



# Current Fisheries and Aquaculture Policies Relevant to the Regional Fisheries Livelihood Project (RFLP) in Timor-Leste

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## Policy Paper

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## ABBREVIATIONS

ADB	Asian Development Bank
AETFMCBP	Australia East Timor Fisheries Management Capacity Building Project
AusAID	Australian Agency for International Development
CBFM	Community-based Fisheries Management
CIDA	Canada International Development Agency
COREMAP	Coral Reef Rehabilitation and Management Project
CPUE	Catch per Unit Effort
CTI	Coral Triangle initiative
DCM	Division of Coastal Management, NDFA (proposed here)
DFO	District Fishery Officer
EEZ	Exclusive Economic Zone
FAD	Fish Aggregating Device, locally called “rumpon”
FMAC	Fisheries Management Advisory Committee
FMP	Fisheries Management Plan
GDP	Gross Domestic Product
GEF	Global Environment Facility
GoRTL	Government of the Republic of Timor-Leste
GTZ	German Agency for Technical Cooperation
hrs	Hours
ICEIDA	Iceland International Development Authority
IDRC	International Development Research Centre
IGO	Inter-Governmental Organization
IUCN	International Union for Conservation of Nature
JICA	Japanese International Cooperation Agency
km	Kilometre
MAF	Ministry of Agriculture and Fisheries
MAFF	Ministry of Agriculture, Forestry and Fisheries
MDG	Millennium Development Goals
MMA	Marine Management Area
MED	Ministry of Environment and Development
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
m.t.	Metric tonne equal to 1,000 kilograms (kgs)
NCC	National Consultative Council
NCSNP	Nino Conis Santana National Park
NDCF	National Directorate of Coffee and Forests
NDFA	National Directorate of Fisheries and Aquaculture
NGO	Non-government Organization
n.m.	Nautical mile

NP	National Park
PANPD	Protected Areas & National Park Division of NDCF, MAFF
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
SEAFDEC	Southeast Asian Fisheries Development Center
TL	Timor-Leste (English form of the Portuguese name Timor-Leste)
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
US\$	United States Dollar, currency unit of Timor-Leste
WWF	World Wide Fund for Nature

## SUMMARY

The country of Timor-Leste and particularly its small island districts are highly dependent upon their marine resources for economic and social development. Fisheries is an important livelihood source and provides sustenance for the people of the country, contributing to food security, poverty alleviation, employment, foreign exchange earnings, development and the stability of rural and coastal communities, while also providing culture, recreation and tourism.

In the National First Development Plan of Timor-Leste 2002, the Agriculture sector on which 85% of the population depend, was third priority after the Health, and Education sectors. One agriculture sub-sector with potential is the fisheries (Anon, 2007).

Timor-Leste has great fishing potential, but the sector is under-developed. The main fishing grounds, which are along the northern and southern coasts, provide a diversified range of fish and shellfish, most of which is for internal consumption. Despite an abundance of aquatic products little reaches Timor-Leste's interior (Anon, 2007).

Timor-Leste has 706 km of coastline and an marine exclusive economic zone (EEZ), over which it has exclusive fishing rights, of approximately 75,000 km<sup>2</sup>. Though this fishing area is small by international standards, it has the potential to provide valuable high grade animal protein to feed Timor-Leste's people and to provide employment, significant income earning opportunities and foreign exchange from fish exports. The value of Timor-Leste's aquatic marine resources and the resulting benefits to our people, both in the short-term and long-term, will depend on how well these resources are managed (Ministry of Agriculture and Fisheries State Secretariat of Fisheries, 2007).

Inland, aquaculture of tilapia and carp played a significant role in the rural economy prior to independence from Indonesia. When the Indonesians departed in 1999, hatcheries and ponds were destroyed or damaged, and broodstock were consumed. The National Directorate of Fisheries and Aquaculture (NDFA) is actively working to restore the rural aquaculture sector, which will make an important contribution to improving rural food security.

This policy is based on a review of progress made over the last several years and updates our previous strategic plan "*Fish for the Future: a strategic plan for the fisheries of East Timor*" released in May 2001. This new document like the Fisheries Law, the Government Decree Law and other documents also emphasises issues that need to be addressed to ensure there will be sufficient fish for future generations.

## INTRODUCTION

Previously East Timor, now known as Timor-Leste (Tetum: Timor Lorosae), is officially called the Democratic Republic of Timor-Leste. Timor-Leste comprises the eastern half of the island of Timor, the nearby islands of Atauro and Jaco, and Oecusse, an exclave on the northwestern side of the island, within Indonesian West Timor. It has a land area of 15,410 km<sup>2</sup> and is located 8° 50' South latitude and 125° 55' East longitude, about 640 km northwest of Darwin, Australia (Wikipedia, 2009).

East Timor was colonized by Portugal in the 16th century, and was known as Portuguese Timor until Portugal's decolonization of the country. In late 1975, East Timor declared independence, but later the same year was invaded and occupied by Indonesia, which declared East Timor as Indonesia's 27<sup>th</sup> province the following year. In 1999, following the United Nations-sponsored act of self-determination, Indonesia relinquished control of the territory and East Timor became the first new sovereign state of the 21st century on May 20, 2002. East Timor is predominantly Roman Catholic (Wikipedia, 2009).

The country of Timor-Leste and particularly its small island districts are highly dependent upon their marine resources for economic and social development. Fisheries is an important livelihood source and provides sustenance for the people of the country, contributing to food security, poverty alleviation, employment, foreign exchange earnings, development and the stability of rural and coastal communities, while also providing culture, recreation and tourism (Anon, 2002).

Timor-Leste has great fishing potential, but the sector is underdeveloped. The main fishing grounds, which are along the northern and southern coasts, provide a diversified range of fish and shellfish, most of which is consumed domestically. Despite an abundance of marine aquatic products little reaches the interior of Timor-Leste (Anon, 2007).

Timor-Leste has 706 km of coastline and a marine exclusive economic zone (EEZ), over which it has exclusive fishing rights, of approximately 75,000 km<sup>2</sup>. Though this fishing area is small by international standards, it has the potential to provide valuable high grade animal protein to feed Timor-Leste's people and to provide employment, significant income earning opportunities and foreign exchange from fish exports. The value of Timor-Leste's aquatic marine resources and the resulting benefits to our people, both in the short-term and long-term, will depend on how well these resources are managed (MAF and Secretary State of Fisheries, 2007).

In the First National Development Plan of Timor-Leste 2002, agriculture is prioritized third after the Health and Education sectors. The agriculture sector is important to the country, as 85% of the population depend upon it. Among the agriculture sub-sectors the fisheries and aquaculture sub-sectors have great potential for further development, and especially capture fisheries (Anon, 2002).

Inland, aquaculture of tilapia and carp played a significant role in the rural economy prior to independence from Indonesia. When the Indonesians departed in 1999, hatcheries and ponds were destroyed or damaged, and broodstock were consumed. The National Directorate of

Fisheries and Aquaculture (NDFA) is actively working to restore the rural aquaculture sector, which will make an important contribution to improving rural food security.

International trade of fish and fishery products has grown rapidly over the last two decades. Small-scale fisheries make significant contributions to national economies through the generation of foreign exchange derived from exports, but the contribution it makes varies considerably between countries. Viet Nam, exported US\$ 2.4 billion of aquatic products in 2008 accounting for 8.4 % of national foreign exchange earnings. The export of aquatic products however is only just beginning from Timor-Leste, though there is considerable potential to export high value, aquatic products if sustained quantities of acceptable quality can be produced (FAO, 2008).

While there is often very little reliable information about the real contribution of small-scale fisheries to livelihoods and economies in developing countries, and although many small scale fishing communities are poor and vulnerable, it is now widely acknowledged that small-scale fisheries can generate significant profits, provide resilience against shocks and crises, and make meaningful contributions to poverty alleviation and food security. Furthermore, support to communities has been identified as a key activity in helping the achievement of national poverty reduction, and economic and gender targets outlined in Poverty Reduction Strategies and also supports the achievement of national Millennium Development Goals (MDGs).

Across South and Southeast Asia, the livelihoods *of small-scale inshore coastal fishers* are among the most insecure and vulnerable. They are dependent on an increasingly depleted and degraded resource, due to over-capacity, resource access conflicts and inadequate resource management. These communities make important, but often poorly recognized contributions to food security and the livelihoods of many millions of people, and to national and regional economies (FAO, 2008).

Renewed interest in and support to fisheries management and sustainable livelihood enhancement is urgently needed in order to forestall severe poverty and to halt ecosystem degradation to the detriment of fishers, fisher communities and entire coastal populations and economies.

At the village level, the fisheries sector offers a significant opportunity to contribute to sustainable livelihoods by providing cash income, improved nutrition and food security. There are only limited reef areas and the seas have finite aquatic resources, therefore catch value can only be increased by improving product handling, storage, processing and value addition, distribution and marketing (MAF and Secretary State of Fisheries, 2007).

The **outcome** of the RFLP will be the *Strengthened capacity among participating small-scale fishing communities and their supporting institutions towards improved livelihoods and sustainable fisheries resources management.*

The current situation which is relevant to the Regional Fisheries Livelihood Program (RFLP) includes:



- The livelihoods of small-scale fishers and their families are extremely vulnerable because their occupation is high risk and they live in exposed coastal areas which are often impacted by extreme weather events;
- Income is lost from fish and fishery products because of poor handling, preservation and processing practices and inequitable returns from marketing systems;
- As aquatic resources decline because of unsustainable management, alternative incomes sources and livelihoods are needed to supplement fishing; and,
- Small-scale fishers have poor access to microfinance services needed to diversify income sources, to adapt fishing equipment to new management regulations, and to reduce their vulnerability.

Because of the complexity of issues, this report will focus on current fisheries and aquaculture policies relevant to the achievement of RFLP outputs, and planning issues.

## **1. CURRENT FISHERIES AND AQUACULTURE POLICIES IN TIMOR-LESTE**

### **1.1. The Role of the National Directorate of Fisheries and Aquaculture**

In the longer term, the NDFA should move toward some level of self-sufficiency, developing mechanisms by which at least part of the costs of licensing, monitoring, management are recovered from licensed commercial operators.

The NDFA has the remit to manage coastal fisheries on an integrated basis with coastal communities committed to managing and monitoring their resource, as outlined below. The involvement of the NDFA in collaborative co-management schemes for coastal fisheries is on-going in terms of providing guidance and support to village level endeavours to conserve and manage the resources. NDFA staff will encourage and facilitate new community based fisheries management initiatives. At the village level, the NDFA encourages NGO's to provide assistance as facilitators and information providers.

*What is a vision and mission statement?*

*A vision statement describes what a company or institution wants to achieve. A mission statement describes the core activities of a company or institution when working towards its vision.*

NDFA aims to prevent illegal, unreported, and unregulated (IUU) fishing activities whilst working with all stakeholders. For example, the Navy and Police assist with monitoring of fishing activity, while Customs are working with MAFF to prevent the export of prohibited marine products, or those from unlicensed operators.

NDFA will minimise its involvement in activities that can be best be done by the private sector. The NDFA may provide marketing infrastructure, but such structures will be leased out and private sector involvement will be sought to free up scarce government resources as soon as possible.

Private sector uptake of commercial activities will only be sustainable if these enterprises are economically viable. The process of handover to the private sector should be through a transparent process (e.g. via open tenders) that will require an independent assessment of the capability of bidders.

***OUR VISION.....***

***..... is achieving the optimal utilisation of our aquatic resources through their responsible development and management and the provision of the highest quality of public service to Timor-Leste companies and citizens to enable them to achieve this goal.***

The role of NDFA in promoting and supporting sustainable fishing practices, improved fish quality, effective marketing, and small fishing enterprises. This will be necessary for a period of at least 10 years.

Initially, NDFA will focus on initiatives, initiated with external assistance, to develop and implement management plans for the key fisheries methods outlined below:

- i. Inshore reef (hook and line, gill net, fish trap, spear gun, hand collection), coastal and shelf fisheries for demersal fish (hook and line, fish trap), small pelagic species (small scale and seine nets around 'FADS', hook and line, gill nets).
- ii. The pelagic fishery for tunas including yellow fin and big-eye (trolling, vertical long lining).
- iii. Reef species of the Sahul Bank in the southern region (hook and line, long line, fish traps).
- iv. Aquaculture, including hatchery and pond production.

The coastal reef-associated fisheries resources of Timor-Leste are multi-species and complex. Experience has shown that a community based, adaptive approach to their management is superior. This can be based on simple estimates of target yields (e.g. tonnes) or capacity (e.g. boat numbers), then monitoring the fishery to see if these targets are too low or too high.

The technical difficulties associated with estimating sustainable yields for individual species within tropical coastal fisheries are substantial. Even if this were possible, enforcement of such limits would present an insurmountable problem given the financial and human resources available (MAF and Secretary State of Fisheries, 2007).

### ***OUR MISSION .....***

***..... as staff of NDFA is delivery to Timor-Leste' companies and citizens' the best available information for the responsible development and management of the fisheries and aquaculture industries.***

Management plans for inshore resources refer to the creation of legal and administrative frameworks for a collaborative co-management approach. This depends on developing partnerships between coastal communities and the NDFA.

It is essential that those who depend on the resource understand and are fully involved in the process of monitoring the fishery. Where possible all parties need to take appropriate conservation actions when threats (e.g. over-fishing or destruction of habitat) occur.

The responsibility for the further development and implementation of the fisheries policies and strategies described in this document on the current of fisheries and aquaculture policies of Timor-Leste relevant to the RFLP, rests firmly with the NDFA. Other government agencies and the private sector however have their own roles to play. Regular communication with these

agencies will be essential to ensure the smooth implementation of fisheries policy and to foster a common approach.

## **1.2. Interaction with stakeholders, including other government agencies**

The sustainable management of fisheries is dependent on an integrated approach. Whilst the NDFA is the key agency for managing living marine resources, taking an '*integrated approach*' means working closely with the many other parties, both government and non-government and the industry itself, including coastal communities. These agencies have roles and responsibilities in the management process requiring their cooperation and in some cases, the effective coordination of these agencies.

Close coordination is required between the Department of the Environment and other agencies within MAFF to promote integrated coastal zone management at a policy level and in developing plans in selected areas.

Decisions on coastal zone management, including site selection for Marine Protected Areas (MPAs), cannot be taken in isolation by any one agency. NDFA will facilitate the development of a process where it plays a significant role in decision making, along with relevant community groups and other stakeholders.

Ideally, stakeholders involved in fisheries in Timor-Leste should be provided with a means of input to fisheries policy and implementation, within a consultative framework. One method NDFA will explore as the industry develops is to form a Fisheries Management Advisory Committee. This would comprise the entities shown in Figure 1, and later any other stakeholders deemed appropriate as fisheries development proceeds.

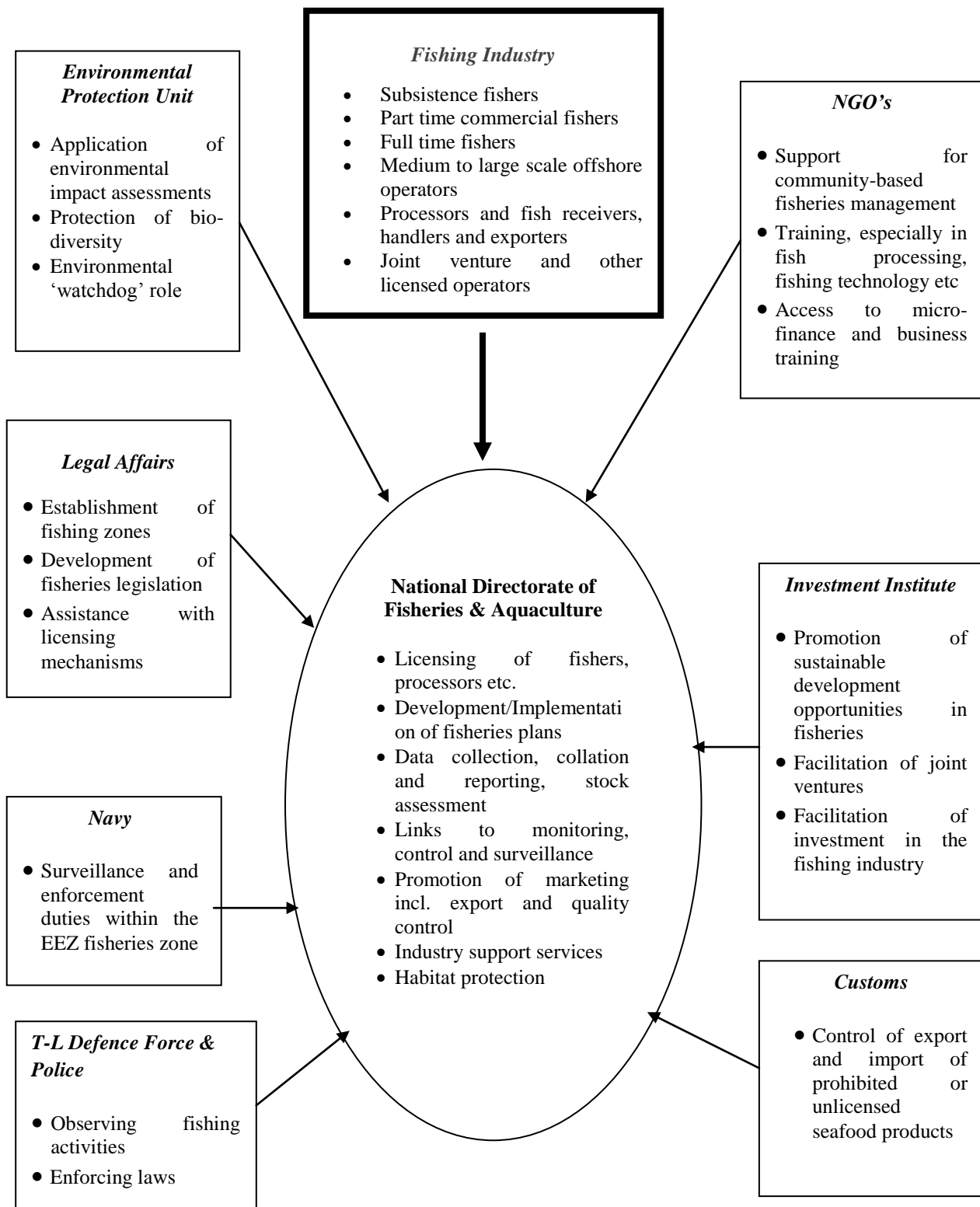


Figure 1. Stakeholders involved with Fisheries in Timor-Leste  
Sources: MAF and Secretary State of Fisheries, 2007.

### **1.3 Fisheries Policies**

Ministry of Agriculture and Fisheries of the Democratic Republic of Timor-Leste has made the Policy and Strategy for the Fisheries Development and places emphasis on responsible development and management of the fisheries and aquaculture resources of Timor-Leste. This is in line with the National Development Plan.

A total for five major policy objectives covering five areas have been identified, which are detailed below.

- a. Optimal use and management of our living aquatic resources, resulting in increased sustainable production, consumption and export of fishery products providing long-term social and economic benefit.
- b. Conservation and, where appropriate, rehabilitation of aquatic habitat, helping to sustain the productivity of fishery resources.
- c. A sustainable, efficient and profitable fishing industry meeting the needs of the population for good availability of affordable, quality fish and supplying export markets mainly from offshore resources.
- d. Development of a viable aquaculture industry meeting the needs of the population for good availability of affordable, quality fish and supplying export markets.
- e. Development of fisheries institutions and associations staffed by capable individuals serving the needs of the fishing and aquaculture industries.

National policies and plans for small-scale fisheries and aquaculture in the region generally focus on increasing production, resource management, increasing export and value addition, food security and on poverty and alternative/supplementary livelihoods.

### **1.4. Coastal Resources Fisheries**

Timor-Leste is geographically a small tropical island country and its waters are rich in typical tropical aquatic species including fish like a. tunas, (skipjack tuna, bluefin tuna, etc.); b. large pelagics, (marlin, sharks, etc.); c. small pelagic fish, (flying fish, sardines etc.); d. coral reef fish, (surgeonfish, parrotfish, rock codfish, groupers etc.); e. demersal species, (shrimp, catfish etc.); and, f. crustacea, and molluscs, etc., (Amaral, L.A. 2009).

Fishing by coastal communities is undertaken for both sale and for household consumption. The total volume and value of the catch from the coastal zone is unknown. However, based on the results of fisher household surveys, it was estimated by the NDFA that in 2004 the coastal community catch accounted for almost 80% of the total catch of marine fish of about 5,000 metric tons. Of the total catch an estimated 1,000 metric tons was taken by illegal, unreported and unregulated (IUU) fishing vessels operating in the Exclusive Economic Zone (EEZ) waters of Timor-Leste, particularly off the south coast and in the area of the Sahul Banks. At that time, there were no licensed foreign or domestic fishing vessels operating offshore in Timor-Leste.

The total domestically caught marine catch was estimated by NDFA at 4,000 metric tons worth US\$ 5.7 million, which was equivalent to 1.4% of GDP in 2004 (MAF and Secretary State of Fisheries, 2007).

*Table 1. Product Export of Fisheries 2005 – 2009*

<b><i>Product Export of Fisheries (year/Kg)</i></b>					
2005	2006	2007	2008	2009	Total
941	492.546	323.379	55.416	46.410	<b>918.692</b>

*Sources: NDFA/MAF in Figure*

### **1.5. Timor-Leste Aquaculture Policy**

The Government of Timor-Leste is implementing a policy to promote economic, environmentally sound aquaculture production systems in order to meet to the anticipated expanded future needs for aquatic products.

This will require consolidation and progress in different areas of this developing economic sector including research and development of hatchery, nursery and grow-out technology, feed and disease treatment development, while at the same time protecting the environment, and natural resources. The Government of Timor-Leste and NDFA are activity facilitating the involvement of private sector small- and medium-enterprise aqua-culturists to achieve this goal.

Many other countries, and particularly Asian countries, have achieved economic development in the fisheries and aquaculture sector at the expense of damage to their natural aquatic resources, and the natural environment and resulting social conflicts. Learning from the mistakes of other countries, Timor-Leste will take a precautionary approach to develop its capture fishery and aquaculture sectors in a sustainable economic, and environmental manner, and will implement policies to promote equitable share of the benefits from the sector.

Timor-Leste aquaculture highlights include:

- Productivity has increased at over 10 percent annually over the last decade, which is faster than any other agricultural activity. This has been largely due to the application of improved technical capacity and management skills;
- Increasing levels of aquaculture production have raised the general availability of aquatic products to the population, while raising national export earnings moderately;
- Increased local availability of aquatic products has improved the nutritional well-being of the people and improved their income; and,

- Practicing socially and environmentally responsible aquaculture has been shown to make good business sense.

Areas of concern for aquaculture in Timor-Leste:

- More crucially, higher production has not been shown to significantly reduce rural poverty. As a result there are underlying and unresolved conflicts over resource use. If these result in conflict it strains the management and regulatory capacities to deal with them.
- Promoting cohesiveness and harmony in the face of diverse interests, with the poor and weak often getting ignored, is exposing weaknesses in policy-making and governance.
- Information collection, dissemination and exchange capabilities at the national level have not kept pace with the IT-led modern demands of efficient policy-making and management for sustainable development.

Aquaculture presents a promising opportunity for the national economic development of Timor-Leste, and if done appropriately could be an important complementary and synergistic economic role with capture fishing. The present national decrees and laws also include ground-rules on the development of the aquaculture sector in Timor-Leste.

Information and Communication Technology is intended to complement the traditional means of promoting coordination, delivering information and education and fostering interaction among people taking part in networking activities. It is not a substitute, but it is now the best known option to cost-effectively conduct people-oriented and project-expertise oriented networking activities.

In addition the Government of Timor-Leste Information Programme will facilitate improved national capacity for accessing and assessing information resources through enhancing the skills and knowledge of staff and information technologists working in aquaculture and resources.

*Table 2. Export of Seaweed 2007 – 2009.*

Year	<i>Details of Result and revenue/farmer</i>		
	Product Export ( <b>Kg</b> )	Product sold ( <b>US\$</b> )	farmer
2007	15.000	12.750	845
2008	65.000	48.750	1.200
2009	28.883	19,129.15	377
<b>TOTAL</b>	<b>108.883</b>	<b>80,629.15</b>	<b>-</b>

*Sources: NDFA/MAF in figure*



### **1.6. Government Policy**

The NDFA of the Government of Timor-Leste's goal is the sustainable manage and development of the nation's fisheries resources to ensure and increase the supply and consumption of fish and fishery products and the provision of socio-economic benefits.

Government policies call for full for the full exploration of the country's fisheries resources with the intention of being self-sufficient in aquatic product supply, while at the same time also improving handling and distribution, strengthening small-scale fisheries and increasing foreign exchange earnings from exports.

## **2. ASIAN DEVELOPMENT BANK FUNDED TFET (TRUST FUND FOR EAST TIMOR)**

Between 2000 until October 2006 the Asian Development Bank (ADB) administered a multi-donor Trust Fund for East Timor (TFET) which has focused on six infrastructure and microfinance projects. These included:

### **2.1. Baseline habitat study**

Since 2000, baseline data on numbers of fishers, canoes, fishing gear, the proportion of time spent fishing etc. has been and continues to be recorded on an occasional basis throughout much of Timor-Leste. It is presented here to give an indication of the approximate scale or order of magnitude of the domestic fishery at present. The figures should not be quoted. The present mission gave priority to other areas and did not have time to examine the way in which this data was collected or the level of skills and training of those participating in collecting and collating the data 2004 (MAF-SSF, 2007).

Fish is sold at local markets not by weight but mostly either as piles or “strings” of small fish, as individual larger fish or as sections/steaks/slices of very large fish so there is usually little need for fish vendors to think in terms of a price per kg. However a number of proprietors of hotels and restaurants, with whom the ADB mission consulted, considered that US\$2.50/kg was a fair approximate ‘going rate’ for fish bought at local markets in 2005.

Whilst the mission of International Consultant and National Consultant in 2005 did not undertake a formal survey, it did occasionally check prices of fish on sale at Dili, Timor-Leste informal markets using a locally purchased pan scale to measure weights. Mission observations indicate that fish vendors do not set fixed prices, but make every attempt to maximize returns by requesting prices as high as they suspect their potential buyers are able to afford. The price eventually paid for any fish purchased often depends on the level and success of bargaining conducted. The present purchases of fish at Dili fish markets (unpublished data) found the “average” price to be around the same price of US\$2.50 /kg quoted by the hotel and restaurant owners. However higher value fish, e.g. grouper, was being sold at up to three times that price.

### **2.2. Rehabilitation Hera, fishing port facilities**

The use of Hera and Com ports for commercial fish landings has been adopted or is being considered by commercial operators. Local fishers from areas other than Hera continue to land directly near their homes or into the Dili or other town markets.

The local market demand for fish and quantities landed are still unknown. Attempts at estimating these quantities without closer study are likely to be inaccurate. Fishers are opposed to landing their catches at Hera Port because of the additional costs, inconvenience and travel time this imposes on them.

The present marketing arrangements for fish in Dili present a significant constraint to the quantity of Timor-Leste fish sold and consumed locally. Before designing and setting up new fish markets, great care should be taken to ensure adequate consultation with an appropriate range of stakeholders. Any new market should be of an appropriate size and open design and, most importantly, in a suitable location. Marketing costs would be minimized if fish markets were adjacent to suitable landing and/or vehicle delivery points. The provision of suitable landing facilities designed for the size of (small) craft supplying Dili over the foreseeable future would assist the sector.

No data are available on the operational costs for the various fishing methods, but these are relatively high for the sizes of vessels used and are poor in comparison to operation costs from populated areas of neighboring Indonesia. Fuel costs in Timor-Leste are substantially higher than in Indonesia.

In a cash constrained economy, like that that exists in Timor-Leste, the majority of people do not have cash available to buy much protein of any kind. If nutritional food security is to be achieved, then some aquatic products should be competitively priced with other animal protein sources like cheaper imported chicken.

Because of the limited purchasing power of the majority of people, the Timor-Leste government is promoting the availability of affordable fish for lower income households, by promoting the harvesting and effective marketing of small pelagic resources, like rapid growing and maturing small mackerels, scads and flying fish (Tetun: *Bainar mutin*, *Koku mutin*, *Bainar salar* and *Ikan manu*).

### **2.3. Fisheries management capacity building**

Timor-Leste needs significant improvement in its infrastructure, technology, training, capital and access to markets. Priority areas for capacity building include planning and plan implementation, as is the sequencing of introducing activities designed to address the above constraints. The government, the private sector and civil society, all need to acquire new knowledge and develop new skills to administer a modern nation state, and to build a more diverse, developed economy generally in agriculture and especially in aquaculture and fisheries.

During early planning processes following independence, it was agreed that criteria for prioritization should focus on capacity building for the provision of essential, sustainable, and affordable service delivery. The most crucial areas for capacity building were agreed at the earliest stage of plan implementation. These programs address both short-term implementation needs, and capacity requirements for the medium term at the central, district and local levels. They recognize a crucial point: that capacity building will have to be based extensively on government partnerships with civil society organizations, NGOs and the private sector. Additionally, capacity building must take into account the roles performed by existing traditional institutions, informal networks, and mutual-help groups, particularly at the village level. These

were critical in maintaining communities during the struggle for freedom, and will continue to play an important part in capacity building at the local level.

Capacity building of the government level is crucial for Timor-Leste. During the Indonesian period, few indigenous staff were developed into senior and middle management, with supervisory level skills, and in-office management and administration skills. Moreover many of the staff trained in these areas were East Timorese and they left the country during 1999, and did not return.

#### **2.4. Bilateral & multilateral support to the community activities in coastal and upland areas.**

Bilateral and multilateral support for community activities in coastal and upland areas includes both international and regional cooperation projects including:

- FAO Central (Rome) & FAO Regional (Bangkok)
- SEAFDEC (Southeast Asia Fisheries Development Center)
- ATSEF (Arafura Timor Sea Expert Forum)
- PEMSEA (Partnership of the Environment Management of the Seas East Asia)
- CTI (Coral Reef Triangle Initiative).

### **3. LAWS AND REGULATIONS**

The Government of Republic Democratic of Timor-Leste has various laws and regulations which are likely to impact on the achievement of RFLP outputs including:

#### **3.1. Fisheries Decree Law No 6/2004 (21/04/04).**

This law is the general basis for the legal management and regulation of fisheries and aquaculture in Timor-Leste. Fishing is an economic activity of great importance because of the revenue generated, nutritional value and the employment it gives, particularly for local fishing communities.

The present law is designed to regulate fishing activities, so as to contribute to the attainment of the economic and social development policy objectives of the country, while simultaneously ensuring the protection and conservation of species, as well as their continuous and sustainable exploitation.

Because aquaculture can provide opportunities for national economic development, which can be complementary to and synergistic with capture fisheries the present law also includes ground-rules on aquaculture activities in Timor-Leste.

#### **3.2. Government Decree No 5/2004 (28/07/04), General Fisheries Regulations.**

The general fisheries regulations expand on the provisions of Decree N° 6/2004 dated 21 April 2004 for the management of Fisheries and Aquaculture in Timor-Leste, establishing technical rules, the procedures and the time-scale that will be applied in practice for Decree N° 6.

This Decree provides enabling conditions for the regulation, in a predictable and appropriate manner of Timor-Leste's fishery resources by the government: by issuing fishing licenses; collecting taxes for the Treasury; increasing the nutritional quality of aquatic products; promoting self-employment and improving conditions for the development of the sector and the national fishing industry generally.

#### **3.3. Others key Ministerial Diplomas.**

The Government of Timor-Leste has issued various Ministerial Diplomas including:

- Definition of fishing zones. Ministerial Diploma No 01/03/GM/I/2005
- Percentages of allowed by-catch. Ministerial Diploma No 03/05/GM/I/2005
- A list of protected aquatic species. Ministerial Diploma No 04/115/GM/IV/2005

- Minimum sizes of fish species that can be caught. Ministerial Diploma No 05/116/GM/IV/2005
- Penalties for fisheries infringements. Ministerial Diploma No 06/42/GM/II/2005.

The NDFA of the government of Timor-Leste is developing new legislation and management measures aimed at ensuring that fishing capacity is kept within limits in order to avoid over-fishing. Over-fishing reduces catch per unit effort and increases operational costs. NDFA is taking active steps to ensure that all stakeholders are aware of the new legislation and of their rights, responsibilities and restrictions under fisheries regulations.

### **3.4. Fisheries Quarantine Regulation (Draft March, 2007).**

The above fisheries quarantine regulation was drafted in March, 2007 but as yet has not been made law, primarily because Timor-Leste lacks sufficient trained law makers, decision makers and policy makers.

### **3.5. Regulation number 2000/17, on the prohibition of logging operations and the export of wood from East Timor.**

Pursuant to the authority given to him under the United Nations Security Council Resolution 1272 (1999) of 25 October 1999, taking into account United Nations Transitional Administration in East Timor (UNTAET) Regulation 1999/1 of 27 November 1999 on the Authority of the Transitional Administration in East Timor.

All laws which have effect in East Timor by virtue of Section 1 of (UNTAET) Regulation 1999/1 and which may provide greater protection of the natural environment of East Timor than the protections contained in this or any other Regulation shall remain in effect;

#### **Section 2, Prohibitions**

Subject to Section 3 of the present Regulation:

- (a) the cutting, removal and logging of wood (hereinafter: logging operations) from land in East Timor;
- (b) the export from East Timor of wood in any form, including logs, planks, plywood or furniture, and
- (c) the burning or any other destruction of forests, is prohibited.

### **3.6. Fish for Sustainability Our Strategic Plan for Fisheries, 2006–2016 (Review Fish for the Future 2001).**

Without sustainability there will be no long-term development. The strategic plan, “*Fish for Sustainability*” therefore outlines the policy direction Timor-Leste will take in the development of its fisheries for both present and future generations.

In addition to pursuing sustainable development, the principles adopted in developing this plan include: informed decision making, community participation, capacity building, gender equality, private sector based development, efficient provision of government services, some cost recovery elements, and administration transparency.

The strategic plan covers five key objectives, selected to reflect the five main work areas relating to the task of establishing and operating sustainable fisheries. These are maintaining the living resources themselves at optimal levels, ensuring the health of their supporting habitats, facilitating industry development, ensuring effective resource management and the building and maintenance of a cost-effective administration.

## **4. CONSERVATION**

### **4.1. Two MPAs (Batugade and Atauro).**

Based on United Nations Transitional Administration in East Timor (UNTAET) Regulation No.1999/1 of 27 November 1999 on the Authority of the Transitional Administration in East Timor (hereinafter: UNTAET Regulation No. 1999/1) was enacted to protect designated areas, endangered species, coral reefs, wetlands, mangrove areas, historic, cultural and artistic sites, conservation of bio-diversity and protection of the biological resources of East Timor.

Timor-Leste has two Marine Protected Areas (MPA) namely Atauro Island and Batugade Village. Figure 2 shows the location of the two MPAs. The Atauro Island MPA is implemented by the NGO Roman Luan, while the implementation of the Batugade MPA is still under negotiation with Indonesia, because of boundary disputes. When the Batugade Village boundaries are agreed the day-to-day responsibility for managing the MPA will rest with local communities in the area.

Giving local communities in Timor-Leste the responsibility for managing and controlling a sustainable fishery and conserving bio-diversity is more likely to be successful than top-down government management. However, making the schemes self-financing is challenging. Donor agencies and international NGO's usually fund MPA area establishment, at least initially.

It is important to plan for long-term financing to ensure continuing adequate management and enforcement. For Timor-Leste, building strong local support for the MPA's will reduce the level of formal government surveillance and enforcement required.



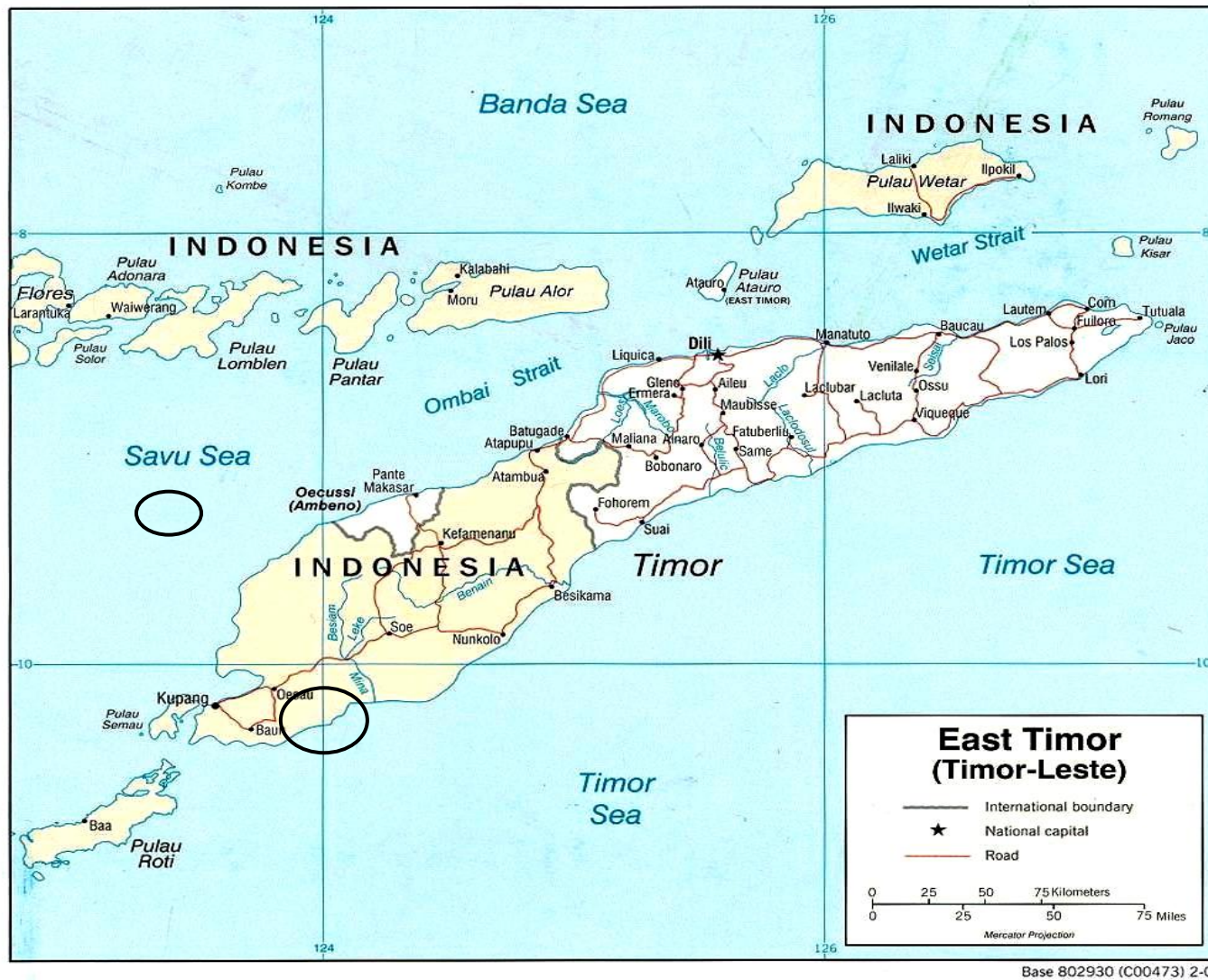


Figure 2. The location of marine protected area (MPA) sites in Timor-Leste.



*Figure 3. Aerial photographic view of the Nino Conis Santana National Park land and marine boundary, 3 nautical miles from the coast.*

## **4.2. One National Marine Park**

Timor-Leste has one National Marine Park in Lautem District, established in 2007 by the NDFA and the National Directorate of Coffee and Forestry, under the Ministry of Agriculture, Forestry and Fisheries of Timor-Leste. Figure 3 shows Jaco Island on the eastern tip of the island, which is an up-welling area that is rich in fish resources. The town of Com on the north coast, is the main centre for the commercial foreign fishing industry currently operating to the south of the main island, mainly in the Sahul Bank Area.

## **4.3. Protection of endangered species**

Endangered species are covered by section 3 of the UNTAET Regulation No. 1999/1.

Protected aquatic species are listed in Ministerial Diploma No 04/115/GM/IV/2005.

Under this regulation, "endangered species" is defined as any species of animal or plant at risk of extinction. The following species of animal are classified as endangered species:

- Sea tortoises;
- Sea turtles;
- Marine mammals, including bottlenose dolphins, whales and dugongs;
- Wallabies;
- Crocodiles;
- All species listed under the Convention on the International Trade in Endangered Species (CITES).

## **4.4. Prohibition of destructive fishing methods including poisoning and dynamite fishing**

Is based on Articles 1.<sup>o</sup> and 2.<sup>o</sup> of the Fisheries Degree Law of Timor-Leste No: 6/2004. Poisoning and the use of dynamite are both prohibited fishing methods in Timor-Leste.

## **4.5. Prohibition of coral extraction**

Coral reefs, often called the rainforests of the sea, harbor great species diversity including fish, invertebrates and sea mammals, and are highly productive. Because of their strategic ecosystem importance, the extraction of coral reefs is prohibited in Timor-Leste.

## **5. CURRENT FISHERIES AND AQUACULTURE RELEVANT TO THE REGIONAL FISHERIES LIVELIHOODS PROGRAMME**

### **5.1. Co-management mechanisms for sustainable utilization of fishery resources.**

Co-management arrangements are being developed in collaboration with coastal communities for them to share with the authorities the responsibility for conservation that accompanies the opportunity to catch fish and earn valuable cash income from this resource.

However there is a need to survey, record and develop a database of critical habitats of importance to fish stocks in inshore areas, e.g. nursery and spawning areas. Such information is important when considering applications for various types of developments such as land reclamation, road building, etc.

Timor-Leste now has the opportunity to learn from the misfortunes of others and will work towards sustainable fishing by undertaking a range of actions including:

- Limiting and effectively controlling the amount of fishing by both national and foreign fishing vessels;
- Banning the use of destructive fishing methods including bottom trawling and fishing with explosives and poisons;
- Preventing the destruction of vital nursery habitat such as mangroves, coral reef areas and sea grass beds;
- Avoiding the targeting of spawning aggregations of vulnerable, high-value reef species by the establishment of closed fishing seasons;
- Recognizing and limiting the impacts of various forms of pollution and sediment run-off caused by tree felling, agriculture and infra-structure projects;
- Promoting appropriate and sustainable foreign aid interventions in fisheries.

By producing consistent sustainable catches the fishing sector will contribute directly towards national food security, poverty alleviation, and wealth creation. However, this will only occur by ensuring that the resources and marine and coastal ecosystems are maintained in good health.

Licensing arrangements for joint fishing ventures are being issued on a precautionary basis. Licences are only issued when it can be shown that there is no threat to the resource or ecosystem, or undue effects on domestic fisheries or markets (Government Decree Law No. 02/2005 (06/07/05)).

Sustainably managing Timor-Leste's fisheries means managing coastal habitats, as well as fish stocks, boats and fishers. Whilst adults of many reef fish species are only found on coral reefs, often their early life phases depend on alternative habitats including mangroves, sea grass beds, and soft and whip coral gardens. The NDFA is protecting these specialized habitats to prevent breaking of the life cycle and reduction in adult stock numbers. Legislation also provides

protection to sensitive coastal habitats by controlling inappropriate infrastructure developments and river borne pollutants.

## **5.2. To measures to improve safety and reduce vulnerability for fisher communities.**

Currently the NDFA of MAFF has no legislation in place to improve safety at sea and reduce the vulnerability of fisher communities. The NDFA however plans to train its staff on safety at sea and vulnerability reduction, and will provide safety equipment in order to reduce lives lost and accidents at sea during severe storm events.

Based on the NDFA of MAF General Fishing Regulations, Degree Law No. 5/2004, article 45 about fishing vessel such as: 1. Small-scale (artesanal) fishing vessels, 2. Semi-industrial fishing vessels and 3. Commercial fishing vessels. Eventually the acacia tree just to make/build the canoe just used for operation for the small-scale fishing with distance 200 meters from the coastline to the sea, semi-industrial fishing vessels with distance 3nm from the coastline to the sea, and industrial fishing vessel with distance 12 nm from the coastline to the sea.

## **5.3. Measures for improved quality of fishery products and market chains**

The current status of aquatic product quality and market chains is that:

- One fish market was established at Taibessi Market under a program called the Factory Referendum by the Forth Government of Timor-Leste.
- There are currently no laws controlling aquatic product quality in the market.
- There is no taxation of fish sold in markets, and no specific government department assigned responsibility to collect taxes on aquatic product sales.
- There are no legal definitions of fish landing sites, or where aquatic products can and cannot be sold.
- No aquatic product landing fees have been legally been set, and no government department has been assigned responsibility for collection of aquatic product landing fees.

Toxic substances are occasionally used for processing and preservation of certain types of aquatic products. The NDFA intends to assess the prevalence of such occurrences and raise awareness of the dangers this poses to the public.

Fishers state that they require better up to date market information on aquatic product supply, demand, prices, and preservation methods. With RFLP support, the NDFA will address this problem.



#### **5.4. Diversified income opportunities for fisher families.**

Timor-Leste is a small country, with very few opportunities for livelihood diversification other than salting, drying and smoking of fish and aquatic products. The fishing industry in Timor-Leste is presently primarily artisanal, and will be so for the foreseeable future. While the NDFA drafted a Tuna Management Plan in 2005, the plan has yet to be implemented.

NDFA of MAF has yet draft about decree law and regulation for the land (Lei Terras) in coastal area and also National Directorate of Land Property of Minister of Justice has yet have a law about the land in coastal area. Right now from NDFA of MAF and Minister of Justice

Livelihood diversification opportunities for fisher households will be promoted by RFLP in Timor-Leste by the provision of training, education and workshops to youths, women and fishers. Following training, fisher communities will apply the knowledge gained in their villages.

#### **5.5. Facilitated access to micro-finance services for fishers, processors and vendors.**

Neither the government of Timor-Leste, nor the NDFA provide credit to fishers for any purpose. The NGO Moris Rasik is the sole provider of credit for fisher communities.

The RFLP will assist the NDFA to facilitate access to micro-finance services including savings schemes, credit and insurance for productive purposes.

#### **5.6. Regional sharing of knowledge in support of livelihood development and reduced vulnerability for fisher communities and of sustainable fisheries resource management.**

The RFLP will develop networks of regional institutions for the sharing of knowledge and lessons learned on sustainable fisheries resource management and livelihood strengthening and diversification and vulnerability reduction for fisher communities. Knowledge sharing will include both successes and failures, and will be done by various mass media mechanisms appropriate to the six RFLP countries in order to maximise benefits from the program.

## 6. RECOMMENDATIONS

- There are no current policies in Timor-Leste within the fisheries sector which have been specifically designed and enacted to address constraints faced by small-scale inshore fishers.
- FAO should provide support to NDFA to develop a fishery sector plan that emphasizes: (i) development and management approaches adhering to principles for responsible fisheries, (ii) refers to fisheries policy instruments of regional organizations, (iii) develops strategic partnerships with international institutions with expertise in the fishery sector, and (iv) integrates fisheries into broader rural development approaches for creating sustainable livelihoods, safeguarding the environment, and enhancing coastal resource management.
- Fish products and trade were covered within the context of industrial and artisanal level production and processing, but in both instances the emphasis has been on food safety and quality of the products. However further capacity building is needed to allow Timor-Leste to compete with other Asian countries in the export market.
- Aquaculture should be promoted as an integrated rural development activity within the context of multiple-use of land and water resources. To do this, national level capacity building is required to improve the planning and management of aquaculture development to ensure the production of safe products and to minimize the negative effects on the environment, bio-diversity and people.
- RFLP should provide capacity building for NDFA staff and key fisher community members on safety at sea and vulnerability reduction.
- The lack of micro-finance services available to fisher communities is a major constraint to expansion of the sector and livelihood diversification.

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