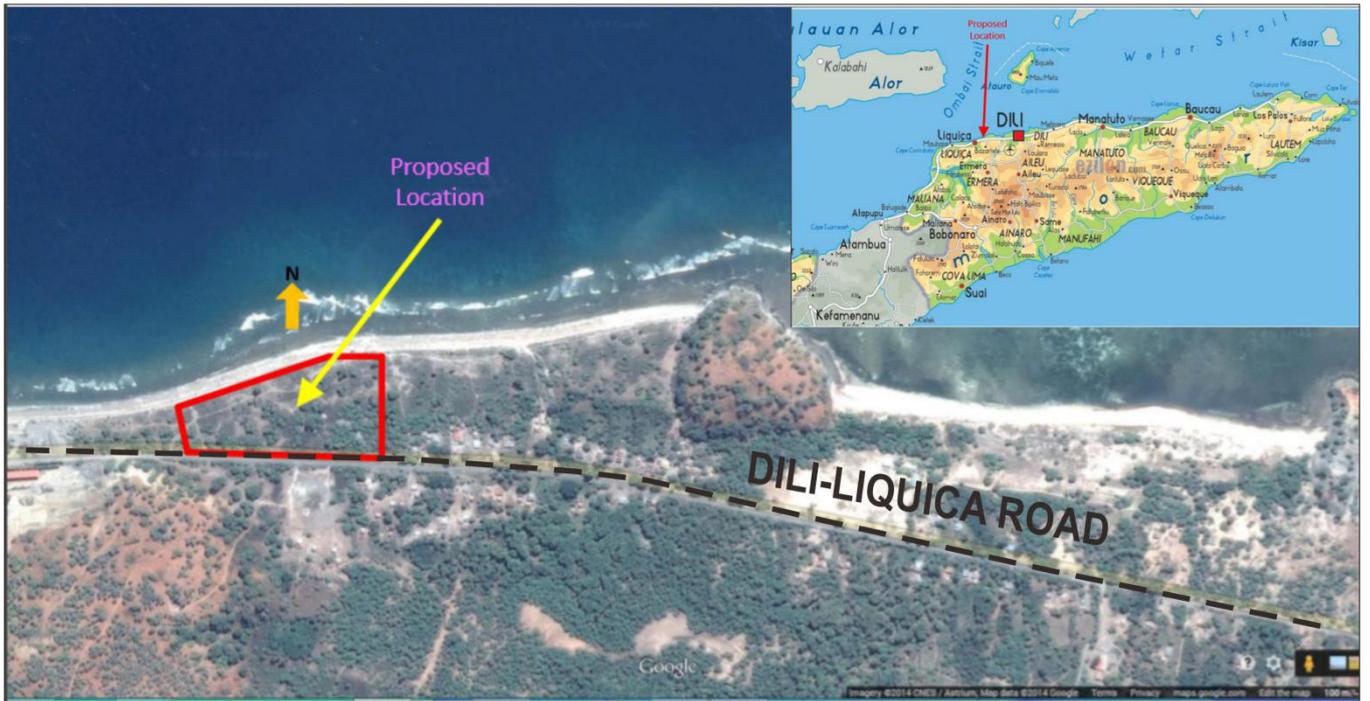


Figure 2. Proposed Location



Figure 3. Area affected by the project activities

CHAPTER V LEGAL REQUIREMENTS

5.1. Relevant Law

Timor-Leste Constitution provides the constitutional foundation for the protection of the environment and preservation of natural resources. Moreover, two other articles, i.e. Articles 61 and 139 stipulated conditions for the use and preservation of the environment and natural resources respectively with the purpose of ensuring an ecologically balanced and sustainable development approaches. Decree law 5/2011 Environmental Licensing contains procedures and other requirements related to securing environmental permit to start development activities. As of lately, guidelines for the formulation of required documents to prepare for environmental license have been developed through the Expert system that contains check list and other necessary documents for the preparation of Project Document, Environmental Impact Statement (EIS) for category A projects and Simplified EIS for category B projects. Other relevant environmental laws are listed above:

The Constitution stipulates that a healthy environment is a constitutional right. Title III of the Constitution of the Democratic Republic of Timor Leste stipulates the following provisions for Environmental Protection:

- Everyone has the right to a humane, healthy, and ecologically balanced environment and the duty to protect it and improve it for the benefit of the future generations.
- The State shall recognize the need to preserve and rationalize natural resources.
- The State should promote actions aimed at protecting the environment and safeguarding the sustainable development of the economy.

Environmental Basic Law no. 26/2012 sets the framework for other environmental legislation such as the Decree 05/2011 Environmental Licensing Law (ELL) and pending laws & regulations including the draft biodiversity law.

The Decree Law No 5/2011 Environmental Licensing. The Constitution recognizes the need for preservation and enhancement of natural resources and the need to determine actions to promote and protect the nature as an essential tool for sustainable development of economy of Timor-Leste. The law contains among others the following provisions:

- The procedure for conducting the environmental assessment, the review of application for environmental license, issuance and renewal of license.
- Categorization of the project according to severity of the environmental impacts (i.e. Category A, B and C).
- Procedures and information requirement for Category A projects (Environmental Impact Assessment) and Category B projects (Initial Environmental Examination).
- The review process for EIA and IEE documents, application for environmental license and the organization and composition of the review committee and its duties and responsibilities.
- Specific provisions for public consultation and the protection of the traditional customs and cultural practices, specifically the Impacts and Bargain Agreements (IBA) for projects required to submit EIA.
- The issuance of the decision by the Environment Authority on the review of the application and the rights of the project owner to appeal the decision.
- Classifications of environmental license, its duration and renewal; change of conditions of the license.
- The requirement for projects issued environmental license prior to the enactment of this decree-law to register with the Environmental Authority.
- The requirement for environmental monitoring, reporting obligations and duties of the license holder.
- The law also contains sanctions and penalties for violation of this decree.

Environmental Guidelines: In addition to the legal requirements DNCPIA also issues guidelines from time to time and refers to best international practice. There are 8 Environmental Guideline issued by the GoTL to regulate the activities which could create the impacts on the environment. The Guidelines are:

- Guideline #1 Environmental Requirements for Development Proposals.
- Guideline #2 Mechanised Sand and Gravel Extraction from Rivers and Borrow Pits.
- Guideline #3 Small Landfill Sitting Guideline.
- Guideline #4 Interim Tibar Landfill Operation Guidelines.
- Guideline #5 Prescribed Activities for Pollution.
- Guideline #6 Environmental Screening.
- Guideline #7 Storage of Fuel and Oil.
- Guideline #8 Ambient Noise from Stationary Sources

Occupational Health and Safety laws in Timor-Leste has not enacted or implemented regulations for working conditions, health and safety. UNTAET Regulation 2002/05, the Labour Code for Timor-Leste, is broadly relevant creates a National Labour Board to provide independent advice on occupational safety and health matters as well as training and skills development, minimum wages and other related functions. The Occupational Health and Safety Law was drafted in 2004, but has not yet been enacted.

(Draft) Biodiversity Decree Law 2012: Establish strategic significance of biodiversity to Timor Leste and promote sustainable use, conservation and fair and equitable sharing of biological resources.

Decreto Lei Governo No.6/2004 (21 de Abril de 2004), Artigo 81. Proteksaun Ambiente Aquatica, Artigo 85. Proibidu halibur ka hasai Ahu ruin (Coral Reef), Establishment of a protected areas system and protection of marine ecosystem (turtle, shark, crocodile and also coral) in Timor Leste.

Law No. 13/2017 (5 of June) Article 23 Public protection zone, Provide a good manner and a quality standard of environmental management system to community including other protection zone (cultural, private land, garden, secret area).

World Health Organization (WHO) guidelines for drinking water quality, sanitation and waste water, Safely managed sanitation and safe waste water treatment and reuse are fundamental to protect public health.

ANPM regulation NO.1/2016, of march 2016 on Installation and Operation of Storage facilities annex five about license fee for fuel storage capacity > 380 m³ it is about USD 7000 + USD 100/additional M³ annual fee

International Finance Corporation (IFC), Environmental, Health, and Safety General Guidelines. The IFC EHS Guidelines is a reference of a good international industry practice. The EHS Guidelines contains the performance levels that are generally considered and the mitigation measures used to maintain and or maximize the environmental conditions in project's activities.

This guidelines provide a necessary guidance to deal with the environmental impact on industry sector. For more information of the IFC EHS Guidelines please refer to this link: <http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES>

**CHAPTER VI
DESCRIPTION OF THE ENVIRONMENT**

6.1. Physical Components

1. Climate

Mota-Ulun village climate is classified as tropical with much of rainfall. As we can see on ALGIS data 2016, the Table 3 bellow, explain that, the mean temperature 2016 is from 28.02 °C – 32.72 °C, that temperature shown in February and September. The minimum Mean Humidity level is 69.85 % in August and the maximum is 83.81 % in February. The Total rain fall minimum in August is 3.00 mm and the maximum is in December is 254.40 mm. The minimum mean of the wind speed is 0.60 ms⁻¹ in March and the maximum is 1.09 ms⁻¹ in August. The radiation maximum total is 23.89 MJ/m²/d in November and the minimum level is 17.14 MJ/m²/d in June.

Table 8. Monthly Weather from ALGIS, 2016

Month	Temperature (°C)	Humidity (%)	Rain (mm)	Wind (ms ⁻¹)	Radiation (MJ/m ² /d)	Eto (mm)
	Mean	Mean	Total	Mean	Total	Total
January	28.67	79.62	72.80	0.86	22.33	5.17
February	28.02	83.81	139.00	0.61	23.38	5.11
March	28.33	83.70	39.00	0.60	22.19	4.89
April	30.07	78.05	23.80	0.82	21.37	5.03
May	30.51	79.24	46.20	0.92	18.39	4.42
June	29.20	76.75	37.60	0.84	17.14	3.98
July	28.87	74.44	5.20	0.93	17.71	4.22
August	31.21	69.85	3.00	1.09	20.82	5.47
September	32.72	76.19	94.80	1.05	22.44	5.89
October	32.34	74.90	48.60	0.84	22.88	5.88
November	32.37	75.08	38.00	0.89	23.89	6.08
December	31.05	80.43	254.40	0.97	18.52	4.67

The other data of Mota-Ulun village at the figure bellow from SEED OF LIFE 2013, shows that the minimum mean temperature is ± 24 °C from the end of July until mid of September and the maximum temperature is ± 28 °C. The minimum rain fall average is ± 5 mm in August and September and the maximum rain fall average is ± 218 mm in January.

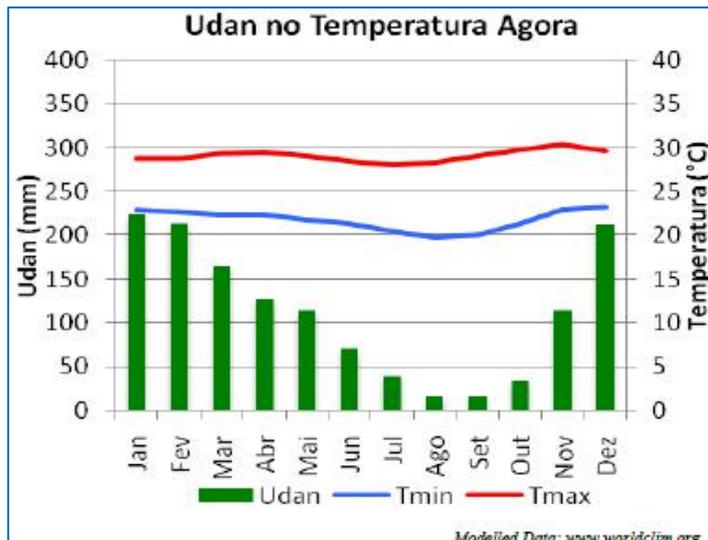


Figure 7. Mota-Ulun Village Climate Graphic Average, Seed of Life, 2013

The Climate map below shows that the area of Mota-Ulun village to the north parts in the map shows that the rain fall in the area is less and more hot. The yellow or brown color shows that the area is dry and hot; opposite to the south side is a green and blue, show that the south side is wet and cold.

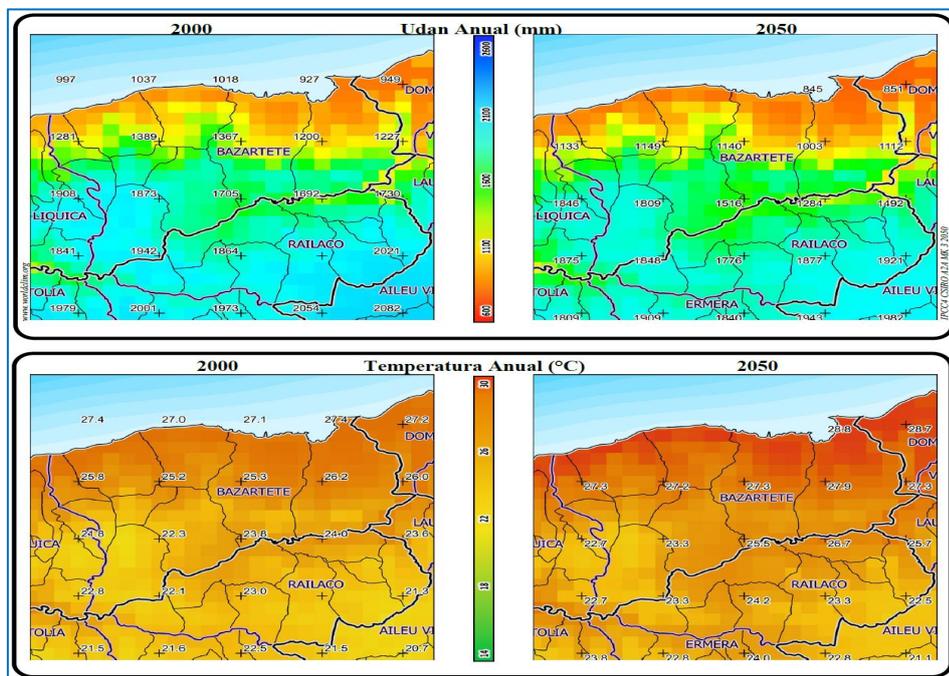


Figure 8. Mota-Ulun Village Climate Map, Seed of Life, 2013

2. Topography

Timor Leste is characterized by numerous hills and mountains, and few extensive plateaus or plains. The central mountain range declines sharply to the north and south coast via short river catchments to steep hills and ultimately to riverine and/or coastal plains and sometimes to coastal cliffs.

The central mountain chain runs from near the Indonesian border for about 150 km to the Turiscai area, punctuated by many peaks above 2.000 m+, including Mount Ramelau (2.963 m). Large isolated mountain ranges including Mount Matebian (2.373 m), Mount Kuri (1.300 m) and the distinctive karst formation of Mount Paitchao (970 m) in the far east. Mount Manucoco on Atauro Island is steep and reaches about 970 m. There is a narrow coastal plain (3-10 km wide) along much of the south coast of Timor Leste. The Maliana region is dominated by an alluvial plain in the Loes catchment and has been converted for agriculture.

Topography in the project site, it shows that the project is located close to the mountain range of Bazartete post administrative. It is 60 percent mountains and 40 percent of land. The maximum altitude of in the map picture ± 150 msl and the minimum altitude of the land is 3 msl. In the east side of the map above, around 3 kilometres from the project area, there is mangrove forest. It is around 3 hectares wide that needed to be protected, even though it is far from the project area.

Topography in the project area is near the coast and has a flat / sloping area (height less than 8 meters above sea level) with a slope of 0-20 (0-8%), in the south the project location is dominated by hills -strong. Fuel storage terminals that will be operated only in flat areas and for Jetty will be in the sea.



Figure 9. Topography map of Motaulun village

3. Geology

Geology area dominantly is Aileu Formation (Audley-Charles, 1968) with metamorphic rocks such as meta sandstone, schist, amphibolite, phyllite and limestone. Liquica is a coastal city in Timor Leste, but in the south (sub-district of Liquica) post administrative of Bazartete are hills. Estimation of the basement rock will be found in the deep of 25-35 meters. The basement rock would be the hard limestone or sedimentary rocks or metamorphic rocks.

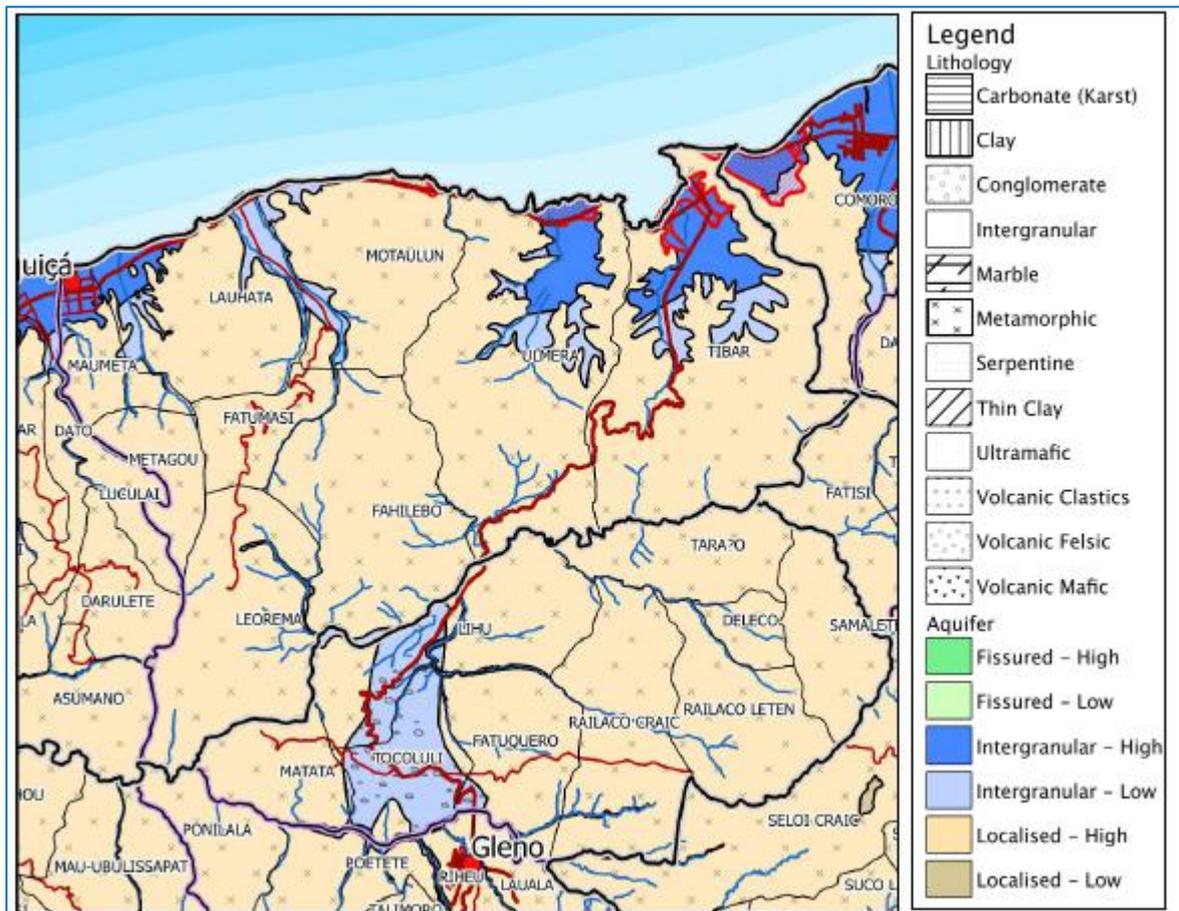


Figure 10. Land Structure Map of Mota-Ulun Village, Seed of Life, 2013

4. Air

Available Air quality data only in Dili town, taken during an Environmental Impact Assessment (EIA) study by the consultant reveals that human activities, mainly transportation and solid waste burning within the area are the main sources of air pollution in the city.

Testing at the time showed that one of the most main sources of pollution was dust, due to the vehicular movements on the dirt roads, which cause significant dust dispersion. The construction works identified at the time are of the same nature and typology of those

currently under way throughout the city and, to a lower extent, of those proposed by the project, which contribute to the high levels of dust particulates in the surrounding atmosphere.

On this study, parameter particle that will be measure is PM₁₀, but in this time because of the limit of equipment, so parameter that measure in the field we using Carbon Monoxide Meter and Anemometer. Location of measure divided into 2 point, first point in the centre area of project proposed and second point in the near the community (roads/in front of project). Result of the sample/analysis will showing in the following table:

Table 9. Result of the air quality analysis

Parameter	Unit	Standard	Result	Method/equipment
1	2	3	4	5
In the project site (centre point) (UK-1) Coordinate S 08° 56' 35'', E 125° 41' 12'' Temperate = 30,8 ° C Humidity = 29,9% Velocity of air = 1,06 m/second Air direction = North to south Weather = cloudy				Anemometer
CO	(µg/m3)	50	0,0	Carbon Monoxide Meter
Near the community /outside the project site (UK-2) Coordinate S 08° 56' 43'', E 125° 41' 15'' Temperate = 30,8 ° C Humidity = 29,26% Velocity of air = 2,16 m/second Air direction = North to south Weather = cloudy				Anemometer
CO	(µg/m3)	50	0,0	Carbon Monoxide Meter

source : Result of measuring in the field (guideline according to WHO air quality guidelines)



Figure 11. Collecting data about air quality in the project site

Based on air quality data around the aldeia Motaikun, Suco Motaulun, Post Administrative of Bazartete, it was noted that the air temperature ranged from 30.8°C, air humidity ranged 29% RH, the dominant wind direction moved southward with speeds between 1,06 m/sec - 2,16 (12:30pm -01:30pm), when the weather is generally sunny

cloudy. So the result is under the standard (it's mean not affected), of all air pollutant parameters that have been detected, all of them have a concentration value that meets the environmental quality standard based on the World Health Organization (WHO) environmental quality and effective investments for public health such as air quality guidelines (global update 2005).

4.1. Noise

Timor Leste is a development county, nowadays noise pollution are coming from human activities, quarry, industries and transportation. Municipality of Dili is a most noise pollution because vehicles and part of south is a quarry area.

In Municipality of Liquica, specially in Motaulun Villages Ambient noise is a still normal (standard). Environmental team was collecting 2 point for analysis noisy in the project location, details of the data that collected until analysis of noise, that is:

1. NOISE LEVEL FROM THE CONSTRUCTION

Based on calculation of the noise get the result; The level caused by the construction with the distance of 230 meter to the community around, does not have an impact to the surrounding community, because the noise does not exceed the quality standard (IFC Ambient Noise 70 dBA) because only 48 dBA (see Annex 5)

2. NOISE LEVEL FROM THE MOBILIZATION

Based on the calculation of the noise get the result; The level caused by the vehicle lane is at the distance of 40 meter, does not have an impact on the surrounding community, because the noise does not exceed the quality standard (IFC Ambient Noise 55 dBA) because only 48 dBA (see Annex 5)

Table 10. The level of noise caused by the construction and the vehicle, in different distances

No	dBA	DISTANCE (METER)						
		0-10	30	60	100	150	200	230
1	L1	> 82,5	78	73	68	64	60	48
2	L2	> 58	49	46	45	44	43	42

Source: environment team

Table 11. Environmental noise quality ranting scale

SCALE	NOISE (dBA)		
	I	II	III
5 (very good)	50-53	50-55	50-60
4 (good)	53-57	55-62,5	60-70
3 (sufficient)	57-63	62,5-72	70-80
2 (bad)	65-75	72-85	80-90
1 (very bad)	75-100	85-100	90-100

Information: I. Continuous / several sites
 II. Frequent / few sites
 III. Infrequent / Sparse



Figure 12. Collecting data about noise in the project site

5. Surface waters

During the rainy season the river flow is sedentary and often leads to flooding. While in the dry season, the water is shrinking and some are dry. The type of surface water in the liquica district is not permanent. On the west of project location there is a creek closed and filled by water only at rainy season.



Figure 13. The state of the river during the dry season

6. Groundwater

Groundwater in the Bazartete are coming from mountain and the community already have their own well to get the water, but already intrusion (mix) with coastal water (salt water) in that area (around villages), so community get the fresh water from another villages.



Figure 14. Groundwater sampling

On 26 March 2018 at 10:30am (groundwater collected for analysis in laboratory) and on 24 May 2018 (visual test for water quality) environmental team was collected that data for knows details about water quality in Suco Motaulun. Data that collected are 2 point in different location near the project site, first point is visual test using PH tester (**table 12**) and second is test in laboratory (**table 13**). The result of groundwater analysis in table bellow;

Table 12. Result of water quality test in the field using PH Tester

No	Parameter	Who Guidelines for Drinking Water	Result
1	PH	6,5 - 8,5	7,81
2	E.Conductivity	100 ms - 1 ms	10,58
3	TDS	1000	7,44
4	Salinity		5,91
5	Temperature		29,8

Source; environmental team

Table 13. Result of groundwater analysis in laboratory

No	Parameter	UNIT	Guidelines (WHO)	Result
1	2	3	4	
	Coordinate	08 56' 45	125 41' 26	
	Depth	meter		18
FISIKA				
1	PH		6,5-8,5	8
2	EC	ms	100-1	5,43
3	TSS	mg/L	Ns	-
4	TDS	mg/L	1000	2,71
5	Temperature	°C	+/- 3	2,9
6	Salinity	%		30,1
7	Turbiditas	NTU	5	1,14
KIMIA				
1	NH3-N	mg/L	1,5	0,06
2	NO3-N	mg/L	50	7,2
3	NO2-N	mg/L	3	2
4	Fe	mg/L	0,3	0,19
5	Mn	mg/L	0,5	-
6	Flouride	mg/L	1,5	0
7	Cl	mg/L	250	-
8	Free Chlorine	mg/L	0,5	0,20
9	Ca. Hardness	mg/L	2,5	0
10	Mg Hardness	mg/L		0,89
11	Hardness Total	mg/L	200	0,89
12	Total Alkalinity	mg/L		-
13	Sulphate	µg/L	250	3000
14	Arsenic	mg/L	0,1	-
MICROBIOLOGY				
1	Total Coliform		0	2400
2	E. Coli		0	2400
3	ALT		0	

Source : result from analysis in laboratory

Based on field survey groundwater in suco motaulun already intrusion from marine water, so community get the fresh water from another village (supply from another Suco), from the visual inspection prove that groundwater can not be drink, and the result of the analysis in laboratory, water in Suco motaulun is can not be drinking according to WHO guidelines from drinking water.

7. Coastal waters

Coastal area around the project area, around ± 3 km there is a place called Sal do Mar. The place is for producing local salt call Masin Timor (local name). The other potential is sea weed that produce much in summer season, it is tasted good for mixing food especially local chili in every house in Timor-Leste.



Figure 15. Producing local salt

8. Marine waters

From marine area, the fishermen catch much fish using nets and fishing lines. Liquica still produce the fish until now but it is not industry but local catching for getting the fast money and continues every day. It is still traditional fishing activities using the boat like canoe. It is 90 percent of Liquica people and the village of Motaikun people are fisherman.

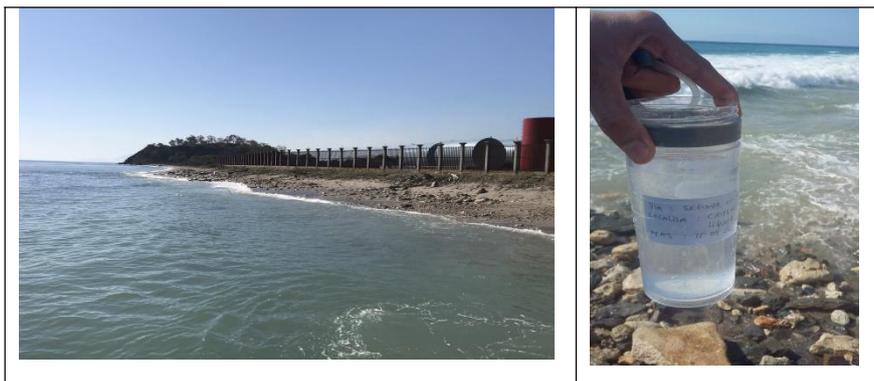


Figure 16. Marine water analysis

Based on the visual test in the project location and test using PH meter for marine water and laboratory test (**table 14**) about marine water quality on 30 July 2018 the conclusion is; Marine water in Kaitehu, Motaikulun still good because not contained with the other chemical hazard (according to guideline Indonesia about Marine water quality).

Table 14. Result of analysis marine water quality in laboratory

No	Parameter	UNIT	Guidelines (Indonesia)	Result
1	2	3	4	5
FISIKA				
1	PH		7 - 8,5	8
2	EC	ms	100-1	49,1
3	TSS	mg/L	Ns	-
4	Temperature	⁰ C	+/- 3	25,2
5	Salinity	%	+/- 3	32,1
6	Turbiditas	NTU	5	3,44
KIMIA				
1	NH3-N	mg/L	1,5	2,49
2	NO3-N	mg/L	0,008	0,8
4	BOD5	mg/L	10	2,3
5	Oil and fat	mg/L	1	0,02
6	Arsenic	mg/L	0,1	-

Source: laboratory analysis by "KM" Consulting

9. Soil

The lands in this area are very dry in dry season and no flood raining season. The land contains much of mud and mud rock. The geotechnical of the land will be found much of loose sand and mud. It is recent sedimentation of young age, it makes the land is not compacted very well. Estimation of the basement rock will be found in the deep of 25-35 meters. The basement rock would be the hard limestone or sedimentary rocks or metamorphic rocks.

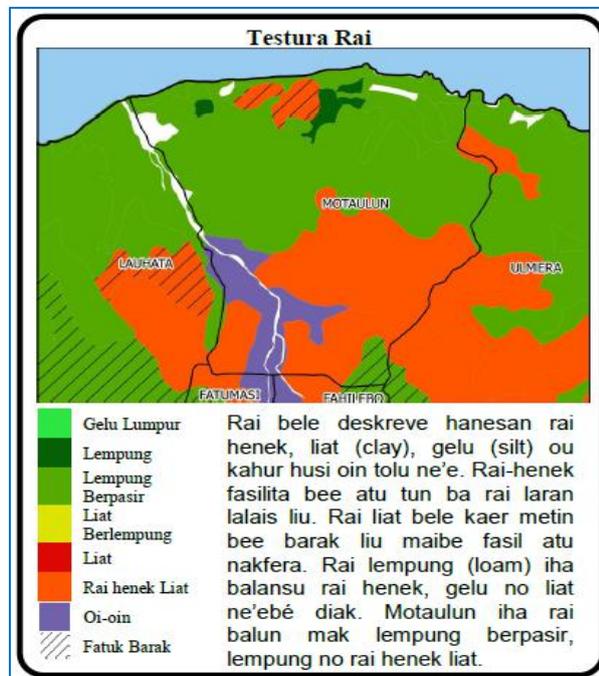


Figure 17. Land Structure Map of Mota-Ulun Village, Seed of Life, 2013

Base on the data that collected by Ministry of Public Work (research and development) on 19 May 20018 in 3 point (in the project location), analysis in laboratory from DCPT with result average:

- A. Hard layer of soil in 3.80 - 4.00 meter depth
- B. Value of total friction 326.5064 - 343.6910 kg/cm



Figure 18. Location of the soil test in project site

6.2. Ecological Components

1. Wetlands

Timor Leste originally supported a diversity of lowland and mountain ecosystems dominated by forests and woodlands. Human activities have impacted heavily on the extent and condition of the natural vegetation. The destruction of habitat and invasive species are considered to be the greatest threats to the native biota of Timor Leste, and to be having the particular impact on forest and woodland dependent species. For example, four of the resident bird species on Timor are threatened with global extinction and eleven are near threatened because of habitat lost, in addition to hunting and trapping for the wild bird trade. Important wetlands which support many resident and migratory water bird species, including four near threatened shorebirds, are also at risk.

The wetlands in the liquica district are typically tidal land. Tidal land is a land located in the zone / region around the coast that is marked by the direct influence of water

runoff from the tides of sea water or only affect the face of ground water. Most of the soil types in tidal swamplands consist of peat soils and acid sulphate soil.



Figure 19. Wetland in the around motaulun village

2. Mangroves

Mangroves, which appear to be remnant patches are found in along the coastline of Tibar, vicinity of the starting point. Portions of the mangroves have been cleared and converted to aquaculture ponds and salt beds. Deforestation of mangroves is likely partly due to requirement for firewood for salt production.

Mangrove forests are forests that grow on brackish aquatic swamps that lie on shorelines and are affected by tidal sea water. Mangrove ecosystems in coastal areas bazartete liquica timor leste district plays an important role for the people around the area and the biota that live in it and maintain and stabilize the coastline and the edge of the highway.

The last few years the condition of mangrove ecosystems in coastal areas of bazartete timor leste, generally shows a decrease in quality and quantity due to human activities that utilize the excessive and natural disasters.



Figure 19. Mangroves near the project site

3. Corals

Intertidal flats and fringing reefs are indicated to be present along the coastline of Tibar. The reef along the coastline of Liquica has been reported to be a scuba diving attraction. However, there is no description of the general status of the coral reefs in this area. The beach is rocky like a beach in general in Timor Leste. In the coastal areas there are coral reefs as a place to live various kinds of marine life and is a natural tourism object of high value selling.

4. Fisheries

Fishing in the sea of liquica is still well preserved. There are various kinds of fish with high economic value such as (tongkol, skipjack, mackerel, snapper etc.) which can be used continuously to support national economy.



Figure 20. Fishing Results

5. Protected areas and national parks

Timor Leste is situated east of the Wallace line and, therefore, as part of the Wallacea region has biological elements of both Asian and Australian origin. However, there is no up to date information on population numbers or locations of any remaining native species, with a few bird species as exceptions.

Some 224 species of birds have been observed in Timor Leste. Of these, seven species and two genera are endemic to the island. Most of the bird and larger mammal species native to Timor Leste are either forest dwellers or are relying on the forest for part of their life cycle. According to a recent report on the important bird areas in Timor Leste 4, “the majority of these species are dependent on closed canopy tropical forest, or other forest types”. Protected areas and national parks around the project are not found. In liquica district there are also no protected areas and national parks.

6. Flora and fauna

The study area which is the location of the jetty and fuel storage terminal project plan is a terrestrial ecosystem in the form of vacant land, most of the land cover vegetation is a mixed vegetation such as horticultural crops, shrubs, shrubs and food crops.

➤ Flora

Generally the vegetation around the project site location consists of plants such as ai-lok (local name), sour tree. The land closure at the activity site consists of grasses for cow feed and embarrassed daughter (*Mimosa pudica*). Flora in the location of the

Project site ecologically serves as a wildlife habitat and buffer the soil with its root system so as to reduce the risk of erosion.



Figure 21. Flora around the project location

➤ Fauna

There are several types of fauna that live around the site of the wildlife fauna plan such as lakateu bird (local name) and sparrow, while others are land fauna which are mostly pets such as goats and cows. The existence of the terrestrial fauna is commonly found elsewhere and does not include protected fauna in accordance with the law of conservation of biological natural resources.



Figure 22. Fauna (Goats and Cows)

6.3. Economic components

1. Employment sectors

Most of the population in Dili relies on direct employment and commercial activities. In Liquica many people travel to Dili for work. Supplementing incomes by collecting and selling firewood and agriculture are also major occupations. Limited alternative sources of income have resulted in rising numbers of poor people in rural areas. High population growth (about 3% annually) rapid urbanization and a small formal sector have resulted in slow rates of job creation in urban areas and have contributed to poverty rates rising. Most of the unskilled population mined and sell the sand from the Comoro river, the income depends on the sold out sand material to the consumers which is mostly the residents living around Dili.

Approximately 41% of the total population lives on Revenue of less than \$ 1 per day. There are differences with people living in rural and urban areas. Approximately 71% of people living in Dili have the highest service in timor leste, recalling that women and many much more are more likely to be involved in sales and services and in professional, technical and managerial jobs. (DHS)



Figure 23. Employment Sectors

2. Infrastructure facilities

Infrastructure facilities located near the project, precisely suco motaulun, liquica district, have developed very rapidly. Infrastructure development is expected to improve the economic and social life of the community. Infrastructure facilities located near project areas such as bridges, paved highways, petrol stations, school, health clinics, churches, drainage, electricity and road dividers.



Bridge

Highway

Fuel station

Church

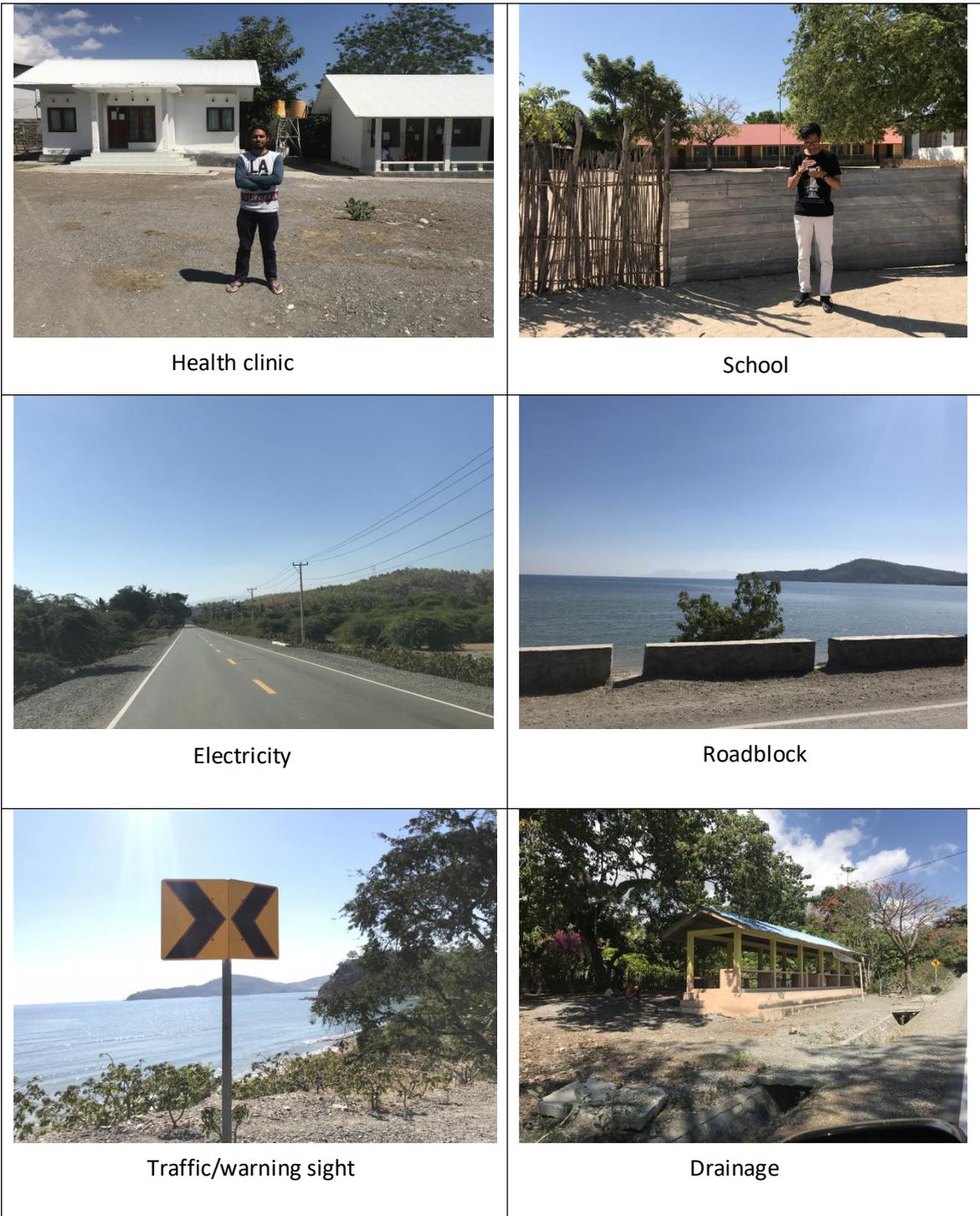


Figure 24. Infrastructure Facilities

3. Land use

Land use for catchment is mainly urban and rural land. Urban land comprises offices, shops, housing or residential areas, schools, bridges and roads, while agricultural development and secondary forest resources are mostly located in non-urban land. Land use forest, fisheries and settlement.

4. Use of forest and other natural resources

Forest use and other resources have not yet been managed. Knowledge for management is still weak among the surrounding community.

5. Fishing

Fishing activities in the village of Motaulun have often been carried out by the surrounding community. Coastal fisheries are abundant but are located in narrow coral reefs.

6. Agriculture

Agriculture in the Motaulun village is the same as in other villages. Existing agricultural products such as rice, vegetables, bananas, etc. Management is still weak, if managed properly it will generate a large income.

7. Tourism

Liquica municipality lying to the west of Dili has an attractive coastline interspersed with rocky headlands, coves and beaches. These offer good swimming and the coral reefs provide excellent diving opportunities. There are small towns dotted along the coast road and roadside vendors selling local produce from the hills beyond.

In the liquica district many tourist attractions are often visited by tourists, such as Ai Pelu Prison, Ulmera Beach, domestic and foreign tourists who visit many tourist attractions in liqAi district pelu prison.

The tourism of Timor-leste is stepping slowly among the tourism of other countries in the world. Tourism Timor -Leste offers a variety of facilities for the tourists. East Timor was not originally a popular tourist attraction for foreign tourists, but has recently begun to refine itself and start to become the most important part for foreign tourists to visit due to the economic and the security situation is gradually improving.



Figure 25. Tourism view near the project site

8. Other industries

Near the project site there is a traditional hat (xapeu) industry whose basic ingredients can be easily found in the region. The basic ingredients for making traditional xapeu come from the ai-kadiru tahan tree (local language).

Not far from the project, the coconut oil industry managed by the Mada HeliQ group was found in local languages (in Habica's liquid economy) with assistance from the Ministry of Agriculture and Fishery in Republic Timor Leste. Other industries were also found again, such as the brick making industry.





Figure 26. industries in suco Motaulun

D. Social Components

1. Population and community

The total population in Timor Leste in 2018 is: 1,269,794 people. the number of men in Timor Leste was: 647,251 people (51.0%). the number of women in Timor Leste is: 622,543 people (49.0%). The number of babies born this year is: 28,739 people. The number of babies born today is: 31 people. The number of deaths this year is: 5218 people. The number of deaths today is: 6 people. The number of Timor Leste people who have immigrated this year are: -6621 people. The number of timor leste people who immigrated today is: -7 people. The total growth of the Timor Leste community this year is: 16,901 people. The total growth of the Timorese community is: 18 people.

Motaulun area is 22.7 km². In Motaulun Village there are 3 Aldeias, consisting of Aldeia Claso, Aldeia Mau Luto, Aldeia Mota Ikun, Aldeia Area Total families in Motaulun Village, sub administrative bazartete, liquica distrik, Timor Leste at the 2016 census is 436 heads of families. The total population for female sex is 1075 people and for male sex is 1034 people.

The selected demographic data (population, male/female and sex ratio) of communities within the project corridor is enumerated in the following table.

Table 15. Population and Household Data of Motaulun village

LACATION	NUMBER OF PEOPLE			NUMBER OF HOUSEHOLDS
	MALES	FEMALES	TOTAL	
SUCO MOTAULUN	1,227	1,149	2,376	390
DISTRICT LIQUISA	32,240	31,163	63,403	-
TIMOR LESTE	544,199	522,210	1,006,409	184,652

1. Education and Literacy

Table 16 below gives an overview of the school attendance in the project's corridor. The data shows that people who in school between people who left school are similar.

Table 16. School attendance status of People Aged > 5 Years Old

LOCATION	SCHOOL ATTENDANCE				TOTAL POPULATION
	AT SCHOOL	LEFT SCHOOL	NEVER ATTENDED SCHOOL	DON'T KNOW	
SUCO MOTAULUN	808	759	450	11	2,028
LIQUICA	6,586	5,939	6,271	218	19,014

Table bellow will showing the highest of education achieved by the population aged five years and over, by sex in Suco Motaulun, that is;

Table 17. Literacy Rate of People Aged 5 years and over in the suco Motaulun

LOCATION	LEVEL OF EDUCATION						
	Pre-Primary	Primary	Pre-Secondary	Secondary	Diploma	University	Non Formal
SUCO MOTAULUN	72	647	379	332	7	77	53
LIQUICA	581	6,421	2,437	2,244	103	635	104

2. Livelihood and Poverty

Most of the population in Dili relies on direct employment and commercial activities. In Liquica many people travel to Dili for work. Supplementing incomes by collecting and selling firewood and agriculture are also major occupations. Limited alternative sources of income have resulted in rising numbers of poor people in rural areas. High population growth (about 3% annually) rapid urbanization and a small formal sector have resulted in slow rates of job creation in urban areas and have contributed to poverty rates rising. Most of the unskilled population mined and sell the sand from the Comoro river and Liquica River the income depends on the sold out sand material to the consumers which is mostly the residents living around Dili.

Damage to infrastructure and the dislocation of the population during the independence struggle 1999 and the holocaust 2006 made Timor-Leste's poverty problem worse. Local studies indicate that a higher proportion of the rural population are poor, compared to the urban areas. About 75% of the poor live in rural areas and 25% live in urban areas. The poverty incidence in the affected area is high. All household have access to electrical power from the national transmission grid. Drinking water is provided from distribution pipe and local wells.

1. Health profiles of communities

The bad side is that there are a lot of mosquitoes in the area that cause deadly diseases, such as malaria and dengue fever. In the Motaulun village there is also a health clinic that serves the surrounding community who are sick, but only for mild disease. When there are people who are seriously ill, then the clinic provides a car to take to the hospital in Dili.



Figure 27. Motaulun village health clinic

2. Institutions, schools and health facilities

Around the project no institution was found. Around the project there are several schools that we found such as AHHA Education, Kaitehu Elementary School and Siklu de Bogoro.

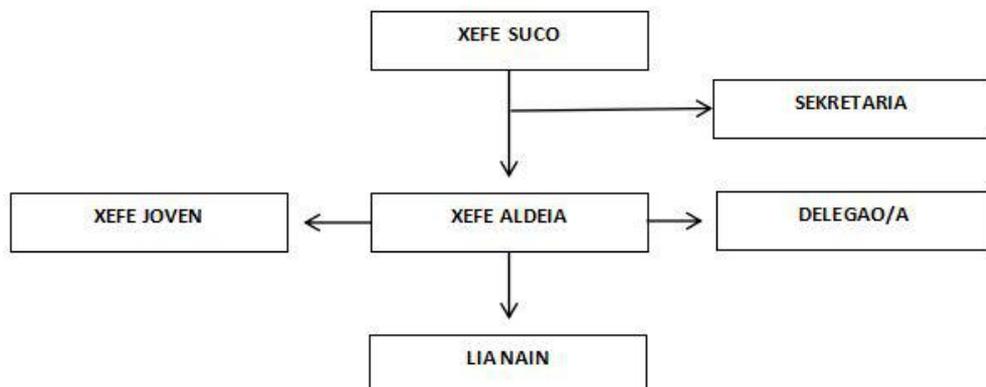
There are many health facilities and hospitals in Dili District. There are also several health posts and community health centre in the Liquica Municipality. The nearest hospital is located in Dili, but for health clinics in the village of Motaulun is available. The project area population has access to basic sanitation (latrines and septic tanks).



Figure 28. Institution and schools in the motaulun village

3. Community structures, family structures

Generally every village (suco) or in the communities have their own leader or structure to lead/guide that village. In motaulun village also have structure that lead by xefe suco, about them include the following;



4. Land ownership, including informal or customary land ownership, and any other rights over the land

The land used for the project is Government-owned land, but the land is leased by the Government to the project owned. From 2014 until present, the legal ownership of the land is owned by the Timor-Leste Government but has officially rented by Lai-Ara Nikmat, Lda. for the company investment purpose. Land in the area near the project site is basically private land, specially in Suco Motaulun, but in parts close to the beach most of them belong to the Government.

6.4. Cultural components (including non-physical resources)

1. Cultural heritage

According to Trindade (2011), Lulik regulates social interaction and provides moral standards regarding the relationship of people. In the case of human relations with nature, Lulik demands that nature (land, water, trees / forests, rocks / rocks) must be respected. Trindade (2011) explains that this is the reason for ceremonies such as rituals after harvesting corn and before planting seeds. This ritual was intended to show gratitude and appreciate soil fertility and he mentioned that the Batar Sau ceremony was carried out before harvesting corn was one of the important rituals of the Timorese people.

Traditional houses in Motaulun suco are usually used when silu batar (harvest) and thanksgiving events such as kasu, etc. For custom events in one year there are usually 2x custom events.

2. Archaeological sites and Sacred sites

During the Portuguese occupation, there were very few buildings there apart from traditional huts inhabited by the local East Timorese people. Most of the buildings there were built during the Indonesian occupation, but were largely destroyed by militia riots and violent attacks before and after the referendum in 1999. Some of the buildings that are still intact are Portuguese buildings. Many of Indonesia's buildings can still be repaired. Its construction and design are traditional Indonesian styles that are ancient, yet artistic and creative. Archaeological sites can be found not far from the project site, such as Monuments and Ai-Pelu Prison (local name).



Figure 29. Monument and Ai-Pelu that near from the project location

3. Historic sites

Many stories remain about a Japanese army colonel who was shot and killed in the distance by an Australian SAS sniper in World War II, before hundreds of East Timorese eyewitnesses. No one knows for sure the date. People are not entirely convinced that it is a folktale, a legend, or is it really happening. But the story is typical of the experience in Liquiçá.

Liquiçá has a wonderful history, but is overshadowed by sadness and suffering. At the beginning of the Portuguese occupation, the Maubara sub-district, part of the Liquiçá region, was captured by the Dutch. The Dutch fort at Maubara near the beach is still well preserved and still has original cannons whose snout was directed to the bay. Later Portugal negotiated with the Dutch and exchanged it for Flores Island, which was then occupied by the Portuguese.

Maubara is also the site of the first time the dreaded militia group, Besi Merah Putih. During the Indonesian occupation, the Indonesian government built many buildings in Liquiçá, but after the 1999 referendum and during the campaign the militia were almost all destroyed. Most notably, many East Timorese were killed during the Liquiçá Church Massacre in April 1999. In September 1999 an American police officer under international police was shot (though not fatal) by pro-Indonesian forces while the United Nations evacuated Liquiçá.

From September to November 1999, life returned to normal in Liquiçá, when the UN Peacekeeping Force from Portugal built a base in Maubara, and the International Police built its headquarters in the center of Liquiçá. At first there were 14 International Police officers assigned to Liquiçá. They represent Sweden, Canada, Great Britain, Ghana,

Malaysia, and the United States. In Liquiçá also International Police officers who served in East Timor were killed by high dengue fever; he is from Ghana. During this time, the International Police occupied the same church complex, at the site of the Liquiçá Church Massacre. The Peace Guard's military element for Liquiçá is a Portuguese marine.

CHAPTER VII CLIMATE CHANGE

7.1. Climate change

Monthly average temperature and weather, sunny and cloudy days. Rainfall and snowfall in Liquiçá 2015 - 2018. Average monthly temperatures (day and night) in Liquiçá. Average annual rainfall (rain and snow) and wet weather months per month in Liquiçá.

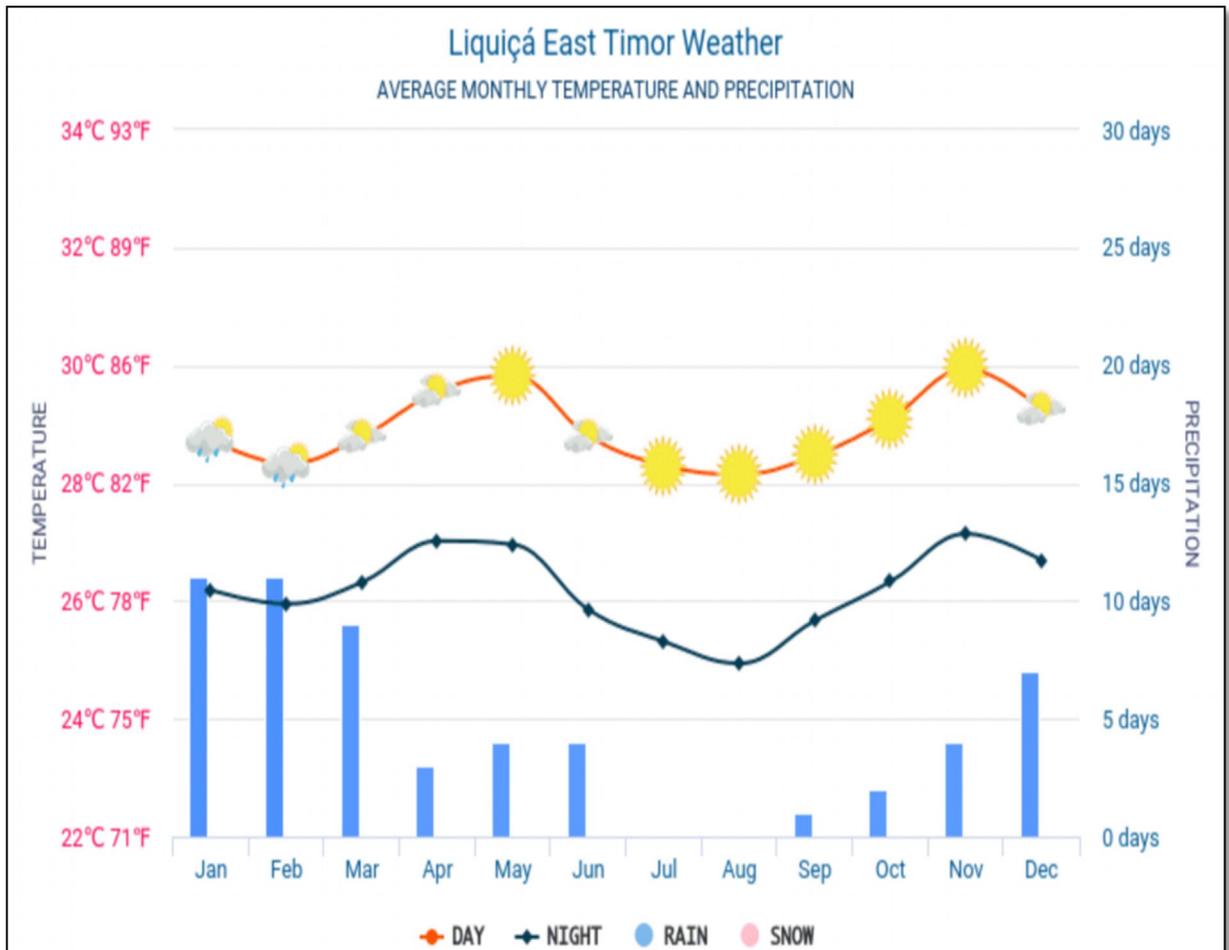


Figure 30. Diagram Liquica Weather, A brief description of the climate of Liquiçá

The weather in Liquiçá is influenced by tropical wet & dry climates. Dry season there are more than two months with less than 60 mm (2.4 \ ") of rainfall. All monthly average temperatures are greater than 18 ° C (64 ° F). Rainfall in the dry season is less than 100 mm. around the tropics it is also close to the equator. The climate of the project site is tropical, hot and humid and temperatures are largely affected by altitude. There is lower rainfall observed along the northern coast of Timor-Leste. The main rainy season is from December to March.

Liquica

DMSU

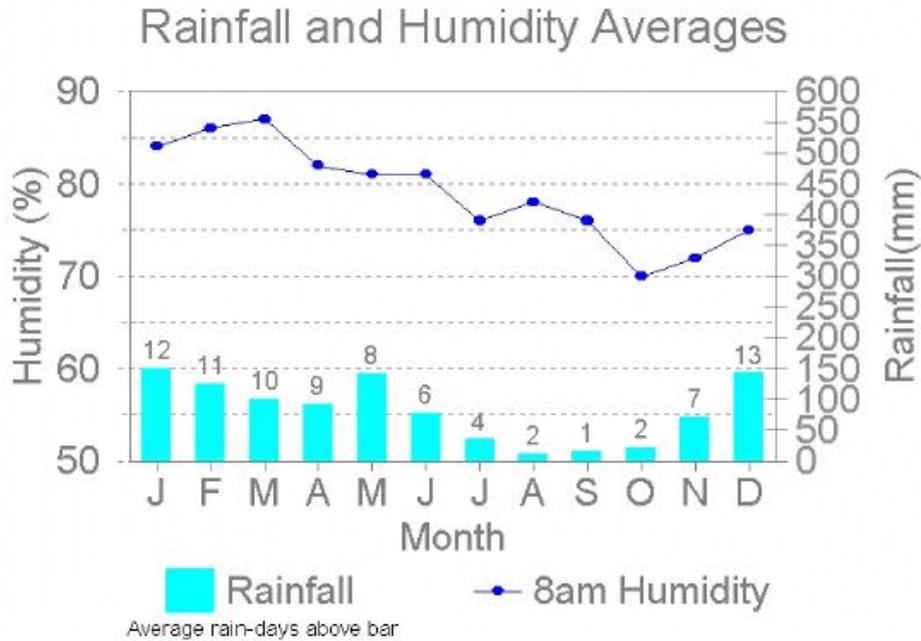


Figure 31. Rainfall and Humidity data of the Project Area

There are two types of potential climate change impacts relevant to the development. The first are Adaptation types of impacts which are impacts that will influence the ability to adapt to changes in physical characteristics of the environment such as sea level rise, change in rainfall pattern, raising temperature, and others. The second types of impacts are the Mitigation impacts which are the impacts that will influence the ability to mitigate the increase in Greenhouse Gas (GHG) emission and to stop the loss of carbon pool (loss of trees and other vegetation) and to increase the potential for carbon sequestration. Potential of Adaptation and Mitigation to climate change impacts are presented in **table 18**.

Table 18. Relevant Parameters, Criteria and Indicators for Adaptation and Mitigation To Climate Change Impacts

Components	Relevant Parameters	Criteria and Indicators
Adaptation Sea level rise, coastal erosion, etc.	Coastal erosion	Sand movement, etc.
	Wild forest protection	Area of forest
Mitigation GHG emission, loss of carbon pool and increase potential for carbon sequestration.	Emission from vehicle and equipment, ship traffic	Level of emission, type of emitted GHG gases
	Loss of sea grass bed, coral, mangrove, existing vegetation	Area of loss coral and sea grass bed, number of trees cut down

CHAPTER VIII ALTERNATIVE

8.1. Alternative

The alternate types of alternatives to be considered for this project, alternatives to technology used in development, alternatives to location and status, alternative or no alternative development. The proposed development is the development of fuel supply in nature with the main objective of creating a faster, more reliable and safer fuel supply method for domestic consumers in Timor-Leste. This means that all alternatives considered should result in the ability to meet the above objectives.

An alternative technology will include direct supply from refinery (storage) to customer in Timor Leste (especially fuel station) or development of a less significant storage which means potentially less environmental impacts. These alternatives, however, are either not possible or will make the development less efficient (for smaller storage) which means that less fuel will be able to be stored.

CHAPTER IX
IMPACT ASSESSMENT AND MITIGATION MEASURES

9.1 Identification the Impact of the Project for each Phase

A. Pre- Construction

Site preparation for Jetty construction and fuel storage for this phase includes only Land Acquisition and Soil Compaction and will also affect the social around the project site, Potential environmental hypothetical impacts and the nature of the impact.

1. Methodology and approach

In the pre-construction stage, activities include land clearing, soil compaction, fencing and socialization. Methodology and study approaches that will be used are field surveys and interviews. For land clearing activities, the study approach used was a field survey. The clearing of 29,800 m² of land used as the Jetty and Fuel Storage Terminal will have an impact. For socialization, the study approach used was interviews with local residents from one house to another. After an agreement with chefe suco and chefe aldeia, a meeting was held with the community around the project.

2. Scope of the assessment

In the pre-construction stage the following activities are carried out:

- a. Land clearing
- b. Socialization to the surrounding community

3. Identification of impacts

a). Land clearing

- Decreased air quality due to increased dust so that it can cause air pollution around the project site. Dust is produced from soil compaction because the land at the project site is uneven so the truck goes in and out of the project site carrying the material.
- Impact on the sea and coastal ecology. Loss of life in coastal areas (flora and fauna) in the field of land acquisition (project location)
- Decreased health of people around the project site. Will have an impact on people who live close to the project site, as a result of dust generated at this pre-construction stage.

b). Community Socialization

- Community unrest at the project site. Public unrest occurs as a result of air pollution from mobilization materials and equipment which will affect the health of the local community. Public unrest can also occur when recruiting workers.

4. Determination of significance of those impacts

a). Land clearing

- Decreased air quality due to increased dust so that it can cause air pollution around the project site. Dust is produced from soil compaction because the land at the project site is uneven so the truck goes in and out of the project site carrying the material.
- Loss of life in coastal areas (flora and fauna)
Local impacts, direct and indirect, are short-term because they are not so significant and manageable
- Declining public health
Temporary moderate impact (short term), only trapped during preparation, insignificant, can be avoided and minimized

b). Community socialization

- Impact is only temporary, as long as mobilization activities are not significant it can be avoided and managed

5. Mitigation measures & incorporation of mitigation measures into project design

a). Land clearing

The steps applied to minimize impact (mitigation). The agreed location for the project area must be cleaned before installing the facility. But the loss of vegetation will be minimized in the area and some trees will be left to shade. At the time of land clearing, there is increased dust around the project. Mitigation measures include:

- Watering the project land and truck tires with water
- Cover for trucks carrying land / material in and out of the project.
- The presence of fencing around the location of the activity can reduce the spread of Dust and Flue Gas to the community around the location of the activity.

- Reducing the speed of the car to 30 km / hour
- At the time of construction, greening is carried out at the project site
- Opening vegetation during survey and demarcation activities will be minimized. The large trees to be removed will be clearly marked, only the trees marked in the boundary will be deleted.
- Trees that are not within the work area will not be cut except for engineering or justifiable safety reasons.
- Construction workers will be notified of general environmental protection and the need to avoid unnecessary felling of trees whenever possible

b) Community socialization

The steps applied to minimize the social impact (mitigation) of any compensation needed from property loss include:

- Work will be limited to approved limits.
- Discuss and negotiate first with the affected community.
- Conduct a survey before activities begin to identify all affected community members.
- Identification of natural resources, infrastructure and other basic services that will be lost.
- Establish harmonious social interaction with the surrounding population.

6. Determination of any residual impacts

The residual impact of pre-construction activities is to cause a pile of garbage. Garbage from the results of land clearing will be transported using trucks by cooperating with the garbage transporters so that the waste is brought to the Tibar landfill.

B. Construction

After completing the pre-construction phase, construction of the Jetty and fuel storage structure will begin. The types of impacts include the impact of site preparation (underground water quality, sea water, vibration, noise, and air quality) and the impact of building a pier structure to the sea (sea floor). Other impacts of equipment operations will also have an impact on health and safety in the workplace and solid and liquid waste.

1. Methodology and approach

During the construction phase includes the construction of the Jetty and the fuel storage structure begins. The methodology and study approach that will be used is field survey and data collection using tools. Retrieval of data using tools such as noise (anemometer), ground water (laboratory & portable analysis), sea water (laboratory analysis), and air quality (TSP carbon monoxide meter, physical analysis, and laboratory analysis).

2. Scope of the assessment

In the construction phase includes activities such as the following:

- a) Construction of installation of steel support and frame, and construction of beams and also other facility of Jetty and build of storage

3. Identification of impacts

- a) Construction of installation of steel support and frame, and construction of beams and also other facility of Jetty and build of storage
 - Sea water:
 - sea water pollution and coastal ecology
 - Changes in current patterns and wave movements that can lead to the beach so that it can cause erosion
 - Stagnant puddles can form behind the structure
 - Noise
 - Noise from material construction and heavy equipment used for beating will be affected for the Community but specifically for Workers
 - Vibration
 - will have an impact on the coastal area so as to allow coastal erosion (decrease) due to vibration generated by heavy equipment during the construction of the pier and its facilities
 - Mobilization of material installations from steel
 - increase air pollution, noise and also public health due to transportation that transports material to the project site
 - Health Safety at the Workplace
 - this activity will have an impact on workers, during the construction phase, especially the safety of workers at work

- Liquid and Solid Waste
 - Waste produced from workers every day, solid waste and liquid waste
 - Waste derived from construction of materials and heavy equipment

4. Determination of significance of those impacts

a) Construction of installation of steel support and frame, and construction of beams and also other facility of Jetty and build of storage

- Sea water

Localized around the jetty structure, it is only temporary for the ecology of sea and sea water, only temporarily during the jetty construction process, negative but manageable and insignificant, unavoidable

- Noise

Only around the construction of the project, the impact is negative, significant but can be managed and minimized.

- Vibration

occur around the manufacture and installation of iron, temporary during construction and not so significant around the manufacture and installation of iron, temporary during construction and not so significant

- Mobilization of material installation from steel

Will be affected for the community and labour but not significant, only at the project site (temporary impact) can be managed

- Safety of health at work

During the construction phase, only at the project site (temporary), not significant and manageable and minimizing negative impacts

- Liquid waste and solid waste

Localized, short term (temporary / during the construction phase), negative but not significant, can be managed

5. Mitigation measures & incorporation of mitigation measures into project design

The contractor is obliged to implement all reasonable precautions to protect the health and safety of workers and third parties. Mobilizing installation of materials from steel to the project site will bring interaction between local residents and construction workers. mitigation measures to be implemented are as follows:

Mitigation measures include:

- Planting green plants and ornamental plants
- Conduct biomediation processes, including releasing insects to neutralize marine pollution caused by oil spills
- The distribution of masks so as not to be exposed to dust
- Turn off the vehicle engine when loading and unloading
- Transport and dispose of domestic waste and construction waste out of the Project location within a maximum period of 24 hours by the Contractor. Cleaning / washing truck tires / vehicles that exit the project so as not to contaminate the road around the project.
- The contractor is to ensure that the actions of workers outside the workplace are controlled and the Suco code and rules of behaviour are observed at all times. Every time workers must respect village boundaries and landowners and recognize and follow village regulations and behavioural provisions.
- Suco protocol (village) which is discussed with workers as part of awareness of mobilization activities.
- Hire and train as many local workers as possible using the nearest social worker.
- Construction camps will be established in areas with adequate drainage to prevent logging in camps and establishment of mosquito breeding sites.
- Drinking water, clean water for bathing, hygienic sanitation facilities / toilets with adequate water supply, workers / resting canteens and first aid facilities will be provided.
- Solid and liquid waste will be managed in line with the provisions of the EMP waste management section.
- Provision of adequate safety equipment (hard helmets, face masks, eye glasses, earplugs, gloves, reflective jackets and shoes) for workers.
- Age Signal and security provided at the office and work yard including notification of the start of work, installing safety barriers as required by villagers, marking work areas and preventing unauthorized people (especially children) from entering the area.

6. Determination of any residual impacts

In the construction phase, there will be residual impacts such as garbage and building materials. For the waste from the contractor, it has been cooperating with the garbage transport truck and then taken to the landfill.

C. Operation

Operation and management of jetty structure, activities happening will involve ship traffic and regular maintenance of the structure, and about fuel storage are related especially to oil spill and fire hazard. Magnitude of impacts will depend on the scale of the spill and fire with impacts range from slight (small spill with no noticeable impacts on surrounding environment/communities).

1. Methodology and approach

Operations and structure management of the jetty, activities that occur will involve ship traffic and routine maintenance of structures, and regarding fuel storage related primarily to oil spills and fire hazards. The methodology and study approach that will be used is field survey and data collection using tools. Retrieval of data using tools such as noise (anemometer), ground water (laboratory & portable analysis) and sea water (laboratory analysis)

2. Scope of the assessment

- a) Ship mobilization (ship activities)
- b) Dock maintenance (including repairing the repaired dock)
- c) Tank storage terminal (fuel storage)

3. Identification of impacts

- a. Ship mobilization (ship activities)
 - Water quality:
 - Turbidity with vessel mobilization and waste water
 - Contamination, sea and coastal
 - Fuel spill
 - negligent workers and inaccurate as well as natural disasters
 - Liquid and solid waste
 - From workers, ship activities every day and other garbage

b. Maintenance (including repairing the repaired dock)

➤ Water quality:

- Contamination of marine ecology and coastal ecology
- Anti-corrosion re-application
- Repairing and replacing parts

➤ Hazardous Waste (Liquid):

- From the workshop that will be affected for the flora and fauna near the project site

c. Tank storage terminal (fuel storage)

➤ Fire and Explosion:

- It cannot be explained but we already have a Standard Operating Procedure (SOP) to manage and mitigate and monitor

➤ Noise and Vibration:

- As long as the tank receives fuel from the dock, there will be no vibration and noise, but if there is a sudden explosion.

4. Determination of significance of those impacts

a) Ship mobilization (ship activities)

➤ Water quality

Localized around the transportation road, not significant, only temporary (short-term) and not negative

➤ Fuel spill

Depending on the scale of the spill. Can be spread to a wider area, long term and significant even though it can be avoided

➤ Liquid and solid waste

Localized, can be significant to sensitive flora and fauna, can be avoided

b) Dock maintenance (including repairing the repaired dock)

➤ Water quality

Localized, can be significant to sensitive flora and fauna, temporary during repairs.

➤ Hazardous waste (liquid)

Localized but dependent on the quantity of waste (liquid), temporary, medium term, negative impact, can be managed

- c) Tank storage terminal (fuel storage)
 - Fire and explosion
 - Depending on the scale of the explosion, significant, negative, temporary, can be managed and reduced
 - Noise and vibration
 - Local, insignificant, indirect, short term, if the activity runs normal
 - Local, significant, negative, medium term, if not going well, but we reduce everything during the process and activities every day

5. Mitigation measures & incorporation of mitigation measures into project design mitigation measures to be implemented are as follows:

- Manufacturing equipment is maintained to good standards. Equipment will be inspected periodically to ensure they are maintained in the framework and will be recorded by the contractor as part of environmental monitoring.
- Conduct bioremediation processes, including releasing insects to neutralize marine pollution caused by oil spills
- management of activities that have the potential to have an impact on the comfort, health and safety of the community.
- debriefing skills / training to workers about occupational health and safety systems (k3)
- The release of toxic residues, hazardous materials and oil-contaminated water must be banned and all oily waste must be brought to the Tibar oil disposal facility as required by NDE.
- Provision of temporary sanitation facilities with waste disposed off at Tibar waste water treatment plant
- For solid waste, a TPS (temporary garbage disposal site) must be provided which will be brought / disposed of using a garbage truck for disposal to landfill (landfill)
- For liquid waste there must be management for liquid waste so that later it does not have a negative impact on the environment
- Availability of Fire water system (for buildings) and Foam system (for oil tanks)

6. Determination of any residual impacts

The residual impact of operational activities is solid and liquid waste. Waste will be disposed of by cooperating with the carrier of waste so that it is brought to the Tibar landfill.

D. Decommissioning

At the end of the project life cycle, the location of the jetty and all related facilities will be deleted. The land used will be restored as an existing condition before or to a better condition. The decommissioning plan will be provided to manage work activities during post closure from the project location.

1. Methodology and approach

At the end of the project life cycle, the location of the jetty and all related facilities will be deleted. The methodology and study approach to be used are field surveys and interviews with residents around the project site.

2. Scope of the assessment

- a) The land contract is completed, the operation stops
- b) Demolition of existing port and oil tank in the project location
- c) Cleaning, release of electricity

3. Identification of impacts

- a) The land contract is completed, the operation stops
There is anxiety about the surrounding community because job opportunities and job opportunities are gone.
- b) Demolition of ports and oil tanks
Noise occurs at the project site due to the demolition of ports and oil tanks
- c) Cleaning, release of electricity
Decreased air quality due to increased dust around the project site

4. Determination of significance of those impacts

- a) The land contract is completed, the operation stops impact is only temporary, insignificant can be managed

- b) Demolition of existing port and oil tank in the project location only around the construction of the project, the impact is negative, significant but can be managed and minimized.
- c) Cleaning and release of electricity
Impact only temporarily at the project location, not significant, can be managed and minimized

5. Mitigation measures & incorporation of mitigation measures into project design
The decommissioning plan will be provided to manage work activities during post closure from the project location. The mitigation measures are as follows:

- initiator to prepare a detailed decommissioning plan to remove and decontaminate all areas in one year before site closure.
- Supporters to safely cut off electricity supply.

6. Determination of any residual impact

The residual impact of decommissioning activities is Waste. The garbage is transported using a truck in collaboration with the garbage carrier so that the garbage is taken to the Tibar landfill.

CHAPTER X

SOCIAL AND ECONOMY IMPACT ASSESSMENT

10.1. Opening of Working and Endeavour Opportunities and Income Increase

During the pre-construction phase, construction and operation phase it is available for job opportunity that will increase community income. Some of qualified people in the community in Suco Mota-ulun or live near the project may work according to their professionalism during the project activities.

The impact of the opportunity to work and work due to this construction activity is small and the importance of significant impacts with the following considerations:

- Affected people are construction workers and communities around the site
- Impacts occur during the construction period with small intensity given the majority of workers from the Contractor.
- Another environmental component affected is an increase in community income.
- The impact is cumulative.
Construction worker needs take place during construction activities.
- Impact turns.
The opportunity to work and try and increase the income of the surrounding community can decrease after construction activities are completed.
- There is a procedure (SOP) in the recruitment of new workers that is applied by the Contractor to maximize the impact of opening employment opportunities for the surrounding community.

10.2. Social Interaction

The magnitude of the impact that arises is categorized as small and the importance of significant impacts with the following considerations:

- Humans affected are construction workers and communities around the location of the activity
- The extent of the impact spreading is around the activity site
- Another environmental component affected is the emergence of public unrest.
- The impact is cumulative.

The more construction workers, the greater the potential for social interaction with the surrounding community.

- Impact is reversed.
Social interaction between local residents and migrant workers did not occur after construction activities were completed and construction workers left the project.
- The existence of good communication between the Proponent and the Contractor and the surrounding community can prevent the occurrence of social conflict due to the interaction between migrant workers and the local community.

10.3. The occurrence of public unrest

The occurrence of negative social interaction between construction workers and surrounding communities who have different social backgrounds has the potential to cause public unrest.

The magnitude of the impact is assessed as small and the importance of the impact is not important with the following considerations:

- No human being is affected.
- The extent of the impact spread around the activity site.
- Impacts occur during construction activities with small impact intensity.
- Public unrest does not occur because the project area is not a dense residential area,
- No other environmental components are affected.
- The impact is not cumulative
- Impact turns.
- Public unrest due to negative social interaction between construction workers and the surrounding community may be reversed once construction activities are completed and construction workers leave the project. Good communication between the proponent and the contractor and the surrounding community can prevent social conflicts that disturb the surrounding communities.

CHAPTER XI
SUMMARY OF ENVIRONMENTAL MANAGEMENT PLAN

11.1. Environmental Management and Monitoring Plan Measures for Jetty Development

This development or development process will have an impact on some of the components already mentioned, as well as for management and monitoring measures identified. For a good development process (environmentally friendly) is to place outside development (on the ground) so as not to affect the life of the sea (especially coral reefs and other marine flora). if this does not permit, then the next step is to minimize the trace of the structure so that the resulting impact is also only on the development site, so it has automatically minimized the impact, and will be done management and monitoring continuously. the steps of management and monitoring can be seen in the table below:

Table 19. Proposed Management and Monitoring Measures for Jetty Development

Potential impact from activities	Proposed Management Measures	Proposed Monitoring Measures
Site Preparation (pre-construction) and Construction phase	When possible, locating the jetty outside known coral and sea grass bed	Monitoring undersea, before construction (pre-construction) already survey
	Minimize leak from equipment operation and careful storage of fuel and lubricant	Monitoring for leak during operation and also in the fuel storage
	Construction of coastal erosion protection needed	Monitoring for signs of coastal erosion – continue during operation maintenance
	Careful Management of solid and liquid waste from workers activities	Monitoring for dumping of waste into the water
	Activities conducted during the day (working days)	Monitoring noise and vibration level
Operation and Maintenance	Minimize oil spill, waste from tanker operation, regular skimming	Monitoring for spill and waste dumping
	Maintenance dredging should be conducted after assessment of potentially toxic sediment use of eco-friendly maintenance material	Monitoring for level of sedimentation
	Minimize leak from equipment operation and careful storage of fuel and lubricant	Monitoring for leak during operation and at storage
	Careful management of Waste (solid and liquid) from workers and activities everyday	Monitoring for dumping of waste into the water

11.2. Environmental Management and Monitoring Measures for Fuel Storage Development

For the development of fuel storage, key management and monitoring measures are measures related to protection of oil spills, fire hazard management and emergency preparedness and emergency response plans related to oil spills and fire protection and other factors related to occupational health.

Table 20. Proposed management and monitoring measures for Fuel Storage Terminal development

Potential Impacts	Proposed Management Measures	Proposed Management Measures
Fuel Storage Terminal Development		
Pre-construction phase (preparation of site)	Fencing of construction area, buffer zone – put a signboard	
	Minimize leak from equipment operation and careful storage of fuel and lubricant	Monitoring for leak during construction and around the fuel storage
	Careful Management of solid and liquid waste from construction and workers activities	Monitoring for dumping of waste into the water and surrounding area
	Activities conducted during the day	Monitoring for noisy and vibration level
	Workers order and safety, worker from local area (JSA)	Periodic testing of fire safe shut-off valve and fire hydrant system
	Procedure for environmental risk identification and containment, environmental cleaning procedure	Periodic fire safety drill
Operation and Maintenance	System for tank overfill prevention	Periodic checking for sign of oil leak in the surrounding environment
	Procedure for remote shutting of fire safety valves	Periodic testing of fire safe shut-off valve and fire hydrant system
	Procedure for environmental risk identification and containment , environmental cleaning procedure	Periodic fire safety drill
		Periodic checking for sign of oil leak in the surrounding environment
	Health and Safety at Work, Personal Equipment Protection as Standard Professional Procedure (SOP)	Monitoring and Reporting of accident

11.3. Management and Monitoring Measures for Climate Changes Impact

Management and Monitoring Measures for Climate Change impacts will focus on the measures that increase the adaptation and mitigation capacity of the project.

11.4. Management and Monitoring Measures for Socio-Economic Impact

Management and monitoring measures for socio-economic impacts will involve measures that ensure enough access for fishermen in the community and the enactment of a grievance redress mechanism at project management.

CHAPTER XII
PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

12.1 Public Consultation

Community involvement is part of the EIA document preparation process. Community involvement is done through announcements and public. The involvement of the community in the EIA process refers to the guidelines for community involvement in the process of environmental impact assessment and environmental permit (Decree Law No. 5/2011 Environmental License). The purpose of community involvement is:

1. The community gets information about plans for business and / or activities that have an important impact to the environment;
2. The community can submit suggestions, opinions and / or responses to plans for business and / or activities that have an important impact to the environment, which will later be used as input into the EMP process.

The planned location of the activity is in Motaulun Village, Post Administrative of Bazartete, Municipality of Liquica.

The important thing that will be conveyed to the public regarding the environmental impacts that will occur around the project site and its surroundings is;

- a. Air Pollution
- b. Condition and contamination to the groundwater and marine water
- c. Increasing of Waste (liquid and solid)
- d. Social Impact (public unrest and jealousy of social)
- e. Health and safety and public health
- f. Increasing Noisy
- g. Traffic jam
- h. Impact that caused by worker (human error)

Consultation about the planing of the construction of Jetty and Fuel Storage were carried out through the provision of information about the projects proposed to xefe suco, xefe aldeia and also the proposal of the municipality of Liquica, while direct consultation activities with the community were held on 10 August 2018. This activity was attended by

around 11 people consisted of ANPM residents / community leaders / youth around in the project site, including xefe aldeia Motaikun and xefe suco Motalun.

From public consultation carried out to the community, various inputs, suggestions and responses were obtained. The points of feedback from the community regarding the socialization of the planned activities are as follows:

1. The possibility of fire, explosion and oil spill due to the construction and operation of the jetty and fuel storage terminal Lai-Ara Nikmat Mujur, Lda, please note and good management by the initiator so as not to disturb the community around the activity.
1. Please note the impacts such as groundwater pollution or other pollution around the project site.
2. Community residents do not object to the construction of a Jetty and Fuel Storage in the area.
3. The recruitment of workers, please note that as far as possible from the surrounding community, to increase the income of the surrounding community.
5. Please pay attention to the health and safety of workers and also good quality control as well as the indication of signs so that it is easily understood by the community and workers.



Figure 32. Public Consultation in Motalun Villages

Table 21. Resume of the Public consultation

No	Name	Address/Institution	Input/suggestion
1.	Sr. Fransisco Correia	Xefe Aldeia	Project activities near the community, give best Solution for the activities not affected, give opportunities to community Around motaulun village, hope company can the right people To care and controlling about this project.
2.	Sr. Fransisco Soares	Xefe Suco Motaulun	Give employment opportunity to motaulun village and company should consider community of motaulun including xefe suco and xefe aldeia as the leader
3.	Sr. Laurindo Gomes	Community	Suggestion community have to be including in project activities (public unrest), give more opportunity to community to work in the company, suggestion give more training to worker because fuel is danger (easy burning)
4.	Sr. Gil	ANPM	If possible invited high superior (director/president company) to join in public consultation and if have another public consultation have to invited Relevant authority.
5.	Mr. Guilerme da Costa	Community/ Student	Company have to be responsibility if another day have impact to the community and also to the environment around the project site
6.	Sr. Fransisco Correia	Xefe Aldeia	Suggestion to company, if possible have to invited Ministry in Municipality Liquica (agriculture and fisheries, environment) and Ministry and National also all relevant that relation to the environment

Communities near the site indicated that they would fully support the project. Major environmental issues raised during the consultations were the dangers of explosions, oil impoverishment, groundwater contamination, occupational safety and the availability of employment opportunities for local residents of the project site. of all the results of this consultation will be used as input for the company to pay attention and to be accepted so that it can be accepted. The proponent will prioritize using the workers around Suco Motaulun to work in the construction and operation of the project. Public consultations will continue to be established to address environmental concerns within the project life span.

12.2. Information Disclosure

The disclosure of relevant environmental safeguard documents will be made in appropriate forms, ways and languages and in accessible locations to be understood by affected people and local stakeholders.

Approved EIS and EMP will be provided at the proponent's office and accessible to project stakeholders' including affected communities within the project area and surrounding project sites. EIS and EMP are considered to be public documents that information on impacts identified and mitigation and mitigation measures proposed to be implemented.

CHAPTER XIII

DIFFICULTIES ENCOUNTERED

13.1. Difficulties encountered

There are some difficulties were encountered by the consultants in collecting and assessing the information presented in the EIS. Another limitation in conducting environmental studies in Timor-Leste is the absence of baseline environmental data. However from the regulatory framework, the law, statutes and guidelines including that for environmental protection is now in place. Although there are some quality standards whose parameters are not written in the law. At the time of data collection there is a difficulty because the area is dry.

CHAPTER XIV

CONCLUSIONS AND RECOMMENDATIONS

14.1. Conclusions and recommendations

The negative environmental impacts in the pre-construction, construction and operation phases are predictable and manageable with appropriate mitigation measures as well as the monitoring and responsibility. The Project will have negative impacts that will nevertheless be carefully monitored and adequately mitigated. On the other hand, the accessibility to labour requirements for the villages around the site is the benefit of the Project.

There are some difficulties were encountered by the consultants in collecting and assessing the information presented in the EIS. Another limitation in conducting environmental studies in Timor-Leste is the absence of baseline environmental data. However from the regulatory framework, the law, statutes and guidelines including that for environmental protection is now in place. Although there are some quality standards whose parameters are not written in the law.

This Terms of Reference (ToR) the purpose of identifying potentially important issues related to potential environmental, public health and safety impacts as development commences, as well as guidelines for the preparation of environmental impact statement documents and environmental management plan).

So later in the process of compiling this environmental document, there will be three documents (ToR, EIS and EMP) in accordance with the established environmental permit. This document was prepared on the recommendation of DNCPIA on the categorization of Project Environment. That is, the project is set to fall under the Category A project as it is located near sensitive or valuable ecosystems such as settlements, forests, coral reefs. In accordance with the Decision Act no. 5/2011 on Environmental Licensing, a full-scale Environmental Impact Statement (EIS) document needs to be prepared.

CHAPTER XV

NON-TECHNICAL SUMMARY

15.1. Non-Technical Summary

Lai-Ara Nikmat Mujur, Lda. is a new company in Timor-Leste, it is the company that composed of Lai-Ara Shipping Agency Company, owned by Mr. Ramiro Dias Quintas and Nikmat Mujur Company from Malaysia, owned by Mr. Law See Nam and as the director for this company is Mr. Ramiro Dias Quintas. These two companies made a joint venture together as Lai-Ara Nikmat Mujur, Lda. Nowadays, the company was working hard for building Jetty and Oil storage in Dili-Liquiça Road, of Aldeia Mota Ikun, Suco Mota-Ulun, Post administrative of Bazartete, Municipality of Liquiça.

The company is under construction from 2014 until present of its place. As the requirement of environmental issue the company needs to have environmental impact assessment analysis from an environmental consultant that needed to study its area. As the new consultant, Engineers Professional Team (EPT) Consultancy is taking this project for Analysing Environmental Impact Analysis of the project place.

Lai-Ara Nikmat Mujur, Lda, has applied to MCIA department of DNCPIA to carry out an environment impact assessment (EIA) for the proposed Jetty and Fuel Terminal Storage, in accordance with requirements of EIA regulation of RDTL. Lai-Ara Nikmat Mujur, Lda. intends that the proposed project will incorporate all practical and cost effective measures for avoiding or minimizing negative environmental impacts, for capturing environmental benefits and for ensuring sound environmental management.

This Environmental Management Plan (EMP) report is presented by Lai-Ara Nikmat Mujur, Lda. in compliance with the environmental regulations pursuant to the requirements under Decree Law 05/2011 Environmental Licensing.

Lai-Ara Nikmat Mujur, Lda. Is the proponent of the jetty and fuel storage terminal that located in Motaikun, Suco Motaulun, Bazartete Post Administrative, Municipality of Liquica, the project area occupied 29.800 m² of land.

The Environmental Management Plan (EMP) is prepared by Lai-Ara Nikmat Mujur, Lda. as the project proponent with a technical support from “ KM” Consulting and EPT Consultant.

The project activities are undertaken in line with Government of Timor Leste legal requirements and adopt an international best practice for the environmental protection.

Lai-Ara Nikmat Mujur, Lda. will be responsible for monitoring of the operation activities and will carried out necessary mitigation measures in the EMP to address the impacts on the environment in close coordination with the relevant governmental authorities such as National Directorate for Pollution Control and Environmental Impact (NDPCEI) and National Authority for Petroleum and Mineral (ANPM).

Potential environmental impacts have been identified, proposed mitigation measures and monitoring responsibility during Pre-operation, Operation and Decommissioning phases are readily planned to be implemented.

Environmental assessment was conducted with the inclusion of the mitigation measures in the EMP in integration of environmental safeguard considerations into the Pre-operation, Operation and Decommissioning phases.

Environmental standards in the International Finance Corporation, Environmental, Health and Safety General Guidelines is recommended to be used as governing standard for the absence of the government environmental standard and parameters.

Monitoring requirements, monitoring parameters and environmental management cost are planned and been presented clearly in the Environmental Management and Monitoring Plan matrix. Project activities will be monitored daily, record and report. In addition, an Emergency Procedure has been planned to response the emergency situations such as incidents and accidents to prevent it from injuring the health and safety of the worker and community.

Capacity development and training will be set accordingly to cover all the environmental and health and safety aspects for workforce as well as the board management.

The methodologies used during the public consultation are door to door interviews, face-to-face and community engagement in public consultations held on 21 May 2017

The mechanisms are set (enclosed with the involvement of the local authority, governmental departments and project proponent) to address the complaints from the affected persons or communities.

Pre-operation, Operation and Decommissioning phases work plan and implementation schedule specifically focussed on the compliance with the legal requirements and the impact mitigation.

The total estimated project cost including implementation of the Environmental Management Plan is US\$ 13,186.070.69

The EMP will be reviewed to cover unexpected impacts or changes if there is an alteration on the project condition during the project operation.

Summary of all the information on the every chapters of this EMP are provided in the Non-Technical Summary accordingly.