

ATTACHMENT 3



MINISTRY OF AGRICULTURE AND FISHERIES
STRATEGIC PLAN 2014-2020



NATIONAL DIRECTORATE OF POLICY AND PLANNING (NDPP)

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FOREWORD



Recognizing the important role of the agricultural sector for the economy of Timor-Leste and the livelihood of its people, the V Constitutional Government Program will place high priority on developing a strong and vibrant agricultural sector. The Government's strategy focuses on agricultural and rural development that supports small farmers and promotes improved markets in order to reduce poverty, ensure food and nutrition security, and promote economic growth and employment in rural areas, and thus, across the nation.

Since independence, the various governments of Timor-Leste has invested in agricultural infrastructure, machinery, irrigation support, provision of subsidized seeds, fertilizer, drugs, pesticides, nets, boats, and technical assistance in land preparation and rehabilitation of plantations, as well as enacted a number of policies and legislations. The IV Constitutional Government put in place various systems required for rural and agricultural transformation, and the V Constitutional Government Program will facilitate and accelerate this transformation process. As part of this process, the Ministry of Agriculture and Fisheries (MAF) is moving towards the implementation of a results-based planning and budgeting system, as well as adopting an innovative-systems approach in the market value chain. The first step in this process is the development of a Long Term Strategic Plan.

The success of accelerated agricultural transformation relies on: increasing overall agricultural production and productivity, creation and value-addition across the market chain, and effective linkages with other sectors of the economy. Value-addition and market linkages for primary products are vital for the creation of rural employment. This process need to be supported by an enabling environment consisting of effective legislation, institutions, policies and infrastructure as well as the necessary capacity within MAF to deliver essential services. During this development process, the quality of the nation's natural resources should not be compromised.

Therefore, this Strategic Plan for MAF (2014-2020) focuses on five mutually-reinforcing strategic objectives:

- Sustainable increases in production and productivity of selected crops, livestock species, fisheries and forestry;
- Enhance and improve market access and market value addition;
- Improve the enabling environment (legislation, policies, institutions, and infrastructure);
- Ensure MAF and related agencies are strengthened and appropriately configured and equipped to deliver this Strategic Plan and the Government's Strategic Development Plan (SDP 2011-2030); and
- Enhance sustainable resource conservation, management and utilization.

This Strategic Plan is MAF's road map that will guide the development of the Medium Term Operational Plan and the next Five Year (2014-2018) Investment Plan. MAF's ongoing activities will be reviewed in the light of this Strategic Plan and any future investment in agriculture will be made based on this Plan. Priority setting at the district level that focuses on key products in the districts will facilitate the efficient utilization of the MAF's limited resources. An effective needs-based monitoring and evaluation system will be implemented to assess performance and ensure accountability. An annual planning and priority setting mechanism will also be institutionalized within MAF.

In implementing this plan, Government will pursue and support public-private partnerships. Government has also committed to service provision for all agriculture sectors and to increasing public sector investment in agriculture

Although MAF is the Government ministry responsible for the development of the rural sector, widespread and sustainable development will not be realized without support from other sectors especially transport and roads, water and sanitation, energy, health, education, and agricultural finance. Therefore, MAF will work closely with other relevant ministries and establish the necessary multi-sectoral inter-ministerial coordination and collaboration required to deliver this Strategic Plan.

Government alone cannot accomplish this large task. MAF needs active participation and support from development partners, the private sector, civil society organizations, non-governmental organizations, farmers, and farmers' organizations to implement this Strategic Plan.

I am aware that all key stakeholders in Timor-Leste's agricultural sector contributed to the formulation of this Strategic Plan. I thank them all. Now it is up to MAF's staff to accept responsibility to coordinate and implement this Strategic Plan and to demonstrate results based accountability on an annual basis to the people of Timor-Leste.

On behalf of the Government of Timor-Leste, I pledge my full commitment and undivided attention to the implementation of this Strategic Plan.

Honorable Minister of Agriculture and Fisheries



Mariano Assanami Sabino

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List of Acronyms

AIS	Agricultural Innovation System
ASEAN	Association of Southern and Eastern Asian Nations
DA	District Administrator
DD	District Director
DG	Director General
DP	Development Partners
DPO	District Planning Officer
GDP	Gross Domestic Product
GIS	Geographical Information System
FYIP	Five Year Investment Plan
IAA	Integrated Agriculture-Aquaculture
MAF	Ministry of Agriculture and Fisheries
M&E	Monitoring and Evaluation
MED	Ministry of Economy and Development
MTOP	Medium Term Operational Plan
NAEP	National Agricultural Extension Policy
ND	National Director
NGO	Non-Government Organization
NSDP	National Strategic Development Plan
PDD	Program for Decentralized Development
RDP	Rural Development Program
SDP	Strategic Development Plan
SEO	Suco Extension Officer
SMS	Subject Matter Specialist
WDR	World Development Report

Executive Summary

Agriculture development is fundamental for early economic growth and transformation of agrarian economies. The World Development Report (WDR, 2008) concluded that in the 21st century, for agriculture-based countries such as Timor-Leste, the agricultural sector continues to be a vital instrument for poverty reduction, sustainable economic growth, and environmental sustainability. There is now renewed recognition of the fundamental importance of agriculture to Timor-Leste's economy; and its impact on poverty reduction, food and nutrition security, economic growth, and income and employment generation through its linkages with the other sectors of the economy.

Approximately 75 percent of the Timorese live in rural areas; a majority of which derive their livelihoods from agriculture. About one third of the country's non-oil GDP is generated from this sector. Industrial tree crops (mainly coffee) contribute about 23 percent of the export earnings, and account for about 80 percent of non-oil exports. Given its size and influence, Timor-Leste's agricultural sector is the logical platform on which to generate employment and increased incomes through rural development.

Recognizing the importance of agriculture, the successive governments of Timor-Leste have, since independence, invested significantly in agricultural infrastructure, irrigation, machinery, and the provision of subsidized seeds, fertilizer, pesticides, drugs, nets, boats, and assistance with land preparation. Despite these investments the performance of the sector has been mixed and agricultural and rural transformation remains very low. Increased food production has not kept pace with population growth. Timor-Leste is still a net importer of food and a very small exporter of mainly unprocessed commodities. The food sector continues to exhibit erratic production trends and the productivity of most enterprises is very low. Household food and nutrition security levels are also far from satisfactory.

The agricultural sector faces a number of challenges at the macro level, namely: food and nutrition security; poverty reduction; employment creation; low productivity of major commodities; population pressures and rural-urban migration; high expectations in the SDP; poor infrastructure; poor co-ordination and linkages; climate change; and natural resources depletion and degradation.

At the sub-sectoral and organizational level, MAF is confronted with a number of constraints. The most important are:

- Low levels of productivity across all commodities;
- Very limited application of productivity-enhancing inputs and technologies;
- High losses due to pests, diseases and basic post harvest handling;
- Uncertain land rights and under-investment in agricultural land;

- Predominantly subsistence farming/fishing and poor market orientation;
- Inadequate infrastructure for value adding including storage, marketing and distribution;
- Inadequate access/feeder roads;
- Poorly coordinated and weak linkages between public sector implementing agencies and organizations;
- Poor decentralization in terms of planning and decision making;
- Degradation of natural resources, and poorly developed strategies for mitigation and adaptation to climate change;
- Capacity constraints in MAF to effectively address these constraints and deliver services;
- Poor planning, monitoring and evaluation of investments in agriculture;
- Unreliable data for planning and decision making; and
- Inadequate skills/knowledge of the service delivery agents.

Notwithstanding these challenges and constraints, there are many opportunities in the sector. This Strategic Plan outlines how the Government of Timor-Leste intends to realize and build on such opportunities. This Strategic Plan is a “road map” to guide stakeholders as they implement development interventions to achieve the objectives of reducing poverty, ensuring food and nutrition security, and promoting employment and economic growth in the agricultural sector. As such, MAF’s Strategic Plan (SP) 2014-2020 sets out a combination of legislation, policies, programs and projects which stakeholders have identified as priorities and where resources are needed. The SP is based on a vision for the future, which is to have *a sustainable, competitive and prosperous agricultural sector that supports the eradication of poverty and improved living standard of the nation’s people.*

The Development Objectives of MAF’s Strategic Plan 2014-2020 are:

- (i) improve rural income and livelihoods, and reduce poverty;
- (ii) improve household food and nutrition security;
- (iii) support the transition from subsistence farming to commercial farming; and
- (iv) promote environmental sustainability and conservation of natural resources.

The Immediate Objectives (the Strategic Objectives) are: (i) sustainable increases in the production and productivity of selected crops, livestock species, fisheries and forestry sub-sector; (ii) to enhance and improve market (domestic and export) access and value addition; (iii) to improve the enabling environment; (iv) to ensure that MAF and related agencies are strengthened, appropriately configured, and equipped to deliver the nation’s Strategic Development Plan (SDP) and MAF’s SP; and (v) conservation, management, and sustainable use of natural resources.

The underlying logic of MAF's SP is that if the long-term productivity of existing and emerging enterprises can be improved and/or farmers and fishers can be helped to move up the value chain through public and private investments in marketing and value addition activities, then rural incomes and livelihoods will improve. Associated targeted investments around staple food crop production and marketing will deliver improved nutrition at the household level. The agriculture sector can then move towards greater profitability and improved capacity to compete. MAF's enabling environment and organizational strength will facilitate and accelerate this transformation process. These activities must be implemented without causing serious damage to Timor-Leste's environment and natural resources.

SP Interventions have been packaged as five mega programs representing the main areas of opportunity: (i) enhancing production and productivity; (ii) improving market access and value addition; (iii) creating an enabling environment; (iv) organizational strengthening; and (v) sustainable resource management. The components (specific objectives) for each mega program are outlined in the summary matrix, and the key focus areas are described in the strategy document. In all cases the primary role of Government is to: (i) provide the necessary support services and incentives for production and commercialization at the primary producer level, (ii) remove barriers that prevent the private sector from investing in value chains, and (iii) facilitate strategic partnerships.

Mega program 1: Sustainable increase in production and productivity.

To ensure that MAF's vision, mission, goals, and objectives are achieved, the production and productivity of key enterprises (crops, livestock species, fisheries and forestry products) will be increased in a sustainable manner. Six sub-programs will be pursued with the following objectives: (i) improved agricultural research and technology development; (ii) better delivery of advisory services, knowledge and technologies to primary producers; (iii) reduced production and post- production losses; (iv) enhanced productivity through improved water management and water use efficiency; (v) promotion of labor productivity enhancing technologies; and (vi) promotion of selected strategic enterprises.

Mega program 2: Improving market access and value addition.

Enhancing production and productivity needs to be accompanied by significant improvements in marketing and market performance, otherwise primary producers will not benefit from surplus production. Six sub-programs will be implemented in order to enhance market access and value addition with the following objectives: (i) improved capacity for regulation and enforcement, especially safety standards and quality assurance; (ii) improved access to high quality inputs, planting and stocking materials, and fishing equipment; (iii) value chain analysis and increased participation in value addition activities; (iv) an expanded network of rural market infrastructure; (v) strengthened farmer groups and farmer organizations for collective marketing; and (vi) improved private sector engagement in input and product marketing and service provision.

Mega program 3: Improving the enabling environment for the agricultural sector.

This program includes a wide range of structures, policies, regulations and standards as well as mechanisms for effective operation amongst key stakeholders. Five sub-programs will be implemented to improve the enabling environment with the following objectives: (i) establishing a clear framework and capacity for policy analysis and implementation; (ii) undertaking planning and responsibilities for improving the implementation and management of sector policies and programs; (iii) strengthening agricultural statistics systems to provide timely and accurate information to stakeholders; (iv) providing accurate and up-to-date climate information for improved planning and decision making; and (v) developing necessary early warning systems to help mitigate the impact of, and adapt to, climate variability.

Mega program 4: Organizational development.

One of the key ingredients for the success of Timor-Leste's agricultural sector is the capacity of MAF and related agencies to deliver the necessary support services in line with missions and mandates. In the recent past, MAF has been confronted by a number of constraints that has affected its service delivery capacity and performance. These include: (i) inadequate operational funds; (ii) low staff skills; (iii) weak planning and priority setting; (iv) weak co-ordination mechanisms; and (v) weak monitoring, evaluation and communications. In order to strengthen the capacity and performance of MAF, seven sub-programs will be implemented with the following objectives: (i) review the organizational structure, governance mechanisms and modalities of operation; (ii) develop and implement a manpower development and capacity strengthening strategy and program; (iii) develop and implement a knowledge management and communication strategy and program; (iv) develop and implement a monitoring and evaluation strategy; (v) review and revise the human resource management policy and practices; (vi) develop and implement a partnership strategy; and (vii) develop and implement a resource mobilization strategy.

Mega program 5: Sustainable resource use.

The objective of this mega program is to enhance the capacity of primary producers to use resources in a sustainable manner and to ensure best-practice management of natural resources. This issue is also addressed implicitly in the other program areas. Four sub-programs will be implemented with the following objectives to ensure improved natural resource conservation and management: (i) sustainable natural resources management and utilization; (ii) increased knowledge, protection and utilization of biodiversity; (iii) development and dissemination of environmentally-friendly agricultural industry practices; and (iv) promotion of the conservation of national and cultural heritage.

The first step in the SP implementation process is to review the various priorities and this should be completed at different levels. Firstly, priorities should be reviewed at the district level paying due attention to: (i) local communal priorities; (ii) land use capabilities (based on agro-climatic

conditions); (iii) current land use; and (iv) socio-economic viability and competitiveness. This exercise could also define specialized production zones if appropriate. Then, based on this district-level review and the strategic frameworks, each national directorate should also review and prioritize their on-going and planned activities for the next five years. This process should be transparent, participatory and inclusive. There is also a need for reconciling local and national priorities in this process.

The next step in the process is to develop a Medium Term Operational Plan (MTO) and an associated Five Year Investment Plan (FYIP). The MTO will define in detail specific action steps, projects and activities that are envisaged under each strategic sub-objective; including: (i) the people responsible for implementation (ii) the partners that need to be involved; (iii) the resources needed; (iv) the timing and location of activities; (v) performance indicators; and (vi) accurate costs. The FYIP will be developed based on the MTO. The aim of the FYIP is to ensure that costs of the planned activities are estimated accurately, and adequate funding support is allocated to ensure the provision of critical public goods and services to producer groups. The FYIP will guide the development of MAF's Annual Work Plans and Budgets.

Based on the various logical frameworks, a needs-based Monitoring and Evaluation (M&E) system will be developed and integrated into all stages of the plan implementation. As an integral part of this M&E process, MAF will introduce an annual planning and priority setting process for all its directorates. During the process each directorate should: (i) present the activities completed during the year; (ii) outline the results achieved; (iii) describe the problems/constraints encountered, new issues identified, and lessons learned; and (iv) present the projects and activities planned for the following year. This process will facilitate effective planning, accountability, communication, inter-departmental collaboration and learning from past experiences.

Implementation of nearly all activities will take place in the districts. Therefore MAF will establish the necessary co-ordination and linkage mechanisms (including decentralized decision making) with district administrations and other relevant bodies.

Agricultural growth and rural development cannot be achieved by programs and activities implemented by MAF and its agencies alone. Considerable complementary investments are needed in transport and roads, water and sanitation, power, health and education. Therefore cross-sectoral and inter-ministerial co-ordination needs to be improved between MAF and other sectors that provide complementary investments and services that have a bearing on agriculture.

Full participation of the private sector and the support of development partners are critical for the successful implementation of the SP. It is important to ensure that future investments and support

from development partners are aligned with, and contribute to, the implementation of this SP and the associated FYIP.

MAF's Strategic Plan Summary Matrix

Vision	A sustainable, competitive and prosperous agricultural sector that eliminates poverty and supports improved living standards of the Nation's people.			
Development Objectives	<ul style="list-style-type: none"> a) Improve rural incomes and livelihoods, and reduce poverty; b) Improve household food and nutrition security; c) Support the transition from subsistence farming to commercial farming; and d) Promote environmental sustainability and the conservation of natural resources. 			
Strategic Objectives (Immediate Objectives)	<ol style="list-style-type: none"> 1. Sustainable increase in the production and productivity of selected crops, livestock species, fisheries and forestry sub-sector. 2. To enhance and improve market (domestic and export) access and value addition. 3. To improve the enabling environment. 4. To ensure that MAF and related agencies are strengthened, appropriately configured and equipped to deliver on the National Strategic Development Plan and MAF's Strategic Plan. 5. Natural resources conservation management and utilization 			
Mega Program 1: Production and Productivity	Mega Program 2: Markets and Value addition	Mega Program 3: Enabling Environment (Policy, Institutions, Infrastructure)	Mega Program 4: Organizational Strengthening	Mega Program 5: Natural Resources Conservation and Management
Specific Objectives per Sub program				
1.1: To enhance the contribution of agricultural research to sustainable agricultural production, food and nutrition security and poverty reduction.	2.1. To develop and implement safety standards and quality control assurance across crops, livestock, fisheries, and forestry products	3.1: To establish a functional, clear and accountable policy and legislative framework and capacity for policy analysis and implementation.	4.1: To review the organizational structure, governance mechanisms and modalities of operation to ensure that MAF and related agencies are functioning as relevant modern client-oriented organizations.	5.1: Sustainable natural resources management and utilization.
1.2: To increase farmers' access to relevant information, knowledge, and technology through effective, efficient, sustainable and decentralized extension services.	2.2: To promote access and use of high quality inputs, planting, and stocking materials, and fishing equipment.	3.2: To ensure coordination and responsibilities are undertaken in a coherent manner leading to improved implementation and management of sector policies and programs.	4.2: To develop and implement a manpower development and capacity strengthening policy strategy and program to enhance the productivity of MAF staff.	5.2: Increase the knowledge, protection and utilization of the bio-diversity within Timor-Leste.

1.3: To reduce losses through improved control of pests, vectors and disease.	2.3: To promote diversification and value addition activities within the sub sectors along the value chain.	3.3: To establish and maintain a functional agricultural statistics system providing timely & appropriate information to sector stakeholders, and assisting with MAF planning and management.	4.3: To develop and implement a knowledge management and communication strategy to facilitate effective decision-making and accountability.	5.3: Development and dissemination of environmentally friendly agricultural industry practices.
1.4: To develop water resources for agricultural production on the basis of sustainable irrigation, water for livestock and aquaculture.	2.4: To provide the necessary rural market infrastructure including appropriate structures to improve post-harvest losses.	3.4: To develop capacity for improved decision-making in planning, and budgeting processes by providing accurate and up-to-date climate information and analysis.	4.4: To develop and implement an M&E strategy.	5.4: Promote the conservation of national and cultural heritage.
1.5: To increase the use of labor productivity enhancing technologies including appropriate mechanization and other farm management related practices.	2.5: To promote collective marketing, and support to Farmer Groups and Farmers' Associations.	3.5: To develop the necessary early warning and weather monitoring systems to help mitigate the impact of, and adapt to, climate variability.	4.5: To review the HR policy and practices to provide the necessary skills and incentives to enhance the performance of MAF's staff.	
1.6: Accelerate production of selected strategic enterprises on the basis of specialization and agro-zoning.	2.6: To promote private sector engagement in input supply and product marketing.		4.6: To develop and implement a partnership strategy for MAF	
			4.7: To develop and implement a resource mobilization strategy to ensure adequate and sustainable funding for MAF.	

Chapter 1: Introduction and Background

Introduction

Agriculture is the mainstay of Timor-Leste's economy and the main source of livelihoods for its people. The sector will remain as the most important of the non-oil economy for the foreseeable future. The role of agriculture as the basis for early economic growth is well-established and well-documented. In the recent past, a number of Asian economies have managed to achieve sustainable growth through consistent long-term investment in agriculture. The World Bank Development Report (WDR, 2001) concluded that in the 21st century, agriculture would continue to be a fundamental instrument for poverty reduction, sustainable economic growth and environmental sustainability in agriculture-based countries such as Timor-Leste. The role of and contributions from agricultural sectors in economic transformation and overall country development are largely determined by three factors: (i) the relationship between the agricultural sector and other sectors of the economy; (ii) the priority afforded to agriculture in the political arena; and (iii) the models and strategies used to stimulate growth and development. This Strategic Plan (SP) outlines the strategies chosen by the Ministry of Agriculture and Fisheries (MAF) to accelerate the much-needed agricultural transformation process in Timor-Leste.

1.1 Background and purpose

Three mutually reinforcing imperatives drive this strategy development process. The first is the strategic management of MAF; the second is ensuring that MAF's strategies, priorities, and activities are consistent with the National Strategic Development Plan (SDP) 2011-2030; and the third is the urgent need to increase public funding for Timor-Leste's agriculture sector, which is very low by international standards and has stagnated over the last 3-4 years.

The process of strategic management within any organization involves three steps: strategy formulation, strategy implementation, and performance assessment and feedback, as well as making the necessary changes to keep the process dynamic and relevant. It is an on-going, never-ending integrated process requiring continuous reassessment and reformulation.

In April 2010, when launching the SDP, the Prime Minister of Timor-Leste announced that there are *“three strategic sectors for economic growth in the coming two decades: agriculture, petroleum, tourism and..... that each of these requires a public investment plan”*. Over the years Government has completed a number of key documents to guide accelerated smallholder-led agricultural transformation. The notable documents are:

- The National Strategic Development Plan (2002)
- IV Constitutional Government Program (2007-2012)
- Strategic Development Plan (2011-2030)
- V Constitutional Government Program (2012-2017).

In light of the national Strategic Development Plan (SDP) 2011-2030 and the Fifth Constitutional Government Program (2012-2017), there is a need for MAF to revisit its current strategy to ensure that it is consistent with the Ministry's strategies and priorities articulated in the SDP.

MAF's budget increased steadily during the period 2002 to 2009 (US\$ 1.5 million in 2002 to almost US\$ 34 million in 2009). Since then the ministry's budget has declined considerably and is currently stagnating at around US\$ 16 million. Sustainable funding of MAF is critical to facilitate smallholder transformation. This SP is expected to assist MAF in its resource mobilization process.

The agriculture section of SDP is, in part, modeled on experiences from the Asian Green Revolution. In this context it is worth noting that the Asian Green Revolution was a state-driven, market-mediated and small farmer-based strategy to increase national self-sufficiency in food grains (Sida, 2006). Analysts often refer to a "seed-fertilizer revolution" but fail to emphasize the consistent role played by the state in this revolution. MAF also requires a sound investment plan in order to justify additional investment and operational funds from Government. This SP has been designed within this context.

Purpose

The overall purpose of the MAF SP is to improve MAF's effectiveness, efficiency, performance and governance, with the objective of effective contributions to the SDP. The process undertaken was included a review and update of an existing Plan, aligning it with the SDP, and facilitating the development of a strategy-driven Medium Term Operational Plan (MTO) and a sound Five Year Investment Plan (FYIP). Consequently, this SP has been developed by MAF to translate the agriculture section of the SDP into objectives, policies, programs and activities that will lead to economic growth and development in Timor-Leste.

1.2 Strategy Formulation Process

There is no fool-proof way to develop a SP. The approach used depends on the context and resources as well as the relevant time constraints. However, there are some key steps in the process: (i) situation analysis; (ii) deciding on the desired future state; and (iii) determining how to get there. The process of implementation and assessment begins once these activities have been completed.

A very pragmatic approach was used to developing MAF's SP for the period 2014-2020. Ideally a strategy development process should be all-inclusive, participatory, and demand-driven. In addition there should be local leadership so that the eventual product is owned by MAF and its key stakeholders. Since a considerable amount of information was already available, the following process was used to develop the SP.

The available documents were a useful framework for the strategy development process. Therefore:

- a) The first step of the process was to collect, analyze and synthesize the available information.
- b) The second step was to validate and update the information as well as to collect any missing data. The relevant primary data were collected using a targeted questionnaire addressed at a specific group of stakeholders, namely senior MAF managers, development partners, district directors, and NGOs actively engaged in the agricultural sector.
- c) The core strategy and its components were identified through a brain storming process within MAF.
- d) A two-day national workshop was held with the key stakeholders in order to review the various components of the strategy and its priorities, to seek additional inputs, and to form a consensus.
- e) Finally, the draft strategy was presented to key stakeholders at the national and district levels to obtain consensus and seek additional input. The draft SP was then revised and finalized based on this feedback.

A number of partners were involved in the development of this SP. These include user communities/beneficiaries, Non-Governmental Organizations (NGOs), staff of the National Directorates (NDs), staff of the District Directorates (DDs), the District Administrators (DAs), the District Planning Officers (DPOs), Local Extension staff, and the agro-business community. These are all important role players and clients of this SP, which has been designed to enable the people of Timor-Leste to achieve the agricultural targets, set out in the SDP.

Outline of the Plan

The next section highlights the current situation of the agricultural sector including strengths and weaknesses of MAF, changes in the external environment (including client needs), as well as the challenges and constraints facing the sector. In the third section, the Vision, Mission, Guiding Principles, Development Goals and Objectives, Core Strategies and their Components are then developed and defined. The various aspects of Strategy Implementation as well as the Complementary Strategies needed for the effective SP implementation are outlined in the last section.

Chapter 2: Scene Setting

2.1. Introduction

The results of the situation analysis are presented in this section of the SP which begins by defining the role of agriculture in economic growth and development.¹ The current structure of Timor-Leste's agriculture sector and its past performance are then discussed. This is followed by an outline of MAF's strengths and weaknesses. Finally, the challenges and constraints facing MAF and the various agriculture sub-sectors are presented, along with a summary of MAF's various client groups and their expectations for the future.

2.2. The Role of Agriculture² in Economic Growth and Development

Agriculture contributes to development in many ways (WDR, 2008):

a. As an economic activity and leading sector for economic growth.

Agriculture can be a source of growth for the national economy both as a provider of investment opportunity for the private sector and as a prime driver of agriculture-related industries and the rural non-farm economy. In addition to its direct contribution to Gross Domestic Product (GDP), employment and foreign exchange earnings, agriculture generates significant multiplier effects through value addition as well as forward and backward linkages with input and output markets.

b. As a livelihood

Agriculture is a source of livelihood for the majority of the rural poor.

c. As a provider of environmental services

As a major user of natural resources (land and water), agriculture can create good and bad environmental outcomes. With increasing resource scarcity and mounting concern for the environment (externalities), agricultural development and environmental protection have become closely intertwined.

¹ This section of MAF's SP is based on various published and unpublished reports. These include: The National Development Plan (2002); The National Strategic Development Plan (2011-2030); the Timor-Leste Maize Storage Project Design Report (Working Paper 1: Agricultural Background, IFAD 2011); Seeds of Life Phase 3 Program Design Document (Appendix 2, May 2010) - Overview of Policies and National Directorates: MAF's Resources, Activities and Plan for 2010 (MAF, May 2010); MAF's Strategic Plan (2010-2030); MAF's document on Entrega do Processo de Governação do Ministério da Agricultura e Pestas (2007-2012) – MAF's Five Year Report 2007-2012; Fifth Constitutional Government Program (2012-2017); Timor-Leste National Aquaculture Development Strategy (MAF, 2012); Timor-Leste National Aquaculture Development Strategy (2011-2030).

² In this context, the term agriculture sector is defined to include annual and perennial crops, livestock, forestry and fisheries.

d. Peace and stability

Good governance, peace, security and political stability are necessary pre-conditions for sustainable growth and development. By providing food for a growing population at an affordable price, agriculture contributes to the maintenance of food security and political stability.

Given the inter-sectoral linkages, managing the connections between agriculture, natural resources conservation and the environment must be an integral part of relying on agriculture for development.

2.3. The Structure and Contribution of Timor-Leste's Agricultural Sector

2.3.1. Structure of the Agriculture Sector

Timor-Leste is divided into three major ecological zones (low land, high land, and slopes) based on intensity of rainfall and topography. Farming systems are classified as: (i) rain fed subsistence agriculture – upland food crops (maize, cassava, etc.); (ii) irrigated crop production (mainly rice); (iii) industrial plants (coffee, coconut, candlenut, cashew, vanilla, etc.); and (iv) livestock (cattle, buffalo, pigs, sheep, goat and poultry). Cultivation is practiced mainly by smallholder farmers (on average 1.2 ha per household) on mixed livestock–crop farms that are at, or near, subsistence level in many instances. Overall, about 63 percent of households in Timor-Leste are engaged in crop production with maize, cassava and vegetables being the most common crops. Although rice is a staple food, only 25 percent of households produce it. Paddy is produced from irrigated and non-irrigated land and is generally grown as one crop per year. Other food crops grown in many parts of Timor-Leste are sweet potato, mung bean, peanut and soya bean.

Industrial crops include coffee, candlenut, coconut and cashew nut. About 52 percent of the country is covered by light and dense forest. The commercial forest trees are teak, sandalwood, rosewood and mahogany.

Fishing generally uses small motorized and non-motorized vessels for subsistence catch and markets. The country's marine bio-diversity is extremely high.

2.3.2. Contribution and Performance

As a whole, Timor-Leste's agricultural sector is the key to the overall development of the country by providing food, employment, income, foreign exchange, and taxes and levies; as well as raw materials for food security and agro-based industrialization.

Of the 1.1 million people in Timor-Leste, approximately 75 percent live in rural areas and the majority derives their livelihoods from agriculture. About one third of the country's non-oil GDP is generated from this sector. Industrial tree crops (mainly coffee) contribute about 23 percent of the export earnings and account for about 80 percent of the non-oil exports. Although Timor-

Leste produces less than 0.2 percent of the global coffee supply, it is the largest single source producer of organic coffee in the world.

In order to achieve the stated policy objectives, since independence successive governments have invested significantly in agricultural infrastructure (including irrigation), machinery and equipment, provision of subsidized seeds, fertilizers, pesticides, drugs, assistance with land preparation and the provision of public goods and services (MAF Annual Report 2007-2012, and SDP 2011-2030).

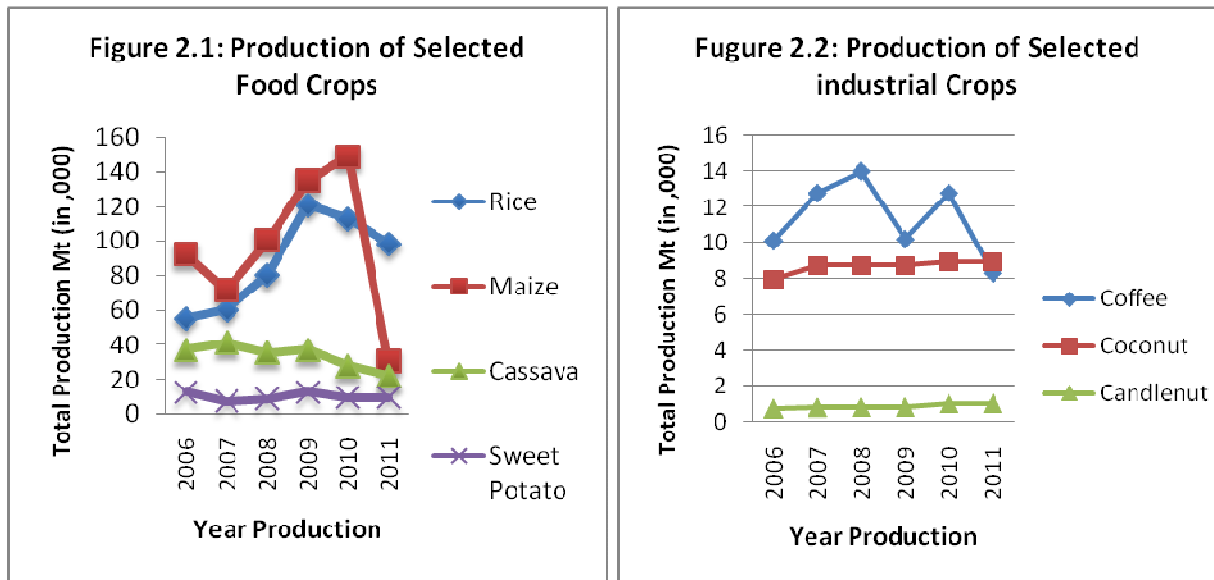
- The number of staff in MAF has increased considerably and is currently (2012) 2,107 people.
- Extension officers are working across the country and eight Agricultural Tractor Maintenance Center have been established.
- From 2007 to 2009 the number of hand tractors increased from 100 to 2,591 and the number of small- to medium-sized tractors from 13 to 315. The Government has also: (i) distributed 154 rice milling units;(ii) rehabilitated 31 irrigation schemes; (iii) installed 5,000 silos; and (iv) established 32 “mini markets” in districts to facilitate the marketing of agricultural commodities.
- During the period 2008 – 2011 MAF has provided 133 rice harvesters; 373 coffee pulping machines; 20 large motor boats, 59 small motor boats, and 12 fiber-glass boats; 18 fishing nets; 14 coconut oil extractors; and 150 maize hullers.
- During the same period, Government and its agencies have produced and distributed improved seeds and planting materials for a number of crops. This includes 180 tons of rice (variety NAKROMA); 92.5 tons of maize (89 tons of SELE and 3.5 tons of NAI); 1.08 million cuttings of sweet potatoes (variety HORAI); 270,000 sticks of cassava (variety AI-LUKA) and 57 tons of beans.
- With regards to production of food and industrial crops during the period 2007-2011:
 - The total area of paddy rice production reached a peak of 45,635 ha in 2008 and since 2010 has remained static at around 36,000 ha, and the average productivity was 2.47 tons/ha;
 - The total harvested area of maize reached a peak of 79,433 ha in 2009 and for the then stabilized at about 72,000 ha. The average productivity 1.53 tons/ha;
 - The area of mung-bean production has almost doubled and remains at around 3,000 ha. The average productivity was 0.94 tons/ha;

- The area of ground nut harvested almost tripled to about 3,700 ha in 2011. The average productivity was 1.30 tons/ha;
 - The area of cassava harvested decreased from 11,200 ha in 2007 to 5,754 ha in 2011 and the average productivity was 3.81 tons/ha;
 - The area of sweet potato has not changed significantly - the average harvested area was about 3,700 ha and the average productivity was 2.61tons/ha;
 - The area production coffee has increased from 50,000 ha in 2007 to around 54,500 ha in 2011. The average productivity was 0.21 tons/ha;
 - The area under coconut production has stagnated at about 14,000 ha, with an average productivity of 0.59 tons/ha;
 - The area under candlenut increased slightly 3,120 ha in 2007 to 3,466 ha in 2011, and the average productivity increased from 0.24 tons/ha to 0.29 tons/ha; and
 - The total area of cashew nut harvested has stagnated at 16 ha with an average productivity of 0.08tons/ha.
- Between 2004 and 2008 the number of cattle increased from 135,000 to 145,000; buffalo from 96,000 to 102,000; goats from 127,000 to 137,000; sheep from 39,000 to 41,000; horses from 63,000 to 69,000; Pigs from 332,000 to 388,000; and native chickens from 159,000 to 771,000;
 - Between 2004 and 2009, the number of motorized fishing boats increased from 437 to 1,036, whereas the number of non-motorized boats remained at around 2,400. The ratio of the number of fishermen per motorized boat has decreased from 11 to 5. The area of fresh water fisheries has increased from 11 ha to 41 ha. Brackish water fisheries increased from 4 ha to 6 ha, and sea water fisheries from 2 ha to 31 ha. The amount of fish exported has declined drastically.

Timor-Leste's agricultural GDP (which is about 30 percent of non-oil GDP) grew by 2.9 percent between 2000 and 2007. Over the same period, the non-oil GDP grew at a compound rate of 4.6 percent. This growth was due mainly to an expansion of the commercial sector (which grew from 17 percent to 27 percent of total agricultural GDP).

However, a critical analysis reveals that the major food crops (especially rice and maize) and cash crops (coffee) continue to exhibit erratic production and the productivity of all crops is very low. The production trends for the major food and industrial crops are presented in Figures 2.1 and 2.2.

Overall Timor-Leste is a net importer of food, and a very small exporter of mainly unprocessed commodities. Despite the efforts made by Government, the overall performance of Timor-Leste’s agricultural sector is not impressive and does not compare well with similar countries.



Source: MAF Five Year Report 2007-2012

There is considerable potential for increasing the contribution of Timor-Leste’s agricultural sector. Of the 15,000 km² land area, about 40 percent is suitable for crop and/or livestock and only about 80 percent of this cultivable land is currently being used. The potential for the fisheries sub-sector is similarly substantial. With a coastline of about 735 km² and an exclusive Economic Zone of 75,000 km², Timor-Leste has the potential to produce large quantities of fish but the sub-sector remains under-developed. Commercial fishing and fish-based value chains are considered to be high potential areas for development. Climate conditions are also suitable for growing a range of forestry (hardwoods and sandalwood) and fruit trees (rambutan, peaches and plums) as well as spice crops such as black pepper, ginger, cloves and vanilla. Potential also exists for increased livestock production and exports. There is a growing market for live cattle in Indonesia and increased demand for meat from Malaysia and other (ASEAN) countries.

2.4. Organizational Structure and Policy Framework

2.4.1. Organizational Structure of MAF

MAF’s establishment is based on Decree Law 41/2012 of Organic Law of the V Constitutional Government. According to Article 32 of the Organic Law, MAF’s mandate is to be the central organ of Government responsible for the conception, implementation, coordination, and evaluation of the policy defined and approved by the Council of Ministers for the areas of agriculture, forestry, fisheries and livestock.

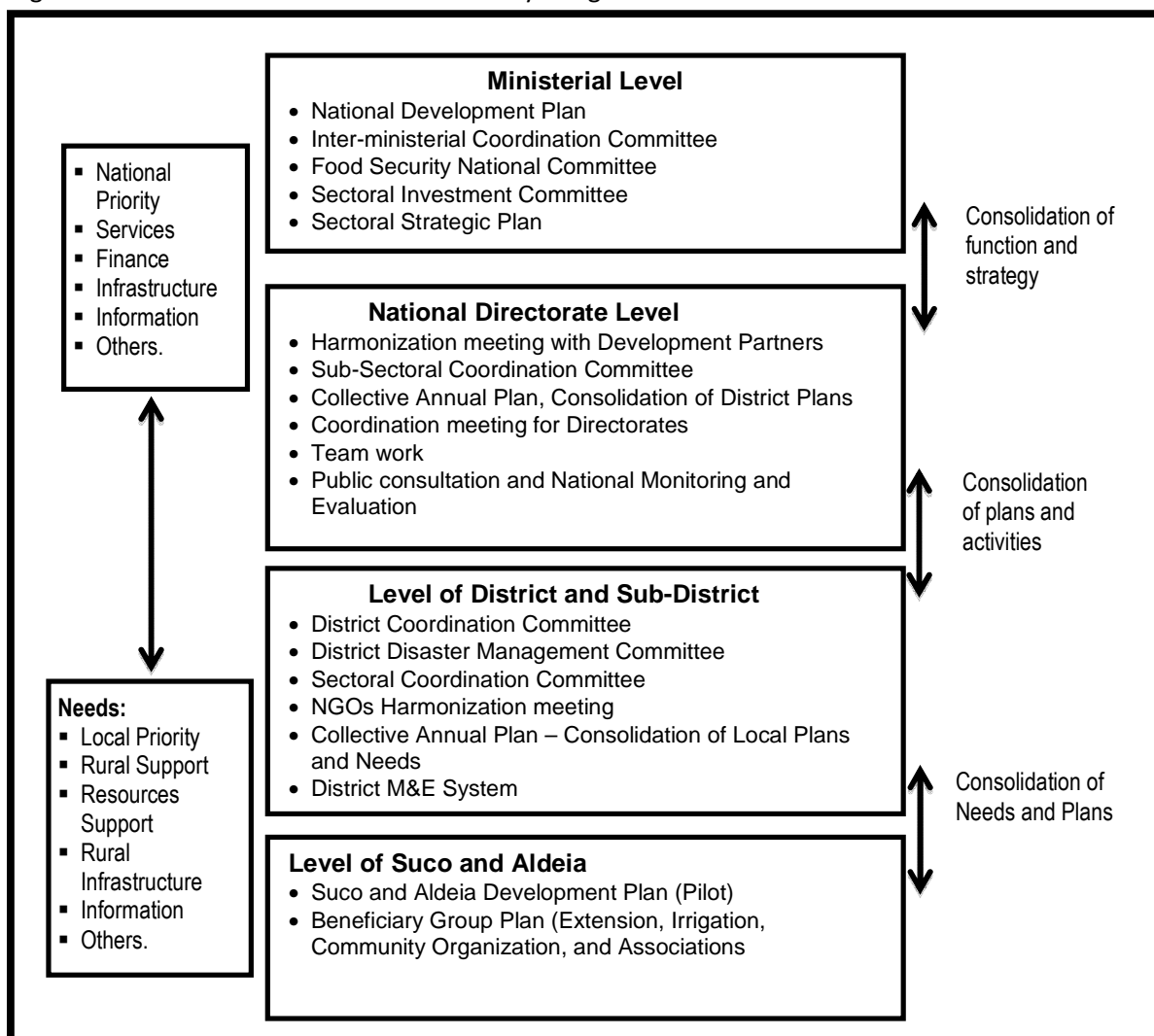
The organizational structure and governance of the Ministry is stipulated under Decree Law No. 4/2004 on the Structure and Rules of the Ministry of Agriculture, Livestock, Fishery and Forestry. This decree was revised by the enactment of Decree Law No. 18/2008 (19 June 2008). Although the Government has changed from the IV Constitutional Government to the V Constitutional Government, the current structure of MAF remains, based on the Decree Law 18/2008 mentioned above and is presented in Annex 2.1. The powers of MAF as stipulated by the Decree are summarized in Annex 2.2.

The Ministry is currently headed by a Minister and assisted by a Vice Minister, a Secretary of State for Forestry, a Secretary of State for Fisheries, and a Secretary of State for Livestock.

The Director General (DG) is supported by 12 National Directorates and 13 District Directorates. The nine Technical National Directorates are responsible for the development of the various sub-sectors, including planning, monitoring and policy development, administration and finance, and regulatory services. The missions of the National Directorates are summarized in Annex 2.3. The development, implementation and administration of programs and activities is predominantly a National Directorate responsibility. The District Directorates consists of three Departments: Agricultural Extension, Technical Services Support; and Administration and Programs. The organizational structure of the District Directorates is presented in Annex 2.4.

MAF is the government institution mandated for the development of the main rural sectors and for coordinating rural development. MAF has personnel at all levels ranging from national to local and is working with farmers, other government agencies, the private sector and development partners. MAF, therefore, has established coordinating mechanisms at all levels for harmonizing functions, planning and implementation and for monitoring progress of achievements in rural development (See Figure 2.3).

Figure 2.3: Coordination Bodies in the Ministry of Agriculture and Fisheries



Source: MAF (2010)

2.4.2. Policy Framework

The current priorities of MAF are guided by the National SDP (2011-2030). Increased productivity and self-sufficiency are the major focus of the agricultural development component of the SDP.

Since the launch of the Policy and Strategy Strategic Framework (2004), sub-sector policies have been developed by MAF for forestry, fisheries, food security and quarantine. Policies for livestock production, agricultural extension and agro-chemicals are in the last stages of development. The National Agricultural Extension Policy (NAEP) provides a framework for the establishment of a new national public and free agricultural extension service. The Gender Policy

(2005) focuses on the need to achieve equality between men and women in the access to, and control over, the process of development and benefit-sharing in both the organizational and programmatic aspects of MAF. The Food Security Policy treats food security as a cross-sectoral and multi-level issue involving stakeholders from the household to national levels. This policy addresses issues related to access, availability, stability and effective utilization of food.

MAF's Strategic Plan needs to recognize this existing policy framework as it has implications for program development and implementation.

2.5. Major Challenges facing the Agriculture Sector

The agricultural sector as a whole faces a number of challenges, namely food and nutrition security; poverty; employment creation; low productivity of major commodities; a rapidly growing population coupled with rural-urban migration; high expectations in the SDP; poor infrastructure; poor coordination and linkages; and climate change and its implications, as well as the sustainable and economic utilization of natural resources (soil, water, forestry, marine fisheries, and bio-diversity). Some of these key challenges are discussed in the following sections.

2.5.1. Poverty

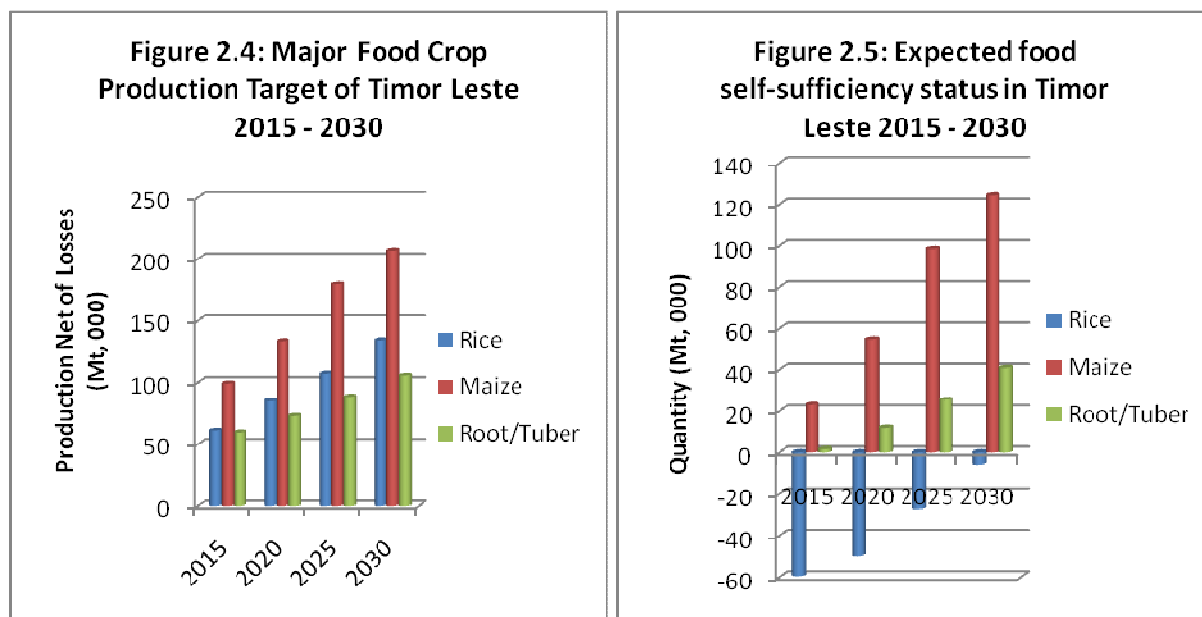
Rural poverty is severe in Timor-Leste. Almost 50 percent of the people, particularly in rural areas, live below the official poverty line. Almost 80 percent of the poor nationwide and 90 percent of the poor in rural areas depend on agriculture for their livelihoods. Evidence elsewhere suggests that increasing the production and productivity of staple foods are effective ways to reduce poverty.

2.5.2. Food and Nutrition Security and Employment Creation

On average, rural households have insufficient rice or maize for about 3.8 months each year, while urban households experience food shortages for two months each year (SDP p.107). Over 70 percent of the families in Timor-Leste rely on some sort of farming activity for their survival, which has obvious implications for food security.

Based on the SDP, the nation should achieve food self-sufficiency by 2030. The projected production targets (net of losses) for the period 2015-2030 and the projected food balance for the major food crops are presented in Figures 2.4 and 2.5.

Of the 2,500 kilo calories needed per day per person, 75 percent is obtained from three crops: rice, maize, and roots and tubers. Rice alone contributes to about 42 percent of the average calorie requirement; and maize and roots and tubers contribute to 26.5 and 6.4 percent respectively. Only 3.5 percent of the calorie requirement is derived from meat, fish, and vegetables (MAF 2012).



Source: SDP 2011-2030

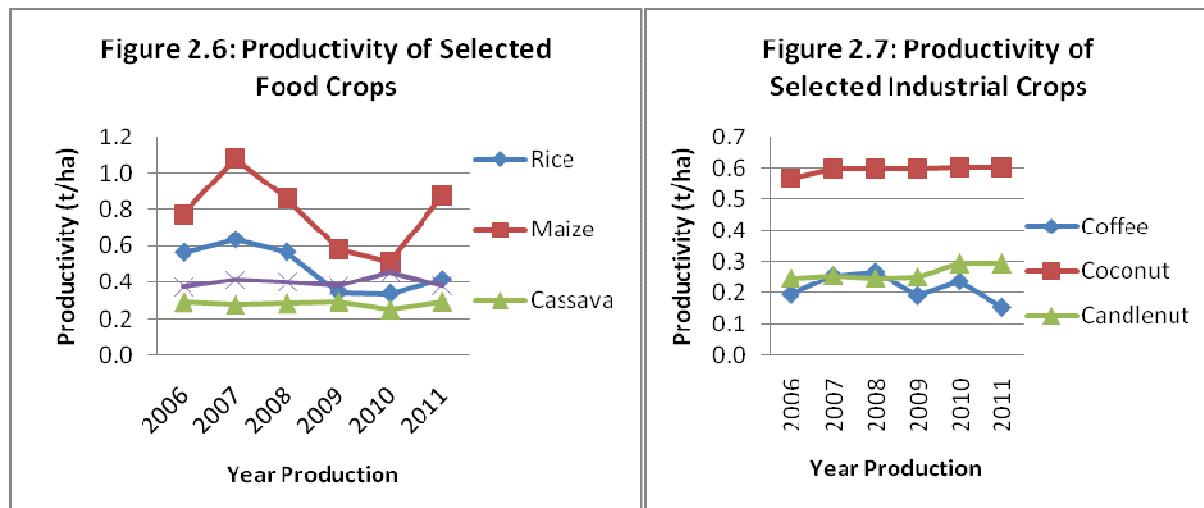
Nationally, the population was growing at an annual rate of 3.2 percent (prior to the 2010 census) and if this trend continues, Timor-Leste’s population is expected to double in 17 years (SDP p. 107). Thus the agricultural sector has the challenge of feeding both the current population and the future population.

In addition, there is also a need for creating rural as well as agro-industry-based employment to gainfully employ the growing population. Urbanization and improved urban incomes may also change consumption patterns and increase the demand for livestock products.

2.5.3 Low Productivity

Crop yields in Timor-Leste are very low by both world and regional standards. According to an International Fund for Agriculture Development (IFAD) Report (Timor-Leste Maize Storage Project Design Report, 2011) in 2007, Cambodia reported yields for the main food crops as (Mt/ha) 3.45, 20.83, 4.76 and 2.36 for maize, cassava, sweet potato and paddy rice, respectively. The corresponding yields reported for Timor-Leste in the same year were only 1.00, 4.14, 3.17 and 1.31 Mt/ha, respectively. The average productivity of coffee is about 225 kg/ha whereas, based on comparative research it appears possible to achieve yields of between 1,300-1,400 kg/ha. The average production of coconut plantations is around 565 kg/ha. Based on comparative research, the yield potential can be as high as 1,500 kg/ha (NDPP, 2012).

The agricultural productivity trends for selected food and industrial crops for the period 2006-2011 are presented in Figures 2.6 and 2.7. These clearly demonstrate that no significant gains in productivity have been achieved during this period. A quick review of the production trends over the same period for these crops reveals that with the exception of maize and rice, overall production has also stagnated during this period.



Source: MAF Five Year Report 2007-2012

Reasons for the low production and productivity of the sector include:

- Vulnerability to weather conditions (including climate change);
- Use of traditional low-productivity technologies;
- Insufficient outreach of rural services (e.g. extension, inputs, marketing, mechanization, etc.);
- Poor rural infrastructure (e.g. rural roads, irrigation schemes);
- Weak market orientation (e.g. subsistence producers, distorted price frameworks, high transaction costs, etc.);
- Use of unsustainable farming practices (e.g. slash and burn, and overgrazing); and
- Low private investment.

2.5.4. Environmental Degradation and Climate Change Effects

There is now a general consensus that the environmental agenda is inseparable from the broader agenda of agriculture for development. Intensive and extensive agriculture production systems lead to environmental consequences. Additionally, long-term climate change has its own consequence on the environment as well as on agricultural production.

Climate change leading to extreme weather events creates changes in geographical production patterns as well as deterioration of the natural resource base due to water scarcity and rising temperatures. Crop yield losses are imminent with the increased risk of drought, floods and

cyclone events, and the intensities with which they occur. Research and development efforts can play a significant role in responding to the challenges of climate change as well as mitigating and adapting to climate-related production risks.

Seventy percent of Timor-Leste's land area has a slope of over 26 percent. The majority of rural households cultivate within this area, thereby contributing to soil erosion, limited moisture retention and decreasing soil fertility (SDP, p.116). In the past there has been very little action to protect some of the more vulnerable and environmentally significant areas of forests, rivers, and water catchments.

Land degradation remains a problem on both good as well as marginal lands with increasing pressure on agriculture to raise output per unit of land. It is a major challenge to ensure that this does not take place at the detriment of Timor-Leste's natural resource base.

2.5.5 Coordination and Linkages

This involves internal and external coordination with other ministries and partners. Axis 1 of the coordination framework prepared by the former Ministry of Economy and Development (MED) describes MAF's overall rural development responsibilities, including a sustainable increase in nutrition and food security as well as reduced poverty for farm households. These issues are multifaceted and call for action by many stakeholders.

MAF, according to Decree Law 41/2012 on the Structure of the Fifth Constitutional Government (Jornal da República, 7 September 2012), is the central organ of Government responsible for the conception, implementation, coordination and evaluation of the policy defined and approved by the Council of Ministers for the areas of agriculture, forestry, fisheries, and livestock.

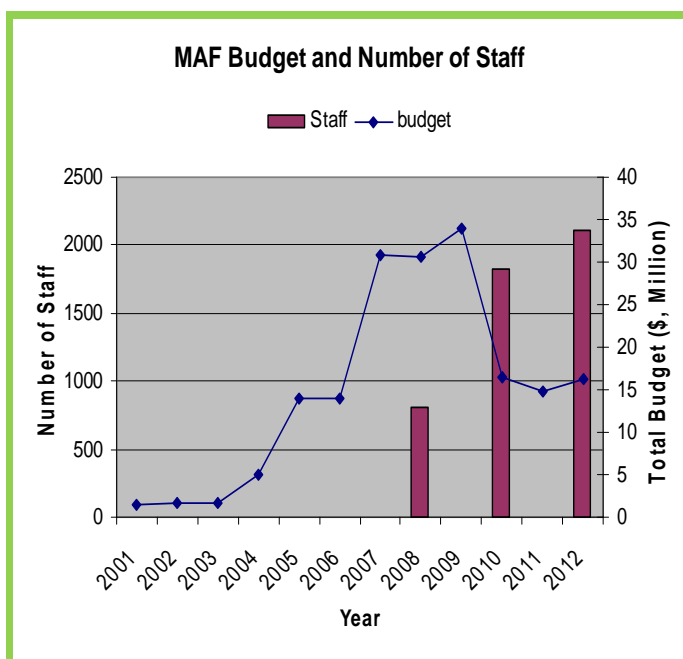
In executing its mandate, MAF also has linkages with other ministries such as the Ministry of Health Ministry of Education; Ministry of State Administration; Ministry of Commerce, Industry and Environment; Ministry of Public Works; Ministry of Transport and Communication; and the Ministry of Tourism. Therefore, close inter-ministerial coordination and collaboration are vital to deliver on the outputs of the SDP and MAF's SP.

There is growing awareness that a number of sectors such as agriculture, education, health, water, energy, and infrastructure are closely linked to agriculture and rural development. Consequently, any agenda to transform smallholder agriculture should follow a multi-sectoral approach and capture the synergies between technologies (seed, fertilizer, livestock breeds, bio-diversity); sustainable water and soil management; institutional services (extension, insurance, financial services); and human capital development (education and health) – all linked with market development (World Development Report, 2008). Such coordination is a huge challenge for MAF.

2.5.6. Declining and Low Investment in Agriculture

MAF's national budget increased significantly during the period 2002-2009 (US\$1.5 million in 2002 to almost US\$ 34 million in 2009). Since then the ministry's budget has declined drastically and is currently stagnating at round US\$ 16 million (see Figure 2.8). Donor's budget declined from US\$ 16.6 million in 2002 to US\$ 3.6 million in 2007, but has started increasing over the last three-four years. In terms of national budget allocations to other ministries in the period up to 2011, MAF's budget was over 95 percent of the budget allocated to the Ministry of Health, while in 2012 it was around 58 percent (MAF Five Year Report 2007-2012).

Figure 2.8: MAF Budget and Number of Staff



Despite the decline in the budget, the number of staff of MAF has increased significantly. In 2005, the total number of staff was 809. In 2010, the number was 1,823 and it is currently a little over 2,100. In 2010, 54 percent of MAF's staff were posted in the districts. The aim is to place 70 percent of staff in the districts.

The implications are that expenditure per staff has declined drastically; a major portion of the budget is now allocated to cover salaries, benefits, maintenance of facilities and equipment, as well as increased donor dependency. Delivering services within

a meager operational budget is a huge challenge for MAF.

It is worth noting that countries in Asia that have managed to successfully transform agrarian economies have consistently devoted a much higher percentage of public expenditure to support agriculture. Publicly-funded research and support services should continue to play a key role since the types of research and services needed to address poverty and food and nutrition security require long lead times which, in turn, necessitate additional investment. Therefore, there is an urgent need to increase the budgetary allocation of Government funds to agriculture.

2.5.7. Land Tenure

Land tenure is crucial for private sector involvement in agriculture. Timor-Leste faces three types of land reform challenges: farm land currently under customary practices, urban land in need of zoning and clear property rights, and Government land that can be used for public and private investment (SDP, p.112). Land registration services for rural areas are currently not

available. Surety of tenure is necessary for farmers to obtain loans from banks to invest in agriculture. Lack of clarity about land tenure presents a constraint on commercial agricultural development, as well as various support services that require access to land in order to be established.

The process of economic empowerment in Timor-Leste starts with improved access to land and vesting secure tenure rights in the people. Until this occurs, private sector investment in agriculture will remain very low. Therefore, the issue of tenure security needs to be urgently addressed.

2.5.8. Expectation of SDP from the Agricultural Sector

The expectations and targets set in the SDP for the agricultural sector in 2015 and 2020 are summarized in Box 2.1.

Box 2.1 SDP targets for the agricultural sector

2015 (Short Term)	2016-2020 (Medium Term)
<ul style="list-style-type: none"> • Tonnage for rice grain (adjusted for losses) will have increased from 37,500 Mt to 61,262 Mt; • Productivity of maize will have increased from 1.25 Mt to 1.54 Mt/ ha; • The Timor-Leste Agricultural Advisory Council will be formulating national policies for the sector and overseeing implementation; • The Timor-Leste Research and Development Institute will be guiding and planning additional investment into research, development and extension for all major agricultural sub-sectors; • A comprehensive irrigation scheme inventory will have been assembled. Dam and groundwater pilot projects will have been developed and the results used to inform further development; • There will have been increased capital investment in key crops such as coffee and vanilla, candlenuts and palm oil; • Traditional fishing activities will have increased and fishing will have increased in the Exclusive Economic Zone; • A Forestry Management Plan, a National Bamboo Policy and Marketing Strategy will be in place; and • Community-based nurseries will be planting one million trees. 	<ul style="list-style-type: none"> • The food supply will have exceeded demand; • The area of irrigated rice will have increased by 40% from 50,000 ha to 70,000 ha; • Average maize yields will have increased to 2.5 Mt/ha; • At least 50% of fruit and vegetables will be grown locally; • Livestock numbers will have increased by 20%; • Coffee production will have doubled following the rehabilitation of 40,000 hectares of coffee plantations; • There will be at least three types of aquaculture activities supporting coastal communities; and • The fisheries sector will be export-based and have expanded to include ocean fishing.

Source: SDP 2011-2030

2.6. Constraints faced by MAF and the Agriculture Sector

Unless the causes of low productivity and poor performance are understood, it is difficult to develop appropriate strategies and programs. The constraints faced by MAF as an organization and its sub-sectors are presented in Annex 1.

Chapter 3: MAF's Strategic Plan 2014-2020

3.1 Introduction

MAF's Strategic Plan for the period 2014-2020 is consistent with the guidelines and targets set by the national Strategic Development Plan 2011-2030. The core strategies are derived from the Mission, Vision and Goals of the Development Objectives articulated in the various government documents. While developing the core strategies (strategic objectives) and its components (specific objectives) consideration was also given to the external environment, needs and aspirations of MAF's various constituencies, strengths and weaknesses as well as the major challenges and constraints faced by MAF and its subsectors. This chapter summarizes the mission, vision, goals, development objectives, guiding principles, strategic objectives, sub-objectives and focus areas of the Strategic Plan.

3.2. Vision, Mission, Goals, Development Objectives and Guiding Principles.

3.2.1. Vision of MAF:

"A sustainable, competitive and prosperous agricultural sector that eliminates poverty and supports improved living standard of the Nation's people".

The vision implies sustained profitable participation in Timor-Leste's agricultural sector by all stakeholders recognizing the need to increase productivity and generate surplus, to build competitiveness and address the key challenges confronting the agriculture sector so as to reduce poverty and improve food security and maternal and childhood nutrition.

3.2.2. Mission of MAF

According to the Decree Law (18/2008) of MAF, its mission is to *"conceive, execute, coordinate, and assess the policy defined and approved by the Council of Ministers for the areas of agriculture, forestry, fisheries, and livestock"*.

Operational Definition

An operational definition is articulated in the National Development Plan (2002) as follows:

"MAF Mission is to efficiently deliver services to agricultural, fishing and forestry communities in Timor-Leste, that support improved productivity, income earning potential and exports that, therefore, support improved social welfare in the rural areas of the nation, taking into account of MAF's human capital and financial resources" (East Timor National Development Plan, 2002).

The mission statements of MAF's existing directorates are summarized in Annex 2.1

3.2.3. Goal and Policy Objectives

Goal of MAF:

Based on the national Strategic Development Plan 2011-2030, the goal of MAF is: *“to improve national food security, reduce rural poverty, support the transition from subsistence farming to commercial farming of crops, livestock, and fisheries, and promote environmental sustainability and conservation of Timor-Leste natural resources”*.

Policy Objectives

- a. Improve the level of food security of the rural population, reduce hunger and malnutrition and raise self-reliance;
- b. Increase value addition of agriculture, fisheries and forestry products by fostering output processing and marketing;
- c. Achieve sustainable production and management of natural resources;
- d. Contribute to the balance of trade by gaining revenue from commodity exports both traditional and new and by substituting imports; and
- e. Increase income and employment in rural areas.

These policy objectives are articulated in the Program of the Fifth Constitutional Government, 2012-2017.

3.2.4. Guiding Principles

The above strategic goal and the development objectives will guide the efforts all the partners in delivering a range of strategies and programs designed and implemented in accordance with the following guiding principles and value statement:

- a. Secure availability of sufficient and affordable food;
- b. Enhance the capacities of rural communities for self-reliance;
- c. Deliver essential services to rural communities together with the private sector and non-governmental organizations in an equitable manner;
- d. Enable and facilitate agricultural development and natural resource management;
- e. Create an enabling environment for rural producers and the private sector and keep direct government involvement to a minimum with focus on public good-type of services;
- f. Where private benefits occur introduce cost-recovery mechanisms over time;
- g. Strengthen the integration between agriculture, livestock and natural resource management in rural planning;
- h. Use participatory processes when working with communities;
- i. Cater for the specific needs of women, children, youth and disadvantaged groups;
- j. Build in environmental sustainability as a genuine element in all programs;
- k. Protect designated habitat and species;

- l. Use resources efficiently in a manner that prevents waste and maximizes community benefit from their use;
- m. Be transparent and accountable;
- n. Form strategic partnerships in service delivery;
- o. Use a value chain approach to develop commodity markets; and
- p. Focus on innovation.

3.3. Strategic Objectives of the Plan

Past experience globally has demonstrated that to achieve sustainable growth and development of the agricultural sector, the following five prime movers need to work in tandem:

a. Technology

New technology for large and small farmers and other targeted beneficiaries generated from investments in research by public and private sector. The new technologies have to continuously meet the changing needs.

b. Human Capital

Improved human capital at all levels – professional, managerial, technical and artisanal – achieved through investments in schools, colleges and faculties of agriculture, forestry and natural resources (including fisheries) as well as on-the-job training and skills development.

c. Physical and biological infrastructure

Sustainable growth in physical and biological infrastructure, through investments in roads, dams, irrigation systems, storage structures, rural electricity, information system and genetic improvements in crops, livestock, tree crops, and fisheries.

d. Institutes

Research, extension, credit, marketing and information institutions that are effectively service small holder producers and fishers.

e. Enabling Policy and Institutional arrangements

An enabling political environment with sustainable budgeting, commitment to agriculture, good governance, institutional arrangements and appropriate land reform, pricing, marketing and trade policies to facilitate agricultural growth, food security and broader economic development.

In pursuing an agricultural development strategy, it is important to acknowledge two characteristics of the primary drivers. First, no primary driver can alone stimulate agricultural growth on a sustainable basis. Second, long-term investment is needed to strengthen them. This knowledge, along with the national SDP 1011-2030 and the situation analysis guided the process of identifying strategic objectives for MAF.

For the period 2014-2020 MAF will pursue five mutually reinforcing Strategic Objectives (strategies) to deliver on the national SDP:

- a) Sustainable increase in production and productivity of selected crops, livestock species, fisheries and forestry subsector;
- b) Enhance and improve domestic and export market access and value addition;
- c) Improve the enabling environment;
- d) Ensure that MAF and related agencies are strengthened, configured and equipped to deliver on the national SDP 2011-30 and MAF's Strategic Plan 2014-20; and
- e) Enhance sustainable resources management, conservation and utilization.

The underlying logic of the strategy is that if the long run productivity of existing and emerging enterprises can be improved (creating surplus) and farmers and fishers can be helped to move up the value chain through public investments in infrastructure, marketing and value addition activities, then the rural income and livelihood will improve. Associated targeted investments around staple food production and marketing will deliver improved food security and nutrition at household level. The agriculture sector can then move towards greater profitability and greater competitiveness. The enabling environment and organizational strengthening will facilitate and accelerate this transformation and ensure that they are accomplished without further degrading the nation's natural resource base and biodiversity.

3.4. Strategic Objective 1: Sustainable increased in productivity and production of selected crops, livestock, fisheries and forestry sub-sectors.

Agriculture in Timor-Leste is typified by low productivity. Both *intensification*: increased productivity per unit (e.g. per hectare or per head of cattle) and *expansion*: greater numbers of units (e.g. number of hectares planted or numbers of livestock) are required to increase the overall production and create the necessary surplus for take-off. The key to more efficient production and improved competitiveness lies in the availability and use of production inputs and application of improved production and post-harvest technologies to reduce losses. Increased productivity and efficiency largely depend on the use of improved technologies.

Logic of MAF's Strategic Plan

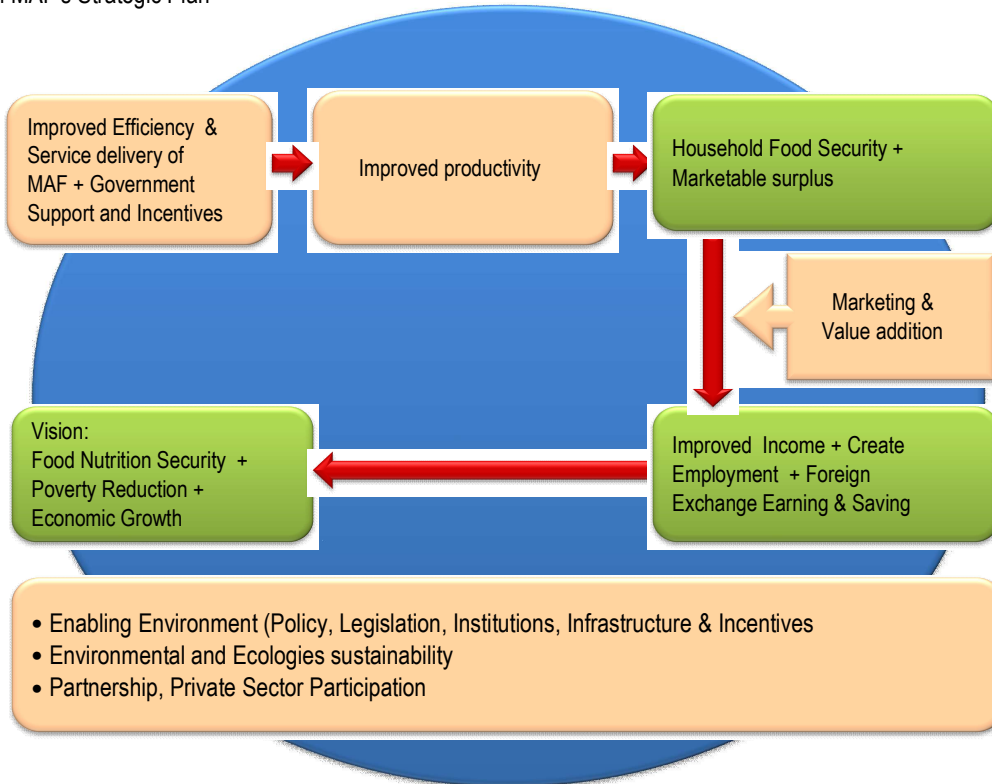


Figure 3.1: Logic of the Strategic Plan

3.4.1. Specific objective 1.1: To enhance the contribution of agricultural research to sustainable agricultural productivity, food security and reduced poverty and malnutrition.

Publicly-funded research will continue to play a key role in enhancing productivity. This sub objective will focus on three key areas: (a) generating new technologies, practices and strategies for traditional and emerging crops or enterprises, including germ plasm collection, characterization, and evaluation (given due consideration to climate change); (b) improved uptake of new technologies and knowledge; and (c) strengthened effectiveness of National Agricultural Research and Development. This includes the creation of Timor-Leste's Research and Development Institute, which will be responsible for guiding and planning additional investments into research for development, extension for all major agricultural subsectors and establishment of a livestock production research centre.

3.4.2. Specific objective 1.2: To increase farmers' access to relevant information, knowledge, technology, and build the skills to apply them through effective, efficient, sustainable and decentralized extension services.

The goal of this sub objective is to: (a) improve uptake of new technologies and information; (b) develop agribusiness at the farm level; and (c) connect primary producers with knowledge and service providers. This includes improving the agricultural education system towards demand and practice orientation and improved professionalism, enhancing the skills of extension workers, subject matter specialist and primary producers, establishment of a continuous skill training system along the value chain, improved management of agricultural extension and efficient execution of extension campaigns.

3.4.3. Specific objective 1.3: To reduce losses through improved control of weeds, pests, vectors and disease.

The goal of this sub objective is to support the improvement of food supply at the household level by controlling common weeds pest, diseases, vectors, and parasites that contribute to loss of production in the field and during storage.

The key focus areas are: (a) strengthening diagnosis of pest, diseases, vectors and parasites; (b) administering and operating quarantine programs; (c) surveillance and reporting; (d) sanitary and phyto-sanitary regimes including weed management; (e) coordinating, monitoring and evaluating programs and policies; and, (f) legislation and regulations on veterinary public health, quarantine and animal diseases.

3.4.4. Specific objective 1.4: To develop water resources for agricultural production on the basis of sustainable irrigation, water for livestock and aquaculture.

The goal of this program is to increase agricultural production through more efficient use of available water. Focus areas will include rehabilitation, extension and protection of irrigation systems, aspects of water use efficiency and ground water exploration and production, including popularization of tube well. Proposed activities include initial feasibility studies of dams and a comprehensive inventory of irrigation system including small scale community irrigation and ground water exploration for tube wells development.

3.4.5. Specific objective 1.5: To increase the use of technologies that enhance labor productivity including appropriate mechanization and other farm management related practices.

The goal of this program is to enhance labor productivity using appropriate technologies. The program will focus on: (a) developing and promoting appropriate technologies including animal

traction and mechanization; (b) promoting mechanization for increased rice production; (c) developing public-private partnership and establish modalities for financing private enterprise to provide services; and (d) supporting a mechanization and extension centre.

3.4.6. Specific objective 1.6: Accelerate production of selected strategic enterprises on the basis of specialization and agro-zoning.

One of the principles of agricultural development during this plan period will be to pursue a commodity-focused approach. When applied to selected commodities this approach has yielded good results in many countries. This is in line with the approach taken in the SDP where specific targets are set for selected commodities.

SDP 2011-2030 has identified a number of enterprises where MAF will make special effort to accelerate production in order to ensure food security and rural livelihood. The Fifth Constitutional Government Program (2012-2017) puts emphases on three types of enterprises: food and horticultural crops that contribute to food and nutrition security; enterprise that contribute to import substitution; and traditional and new export crops or enterprises that contribute to balance of payments. This sub-objective deals with those enterprises.

Component 1: Food and horticulture crop production

The goal of this program is to increase productivity, overall production, and quality of important foods crops. Included in this component are: rice, maize, cassava, sweet potato, mung beans, groundnuts, fruits such as rambutan, peaches and plums, and high value vegetables with potential for import substitution. The focus will be on integrating crops and livestock production along with adaptation and promotion of proven, profitable and sustainable farming systems featuring efficient use of rainfall, soil and irrigation water.

Program activities will include on-farm demonstration of certified seed use, improved production practices, cropping systems and crop diversification, and variety testing and seed/planting material multiplication of newly selected varieties.

Component 2: Industrial crop production

The goal of this program is to enhance and develop industrial crops that will contribute to income earning opportunities and employment in rural areas and export earnings for the country. The program will focus on crops that involve value-adding activities. This will cover the traditional crops such as coffee, coconut and candlenut as well as emerging crops, such as cocoa, black pepper, cashew nuts, vanilla, hazelnuts, ginger, cloves and various other condiments.

The focus is on: (a) seed/seedling multiplication; (b) on-farm demonstration of best practices in orchard management; (c) processing of value-added products; and, (e) training of farmers in nursery planting operations, and other best management practices.

Component 3: Fisheries production

Despite vast potential the current annual per capita consumption of fish is very low - estimated at 6.1 kg/capita/year (MAF, 2012) though this varies widely between districts (from 1.8 kg in Bobonaro to 8.6 kg in Oecusse). This is much lower than the global average (17.3 kg/capita/year); as well as the average for the least developed countries (9.8 kg/capita/year); and low-income food-deficit countries (8.8 kg/capita/year). The fisheries sector has the potential to contribute significantly to the food and nutritional status of Timor-Leste. Therefore, immediate priority should be given to developing a commercial fishing industry as well as to promote the small scale and commercial inland aquaculture and consumption of fish and fish products.

The goal of this program is to lead the development of the nations' aquatic resources in a sustainable manner, while providing opportunities for coastal and inland communities to benefit from such developments including improved nutrition. The focus will be on: (a) training for capacity building; (b) developing appropriate administrative protocols to ensure coordination of all fisheries program activities; (c) maximizing the value of the catch by improving fish handling, transport, storage, processing and marketing; (d) updating the database of fishing capacity held at fisheries and marine environment; (e) inventory of sustainable sites for the establishment of aquaculture activities in the coast; (f) extension of backyard aquaculture using springs or dug ponds that conserve runoff water, and (f) improving monitoring and protection of fisheries by enforcing the existing laws and decrees.

The activities of this program will be grouped under three themes: (a) fisheries and marine environment management; (b) fisheries industry development; and (c) commercial and small scale aquaculture. In the National Aquaculture Development Strategy (MAF 2012) a two pronged approach to fresh water aquaculture development is proposed: (i) supporting the emergence of small and medium aquaculture business enterprise in suitable agro-ecologies, and (ii) advancing Integrated Agriculture-Aquaculture (IAA) systems around small-scale water storage systems among poor households in less favorable, resource-poor locations. Emphasis will be placed on the development of aquaculture based on low-cost technologies that are environmentally benign, socially acceptable and economically viable. The SDP proposes the introduction of at least three types of community-based aquaculture activities to coastal communities by 2020.

Component 4: Livestock production

The goal of this program is to increase livestock-based food production, animal protein consumption and income of smallholder producers. Focus will be on: (a) preventing and eradicating livestock diseases through vaccination services; (b) improving management of pigs and poultry under traditional systems; (c) increasing cattle production and management practices; (d) building abattoir and butchering units (slaughter house) and rehabilitating existing abattoir; and (e) establishing a cattle breeders' association.

Component 5: Forestry production

The goal of this program is to develop appropriate policies, legislation and management strategies as the basis for the formulation and implementation of forestry management plans to facilitate the sustainable management of forest resources in Timor-Leste. Efforts will be made to encourage the participation of rural communities and other stakeholders in all aspects of forest resource management in the nation. The key focus areas are: (a) reforestation and forest rehabilitation; (b) forest protection and forest resources management; and, (c) forest production and utilization.

Reforestation, watershed management and establishment of protected areas are potential key development activities in the forestry sector. Another key activity that has potential is agro-forestry, and intercropping with selected economic and fruit trees and orchard development.

3.5. Strategic Objective 2: To enhance and improve market (domestic and export) access and value addition

Access to market - both domestic and export (including niche markets) - is crucial to realize the benefit of surplus production. In addition every effort should be made to encourage the partial processing of primary products to increase the value of the producers share of the consumer price for the final products, as well as substituting part of the imports.

The aim of this program is to enhance market access and profitability through sustained competitiveness and value addition, and effective and efficient service delivery in the agricultural sectors' input supply, agro processing, marketing and imports substitution.

For small producers to be empowered to play a constructive role in the development and transformation of the agricultural sector they need access to inputs and support services. It is important to improve and expand the existing support services to meet the needs of all producers.

3.5.1. Specific objective 2.1: To develop and implement safety standards and quality control assurance across crops, livestock, fisheries, and forestry products.

The quality of agricultural commodities produced in Timor-Leste is generally quite poor. This reduces farm incomes and competitiveness in both domestic and international markets. Food safety is another issue of concern.

This program will focus on grading and quality assurance as well as the safety standards of both inputs and outputs. Quarantine and quality control are essential in order to develop new agricultural industries particularly those with export potential.

Improving the capacity of MAF for the enforcement of the safety standards and quality assurance will be a key component of this program.

3.5.2. Specific objective 2.2: To promote access and use of high quality inputs, planting, stocking materials, and fishing equipment.

Agriculture in Timor-Leste is characterized by low application of modern inputs resulting in low yields. The focus of this program is to raise awareness amongst producers of the value of adopting high quality inputs such as fertilizers, seeds, planting materials, and equipment - and ensuring they have access to them. This may involve strengthening the regulatory framework for input business, improving investment, improving the capacity to supply, and/or building the capacity of the institute involved in input supply.

3.5.3. Specific objective 2.3: To promote the diversification (including exploitation of niche markets) and value addition activities within the sub sectors.

Timor-Leste is an exporter of mainly unprocessed commodities. Therefore, this program will study the value chains of all major commodities, identify and promote options for value addition and also exploit the opportunities for specialized niche markets (e.g. organic products). This may also call for increased public-private partnerships in agro-processing; generating and disseminating profitability, information for enterprise selection; and developing capacity for business development services.

3.5.4. Specific objective 2.4: To provide the necessary rural market infrastructure including appropriate structure to improve post-harvest losses.

The goal of this program is to improve strategy and market infrastructure to help preserve the quality of produce marketing and processing, to reduce marketing cost, and to help producers to benefit from commercialization. This program will focus on: storage structures; post-harvest handling; promoting and/or improving market building and infrastructure; abattoirs and butchering units; and establishing collection points. Attempts will be made to initiate pilot projects on rural market infrastructure improvement and scaling up best practices for rural market development.

3.5.5. Specific objective 2.5: To promote collective marketing, support to Farmers Groups and Farmers Associations.

Collective or group marketing is a logical and simple way to empower producers. By working together producers identify member needs, consolidate their demands, aggregate their economic power and address market failure.

The goal of this program is to facilitate the marketing of agricultural inputs and products through farmer groups and farmers associations. Focus areas are: (a) marketing and trading of agricultural products; (b) sales/acquisition of agricultural inputs (seeds, fertilizers, credit,

pesticides, farm tools, veterinary drugs, nets and fishing equipment, etc.); (c) transport of agricultural products from farm site to markets; and, (d) dissemination of market information.

Agriculture cooperatives are an important structure for supporting smallholder producers. Establishment of collective action and cooperatives in the various subsectors should be encouraged. Support to marketing cooperatives can be a part of this effort.

3.5.6. Specific objective 2.6: To promote private sector engagement in input supply and product marketing including processing and value addition.

The SDP anticipates that the private sector will be the primary source of growth in income and employment in rural areas of Timor-Leste. Private sector has a vital role to play in the development of agriculture (including fisheries and forestry) in areas such as rural infrastructure development, transport, storage, manufacturing and processing, marketing, contract services and the supply of inputs.

The focus of this program is to create an enabling environment for private sector participation, facilitating public-private partnership, and providing the necessary skills and support.

3.6 Strategic Objective 3: To improve the enabling environment (legislation, policy, institutions and infrastructure).

Good policies and effective implementation are crucial for the sector. The goal of this program is to provide sound policy analysis and advice, and contribute to the effective implementation of critical policy issues confronting the agricultural sector.

This strategic objective deals with policies, institutions, legislation, and necessary infrastructure needed to facilitate the agricultural transformation process. Policy development and institutional arrangements are extremely important as agriculture, fisheries, and forestry development rely heavily on development and implementation of policies in a wide range of areas.

3.6.1. Specific objective 3.1: To establish functional, clear and accountable policy and legislative frameworks and the capacity for policy analysis and implementation.

The goal of this program is to identify and analyze the critical policy constraints affecting the agricultural subsectors (including agricultural education).

Some of the key agricultural policy areas to be analyzed include: import substitution; export promotion; irrigation and water allocation; legislation and regulations on veterinary public health; quarantine and animal diseases; support to certain production activities; inputs subsidies; and marketing arrangements.

3.6.2. Specific objective 3.2: To ensure coordination responsibilities are undertaken in a coherent manner enabling improved implementation & management of sector policies & programs.

There is a critical need to follow-up implementation of new and existing policies to provide feedback to policy makers and to identify and address constraints related to the implementation of policies.

As a matter of priority there should be a critical review of the policies that are being implemented to assess their effectiveness and draw lessons for future planning.

3.6.3. Specific objective 3.3: To establish and maintain a functional agricultural statistics system providing timely and appropriate information to sector stakeholders and assisting the planning and management of MAF.

The various reports on agriculture highlight inconsistencies in the data reported. There remains some doubt about the veracity of data that MAF has at its disposal. This presents a serious constraint in planning and development of the sector.

Market opportunities are not often developed due to lack of information. The quality, cost and timely availability of market information seriously affects the competitiveness of many participants in the agricultural food system. In addition, market and price risks can also be reduced through good and timely market information.

The goal of this objective is to devise means of collecting, managing and distributing good quality data to the relevant stakeholders to facilitate better planning and decision-making. This will also contribute to the development of a national food and agricultural statistic system.

3.6.4. Specific objective 3.4: To develop capacity for improved decision-making in the planning and budgeting process by providing accurate and up-to-date climate information and analysis.

Improved climate information will be a key input to the planning of adaptation strategies in the future.

This program will focus on identification of climate impacts, vulnerability and coping measures, improved climate forecasts, and improving the capacity of individuals to integrate climate change issues into planning.

3.6.5. Specific objective 3.5: Develop the necessary early warning system and weather monitoring to help mitigate the impact of and adapt to climate variability on the agricultural sector.

Agriculture by definition is an industry confronted by risk in the form of climate variation, pests, diseases, price risk as well as natural disasters such as drought, floods and cyclones.

A comprehensive risk management strategy and an early warning system that includes adequate access to and utilization of timely, accurate, relevant and free information about weather as well as mitigation strategies is critical to combat the effects of climate variability.

Strengthening of Geographical Information System (GIS), remotely sensed natural resource and land use information services to provide accurate and reliable information for informed decision-making including district and Suco development planning will be important parts of this program.

3.7. Strategic Objective 4: To ensure that MAF and related agencies are strengthened, appropriately configured and equipped to deliver on the SDP 2011-30 and MAF Strategic Plan (2014-2020).

This strategic objective aims to transform MAF and related agencies to function as a modern, efficient, client-oriented, impact-driven, accountable organization equipped to provide relevant services and deliver on the SDP and MAF Strategic Plan. Within MAF, a framework of good governance to build a coherent, customer-oriented, and transparent agricultural public sector should be a top priority to ensure a sound foundation for reaching the strategic goal. MAF needs to have the capacity and operational mechanisms to deliver on the SDP and MAF Strategic Plan.

3.7.1. Specific objective 4.1: To review the organizational structure, governance mechanisms and modalities of operation to ensure MAF and related agencies are functioning as relevant, modern client-oriented organizations.

This objective is focused on developing appropriate structure and governance mechanisms to implement the MAF Strategic Plan. Good governance and appropriate structure should ensure that institutions and organizations (as well as individuals who work within these organizations) serve the intended purpose effectively and efficiently under all conditions, and that procedures in place facilitates appropriate transparency and accountability and provide the necessary incentives for enhanced performance.

This component has four core functions: (a) to determine the optimal organizational structure for MAF Strategic Plan; (b) to assist in effective management to ensure monitoring, sustaining, fine tuning and facilitating all activities and procedures; (c) to change the existing organization and institutions or bring about newer ones to close the gap between the existing and “optimal”

structure; and (d) based on this review, to revise the existing governance mechanism and modalities of operation of MAF. This should also aim to enhance internal co-ordination and communication.

3.7.2. Specific objective 4.2: To develop and implement a manpower development and capacity strengthening strategy and program to enhance the productivity of MAF staff.

The most critical resource of any organization is its human resource. Although the number of staff in MAF has increased significantly, the competency and skills required to deliver on MAF's Strategic Plan are still considered inadequate. The newly-appointed Suco Extension Officers (SEO) have very limited technical and extension skills and negligible operational budget.

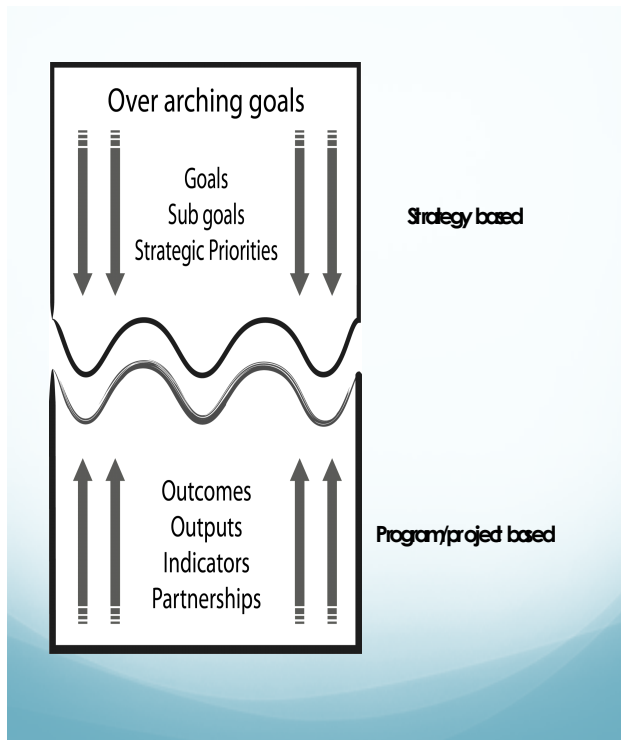
Many developmental efforts have failed in the past due to lack of human capability. Based on a core competency analysis, clear job descriptions and training needs assessment, MAF should develop and implement a comprehensive capacity strengthening strategy. This strategy should focus on both long term degree-oriented training as well as short term skills building and retooling of the existing staff, both of which are vital for enhanced productivity.

3.7.3. Specific objective 4.3: To develop and implement a knowledge management and communication strategy to facilitate effective decision-making and accountability.

This strategy will focus on two important aspects, namely, knowledge management and communication. The world economy is rapidly being transformed into a knowledge and network economy. The aim of the knowledge management component is to build an integrated and systematic approach to identifying, managing, and sharing agricultural knowledge and information. Key aspects will include the development of guidelines and institutional framework and processes for knowledge management in agriculture.

An effective communication mechanism to widely distribute and share outputs, outcomes, lessons learned and best practices as it relates to the agricultural innovation system(AIS) is vital to raise the visibility, impact, and accountability of MAF's investment. MAF should also develop and disseminate targeted materials for key stakeholders and knowledge users including policy makers. Given the current funding scenario there is an urgent need for MAF to develop and implement a knowledge management and communication system.

3.7.4. Specific Objective 4.4: To develop and Implement an M&E Strategy



The ability to define, measure and evaluate performance is an essential condition for an organization's improvement and accountability. The mechanisms currently in place to review and evaluate the performance of MAF are the various reports largely focused on activities, finance, and to some extent, output.

Very little effort is being made to monitor and report the outcomes and impact. There is very little evidence to show that monitoring information is used for management, planning or decision making. Therefore MAF should use the SDP and the MAF Strategic Plan as a guide to develop a strategic results framework and an integrated system (see figure 3.2) with the relevant set of indicators,

Figure 3.2: Integrated M&E System

leading to a needs-based M&E system. This should also identify the data collection methods, frequency, responsibility for data collection and how it will be managed and used.

Each project should have its own results framework with an M&E component integrated into project planning and implementation. The log-frame of the Medium-Term Operational Plan should be operationalized so as to develop a needs-based M&E system. This system should cater for needs of all decision makers at MAF.

3.7.5. Specific Objective 4.5: To review the HR policy and practices to provide the necessary skills and incentives to enhance the performance of MAF staff.

Along with the manpower development plan, the human resource management strategy and policy should be reviewed and updated to ensure staff retention and provide the necessary incentives, including improvement in the conditions of service that enhance the productivity of MAF's human capital.

3.7.6. Specific Objective 4.6: To develop and implement a partnership strategy for MAF.

Responding to the diverse needs and multifaceted challenges of the sector requires the cultivation of strategic partnerships. Thus the implementation of the medium term plan should be grounded through strategic partnerships — a partnership based on common goals and shared values that builds trust and fosters a culture of innovation and learning from experience. Building a collaborative culture within an organization is very challenging. The partnership strategies should focus on internal as well as external collaboration. External partnership should focus on inter-governmental relations, public-to-public and public-to-private partnership, partnerships with farmer and civil society organizations, non-governmental organizations and development partners.

The partnership strategy should clarify the roles and responsibilities between national and district directorate of agriculture and local governments; establish the framework to guide and manage the formulation, alignment, implementation, monitoring and evaluation of policies and programs; establish a framework for integrated coordination of budget planning and expenditure; introduce an information management system; introduce a framework and norms and standards for human resources development plan and implementation; and facilitate the organizational capacity building for national and district directorates and the staff of the sector.

The strategic partners will also have to determine how the resources from each partner are committed and managed in the process of implementing the various strategies, programs and projects. Aspects of establishing and strengthening national and international network co-operation should also be addressed.

3.7.7. Specific Objective 4.7: To develop and implement a resource-mobilization strategy to ensure adequate and sustainable funding for MAF.

The success of MAF largely depends on the success with which funding is mobilized that enables services to be delivered by MAF. Sustainable funding is vital for MAF to deliver on its mission and achieve the SDP targets.

Achieving the ambitious targets set by the national SDP and the effective implementation of MAF's Strategic Plan requires additional financial and human skills. The current allocation of funds from the Government of Timor-Leste is grossly inadequate to deliver on the MAF Strategic Plan as almost all the budget is used for staff salaries and benefits, operational costs, and maintenance of equipment and facilities. Increasing the current budget allocation will definitely enable more effective service delivery towards achieving the SDP targets.

To a large extent MAF depends on donor support to implement its field activities. There is also a strong indication that the absolute value of the donor funding may not increase significantly. While every effort should be made to solicit more funding from government, MAF should

identify innovative means to mobilize additional resources. Therefore, MAF should develop a resource mobilization strategy and aggressively mount a resource mobilization campaign to implement its Strategic Plan.

3.8. Strategic Objective 5: Natural Resources Conservation and Management.

By nature agriculture is based on the utilization of the nation's natural resource base, i.e. its land, water, forest, marine resource and bio-diversity. Managing the connections between agriculture, natural resources conservation and environment is an integrated part of utilizing agricultural development to enable national development.

While natural resources conservation and sustainability should be an explicit consideration in every project design and implementation, additional measures may be taken to address ecological sustainability issues. This issue is also implicitly addressed in other strategic objectives and program areas.

This strategy will impact on land use, zoning of high-potential agricultural land, the preservation of sensitive land areas, biological diversity and water resources.

3.8.1 Specific Objectives 5.1: Sustainable natural resources management and utilization.

The objective of this strategy is to enhance the capacity of the primary users of natural resources to utilize them in a most productive and sustainable manner so the natural resource base is available in an equal or improved state to serve the needs of future generations.

In managing natural resources recognition should be given to traditional and local systems of natural resources management and assist communities to get formal recognition of their locally agreed community regulations which are in operation (such as Tara Banda).

This program will focus on two aspects. The promotion of the capacity of local communities to protect and manage their resources by (a) developing and implement community-based local participatory land use planning to enable each community to identify, map and agree on different classes of land capability and the appropriate land use for each, important sites and/or key species and (b) improving the knowledge of marine and coastal habitats. The second area is to promote the co-operation of regional parties to improve the joint management and conservation of the marine environment and transmigration issues including the protection of Timor-Leste exclusive economic zone and establish international agreements to enhance the conservation and sustainable use of Timor-Leste's natural resources.

3.8.2 Specific Objective 5.2: Increase the knowledge, protection, and utilization of the bio-diversity within Timor-Leste.

The focus here will be on the conservation and utilization of genetic bio-diversity of plants, animals, terrestrial and marine biodiversity.

3.8.3 Specific Objective 5.3: Development and dissemination of environmentally friendly agricultural industry practices.

When using the natural resources for economic transformation, the issue of sustainability should be a key consideration. Every attempt will be made to develop industry best practices that are environmentally friendly. Integrated Crop Management (ICM); integrated agriculture-aquaculture system; organic farming; and introducing more robust farming systems through well- coordinated rotation systems are key components of this program.

3.8.4 Specific Objective 5.4: Promote the conservation of national and cultural heritage.

This program will focus on national parks, protected areas, as well as other heritage sites of important cultural value to the society and nation. This could be accomplished through collaboration with other relevant ministries.

The strategy development process ends with the clear definition of mission, vision, goal, guiding principles, identification of the strategic objectives and its components including the focus areas. Some of the key considerations for the implementation of the MAF's Strategic Plan 2014-2020 are outlined in the next chapter.

Chapter 4: Implementation of the MAF Strategic Plan 2014-2020

4.1. Introduction

The MAF Strategic Plan 2014-2020 defines the vision, mission, strategic objectives, and key priority areas and the sub-objectives to be implemented by the sector. It does not cover the detailed activities that comprise the implementation plan for each of the sub programs. These aspects will be outlined in detail in the Medium-Term Operational Plan (MTOp). An operational action plan cannot be developed without the full participation of those who are charged with the responsibilities for its implementation and delivery of results and this requires detailed information.

The key steps in the implementation of the Strategic Plan and the complementary strategies that need to be in place are discussed in this section.

4.2. Achieving MAF's Strategic Objective

The key steps that need to be completed in order to operationalize and implement MAF's Strategic Plan are outlined in this section. The key activities are the preparation of the MTOp, Five Year Investment Plan (FYIP) and the Annual Work Plan and Budget.

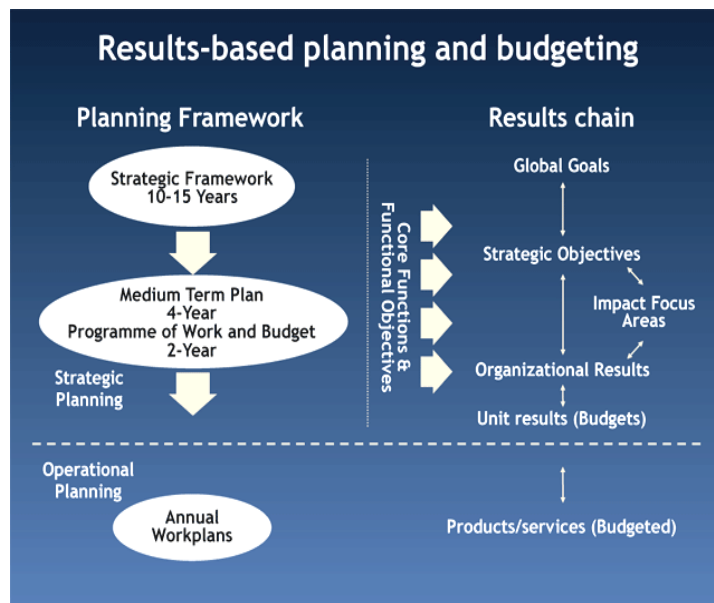


Figure 4.1 Results-based planning and budgeting

The relationships between these activities are shown in figure 4.1. This process is also an attempt to integrate the planning logic, performance logic and the impact logic within a single framework.

4.2.1. Wider communication of the Strategic Plan

The first and most important step in the implementation process is to communicate this strategy as widely as possible. This document should be read widely and the information on the implementation plan should be shared on a regular basis with key stakeholders to enable them to meaningfully contribute to the implementation of this strategy.

4.2.2. Priority Setting

The situation analysis in chapter 2 identified a large number of constraints. It is impossible to address all of these simultaneously with limited resources. Setting priorities is key to the rational process of allocating the scarce resources of MAF. In practice, this process of priority setting involves a combination of supply and demand-oriented methods, intense consultation with various stakeholders and a vigorous resource mobilization program. Therefore the second step in the implementation process is to set priorities under each identified sub-program. It is important to make sure that this process is all-inclusive and participatory. There is a need for each directorate to review and prioritize on-going and planned activities to ensure that they are in line with the priorities of SDP and MAF's SP.

Currently in each district, the primary producers are engaged in a diverse set of activities. The current production system does not give adequate attention to the comparative and competitive advantage based on the agro-climate and socio-economic condition of the districts. Spreading the efforts of MAF very thinly across all enterprises produced by farming families may not have significant impact. Therefore, there is a need to revisit the priorities of each district to identify the key enterprises (specialization) that should be the initial focus of MAF's investments. In the priority setting process, one has to reconcile district priorities and the national priorities based on the SDP. This district level priority setting should be undertaken as a first step in reorienting the investment of MAF. Based on the analysis, production zones can be determined according to land use potential, agro-climatic conditions, current land use and socio-economic viability and competitiveness. Target investments including extension campaigns should be based on these production zones to realize visible impacts. While MAF is focusing on selected enterprises, every effort should be made to establish strategic partnerships with development partners, NGOs and civil society organizations to address the priority constraints important in each district.

4.2.3. Development of a strategy-driven Medium Term Operational Plan 2014-2018.

The vision, core strategies, and sub-programs proposed in the MAF Strategic Plan require partners to have an action plan, key performance indicators, service delivery targets and standards, monitoring and evaluation systems, and a time line to realize the proposed plan.

The Medium Term Operational Plan (MTO) should clearly define in detail all the strategic initiatives identified during the priority setting process. This includes the specific action steps, projects and activities that are envisaged under each strategic sub-objectives; identification of those who are responsible for their implementation (institute and position); identification of the partners and entities that need to be involved; identification of resources required (in manpower, money and machines), the timing, location, performance indicator as well as the accurate cost.

The Operational plan should also ensure there is proper coordination of activities and goal orientation among the various entities and partners involved in the implementation; capacity building at all levels; sound planning and implementation processes in place (to ensure projects

are started and completed on time); a proper sequencing of implementing actions; and monitoring of progress to ensure proper management of implementation process and accountability.

4.2.4. Development of a Five Year Investment Plan 2014-2018

A Five Year Implementation Plan (FYIP) will be developed based on the MTOP. The aim of this exercise is to ensure that the planned activities have costs that are properly estimated and adequate funding support is provided for the efficient and effective provision of critical agricultural public goods and services to the various client groups. A full cost budget will then be prepared on an annual basis. As part of the process, inputs from donors will be sought to establish the targeted external support for operations that could be anticipated during the plan period. If the entire planned program was to be implemented, then the budget gap should be provided by the national government and/or other sources. This exercise will enable MAF to make a sound case for requesting increased budgetary allocation from the Ministry of Finance. It is also important to clearly identify the outputs and milestones for the proposed investment. As part of this process, each of the sub-programs' budgets will be operationalized according to the priorities of each sub-program. The units responsible for implementing the activities must also be involved in this exercise.

4.2.5. Development of Annual Work Plan and Budget

The 2014 Annual Work Plan and Budget will be formulated based on the Five-Year Investment Plan. In every subsequent year, based on the monitoring and evaluation of activities, the investment plan for that particular year should be revised to respond to the changing context, needs and priorities of the clients to keep the plan dynamic and relevant. There is a need for a robust round of prioritization each year as part of decision making with respect to short-run investment.

To conclude this section, the Medium Term and Annual Work Plan and Budget should be guided by the Strategic Objectives and sub-objectives set out in the MAF Strategic Plan and the priorities identified by the various directorates and districts in consultation with the key partners and stakeholder. However, the actual portfolio of activities implemented in any given year will be largely determined by the available resources.

4.3. Complementary Strategies

In order to deliver on the Strategic Plan, MAF has to develop a number of complementary policies and strategies as an integral part of plan implementation. This includes an M&E Strategy, Manpower Development and Capacity Strengthening Strategy, Resource Mobilization Strategy, Knowledge Management and Communication Strategy, Human Resource Management Policy and Strategies, and Partnership Strategy. The details of these complementary strategies are discussed under the Strategic Objective 4 – the organizational strengthening of MAF.

4.4. Cross cutting issues - Gender, Environmental Sustainability, Climate Change and Youth

4.4.1. Gender

MAF already has a gender policy. MAF should make every effort to mainstream gender in the routine process of agricultural service delivery: project development, implementation, monitoring, evaluation and reporting processes. All staff should be equipped with skills on gender analysis and participatory processes. MAF needs to establish a mechanism for needs assessment of gender responsive technologies and services.

4.4.2. Environmental sustainability

Environmental sustainability is one of the key social responsibilities of MAF and its partners. Environmental sustainability should be considered as one of the explicit criteria in selecting and implementing programs and projects.

4.4.3. Youth

It has been estimated that more than 15,000 youth, mainly in rural areas, finish school every year and look for livelihoods in agriculture and related agro-industries. There is also the rural-urban migration of this group. Every effort should be made to transform agriculture into a profitable business. To retain youth in the rural area agriculture must be profitable and investments should be made in agricultural education and rural support services to provide the necessary skills. Priority should be given to investments in rural agro-based industries.

4.4.4. Climate Change

Climate change is real. It has effects on agricultural seasons, production systems as well as strategies (coping and mitigating) adopted by the agricultural communities. Hence, in planning and setting priorities for MAF's activities climate change effects should be mainstreamed. In addition, attention should be paid to develop sound mitigation strategies and technologies.

4.5. Monitoring and Evaluation of Programs, Projects and Activities

Monitoring and Evaluation (M&E) of programs, projects and activities are critical for the implementation process. M&E assists the organization to detect any implementation problems early on and to take the necessary corrective actions.

During monitoring, necessary data can be collected on output, outcomes and impacts, which facilitate the assessment of the investment. M&E should be an integral part of the project and program planning and implementation. An operational log-frame of the MTOP will facilitate the M&E process. Adequate resources should be allocated for this purpose.

For effective planning, accountability and learning from experience, MAF should institutionalize an annual planning and priority setting process across the directorates. During this process each directorate should present the activities completed during the year, results accomplished,

problems encountered, new issues identified, the lessons learned, as well as the planned projects and activities for the next year. This will expose the staff to the activities of other departments and directorate and also assist in establishing cross-departmental collaboration.

This will also include periodical review of priorities, externally and internally commissioned program management reviews, organizational performance assessment as well as regular impact assessment of its investment. Creation of a reporting framework will be based on the operationalized plan for the monitoring and evaluation of programs and projects that contribute to the Strategic Plan.

A result framework with targets, indicators and means of verification will be part of the MTOP and discussed in the proposed M&E Strategy.

4.6. Financing the Strategy Implementation

MAF should continue to mobilize additional resources to facilitate the implementation of this Strategic Plan and associated priorities. The proposed five year investment plan serves as a basis and will assist MAF in this effort. There is a need to establish a mechanism for sustainable funding to reduce donor dependency for its operation. Funding for the short and medium term will be based on annual government allocations, donor contributions, bilateral project as well as non-tax revenues generated from MAF's goods and services.

During implementation of the MAF SP, steps should be taken to guard against overestimation of resources and abilities; underestimation of time, personnel or financial requirements; failure to coordinate; ineffective efforts to gain support of others or resistance; failure to follow plan, and loss of senior management's focus and commitment to ensure resources for implementation.

The various components of the core strategies are complementary and together they contribute to the much-needed small holder agricultural transformation process. Translating this strategy into action requires a series of plans, reviews and continuous learning and adaptation towards optimizing its operations. It also requires continuous dialogue among key players to smoothen implementation processes and structures to maximize efficiency and benefits. The identified strategies provide ingredients for guiding the various organs of MAF in developing short to medium term investments and implementation plans with clearly defined milestones/indicators and targets that will lead to desired outcomes and impacts. Good governance, integrated sustainable development, knowledge and innovation, international cooperation, peace and security are essential for the successful implementation of the MAF's Strategic Plan. During the process, changes (external) as well as the resistance to change (internal) must be managed. This also requires mindset and cultural changes in the way business is done within MAF. This organic change is evolutionary and may take time to achieve and requires long-term commitments from all partners.

ANNEXES

Annex 1. Constraints faced by MAF and the Agriculture Sector

Unless the causes of low productivity and poor performance are understood, it is difficult to develop appropriate strategies and programs. The constraints faced by MAF as an organization and its sub-sectors are presented below.

1.1 Constraints faced by MAF

- a. Inadequate operational funds to carry out activities;
- b. Weak planning and budget estimation process to cases to the National Parliament for more budget–planning and priority setting at all levels;
- c. Making staff more accountable and productive;
- d. Skills gap of staff to deliver services to clients;
- e. Too many research priorities and too few convincing project proposals;
- f. Low level of private sector investment in service delivery;
- g. Unreliable and inadequate data to support planning, budgeting, decision making and accountability;
- h. Inadequate processes to monitor, evaluate and assess the impact of MAF's activities/investments;
- i. Low visibility in the eyes of the beneficiaries – ineffective reporting and communication;
- j. Absence of a decentralized decision making mechanism;
- k. Poor infrastructure; and
- l. Poor coordination and linkages – both internal and external.

1.2 Constraints faced by sub-sectors

Food, crops and horticulture sub-sector

- a. Reliable data on crops and horticulture are not available;
- b. Low level of adoption of improved technologies leading to low productivity;
- c. Lack of knowledge of improved technologies and weak extension services;
- d. Limited or no access to credit and low use of purchased inputs (e.g. fertilizers, pesticides);
- e. Weak integration of on-farm and off-farm activities and lack of business orientation;
- f. Production system not based on the comparative advantage of regions and districts;
- g. Scattered settlement patterns hinder the organizing and development of farmer's associations and facilitation.

Industrial crops (plantation) subsector

- a. Inadequate knowledge and skills of plantation farmers in modern cultivation and management practices;
- b. Weak extension services;
- c. Old plantations with low productivity;
- d. Lack of business orientation and integrated on-farm/off-farm systems to add value;
- e. Lack of access to capital;
- f. Lack of clear land tenure system, which hinders the development of plantations; and
- g. State-owned plantations (about 12,000 ha) that are unproductive and conflict-prone.

Livestock (husbandry) subsector

- a. Traditional production system and lack of market orientation;
- b. Absence of legislation and regulation on veterinary public health and zoonotic diseases;
- c. Inadequate knowledge of farmers on livestock management, and irregular animal health services;
- d. Absence of fodder cultivation and dependency on weed-infested native pastures;
- e. Lack of financial institutions to provide micro-finance;
- f. Water and road infrastructure remain poor;
- g. The human resources capacity of extension workers is still very limited (skills and facilities) and availability at the sub-district level is inadequate;
- h. Lack of society/breeder's awareness on animal health issues (prevention and treatment of livestock disease).

Forestry Subsector

- a. Illegal logging which causes damage to forest ecosystems;
- b. Erosion and landslides cause land degradation and damage to watersheds;
- c. Inadequate number and lack of experienced and skilled staff;
- d. Inadequate forestry legislation and minimal regulations;
- e. Inability to enforce regulations that do exist;
- f. No forestry management strategy in place;
- g. Lack of forestry data, information, and understanding of biodiversity;
- h. Inadequate action on watershed protection; and
- i. Shifting cultivation practices exacerbate land degradation.

Fisheries Subsector

- a. Weak fisheries monitoring capabilities;
- b. Lack of facilities and infrastructure for fishing and aquaculture;
- c. Boat ownership levels and access to fishing equipment are still relatively low;
- d. Aquaculture (brackish, fresh, and seawater) is still underdeveloped;

- e. Data/information on fishing and aquaculture potential are still not available;
- f. No fisheries management plans;
- g. No international maritime boundaries;
- h. Lack of staff skills – supervisory ability and quality control for fisheries production are limited;
- i. Lack of off-shore based industries for value addition;
- j. Under-developed harvest sector;
- k. Inadequate knowledge and skills on commercial fishing.

1.3 Key Clients of MAF and their needs

The key clients of MAF are: smallholder producers, producer groups and civil society organizations; private sector and agribusiness community; non-government organizations (both local and national), and development partners; public (Government) and policy makers; and the consumers of goods and service produced by the sector. The needs and expectations of the individual groups of clients are:

Producers, producer groups, and community organizations

- a. Service: research, extension, quarantine, regulations, etc.;
- b. Technologies: production (varieties, breeds, management practices) as well as post production (storage, packing, handling, processing) technologies;
- c. Inputs: seeds, breeding stock, planning materials, drugs, equipment, machinery, etc.
- d. Enabling environment: policies, institutions, legislations, organizations, and infrastructure;
- e. Information: markets, prices of inputs and outputs, climate data, pests and diseases, etc.

Public (Government) and Policy Markers

- a. Inputs into policy and advocacy
- b. Outcome and development impacts
- c. Accountability

Non-Governmental Organizations (NGOs)

- a. Technologies/recommendations, advisory services, quality inputs;
- b. Enabling environment to operate (policy, institutions).

Private Sector (Input suppliers processors, marketing agents)

- a. Enabling environment to operate (policy, institutions, incentives);
- b. Quality inputs (standard, grades, regulations, quality assurance);
- c. Technologies/improved practices.

Development Partners

- a. Outcome and developmental impact;
- b. Accountability;
- c. Clear priorities.

Consumers (both domestic and export),

- a. Safe, cheap and nutritious food, quality products at competitive prices.

1.4. Strengths, weaknesses, opportunities, and threats for MAF

The MAF Strategic Plan takes into account the strengths, opportunities, and weaknesses of MAF.

Strengths to build on:

MAF will harness, nurture and build on the following strengths to achieve its goals and strategic objectives:

- a. Adequate staff numbers – central down to the suco level;
- b. Good collaboration with donors, agencies, civil society, and development partners;
- c. Leading/coordinating food security task force and mandate for agricultural development;
- d. Good basis for national agricultural extension; and
- e. Technical expertise within different fields of agriculture, and access to advisers.

Opportunities to take advantage of:

The following opportunities will be exploited for the benefit of MAF and its stakeholders:

- a. Political recognition of the importance of agriculture;
- b. Increased revenue from the petroleum sector;
- c. Decentralization of Government and services;
- d. Urbanization and improved urban incomes;
- e. Eventual ASEAN membership for Timor-Leste;
- f. Approval of agriculture-related laws in the new parliament; and
- g. Donor coordination to support MAF.

Weaknesses to be addressed:

MAF will deal with the following weaknesses during the implementation of the SP:

- a. Inadequate operational funds;
- b. Weak coordination of: (i) external support; and (ii) inter-ministerial activities;
- c. Weak linkages between national directorates, and district directorates and extension staff;
- d. Ineffective extension system (poor planning, resources and skills);
- e. Weak planning and priority setting and inadequate agricultural policies;
- f. Diffused priorities;
- g. Weak medium-term planning and budgeting process;

- h. Weak monitoring and evaluation of activities/investment and performance of staff – especially impact;
- i. Over concentration of staff in Dili;
- j. Inadequate structure and governance mechanisms to deliver the SDP;
- k. No clear strategy and plan towards achieving targets in the SDP; and
- l. Centralized decision making.

Threats to be countered:

MAF will put in place mechanisms for countering threats, especially:

- a. Erratic changes to the climate as a result of human-induced climate change;
- b. Increasing global food prices;
- c. Deteriorating natural resource base;
- d. Rural – urban migration and lack of interest in agriculture as a form of livelihoods;
- e. Declining funding support – not keeping in line with mandate and priorities;
- f. Increased importation of food, including processed food products; and
- g. Potential decline in donor support.

1.5 Summary of Key Issues addressed in the MAF Strategic Plan 2014-2020

The information generated through this situation analysis was used to formulate MAF's Strategic Plan 2014-2020 which were presented in Chapter 3. The large number of constraints and challenges faced by MAF can be classified under five broad categories:

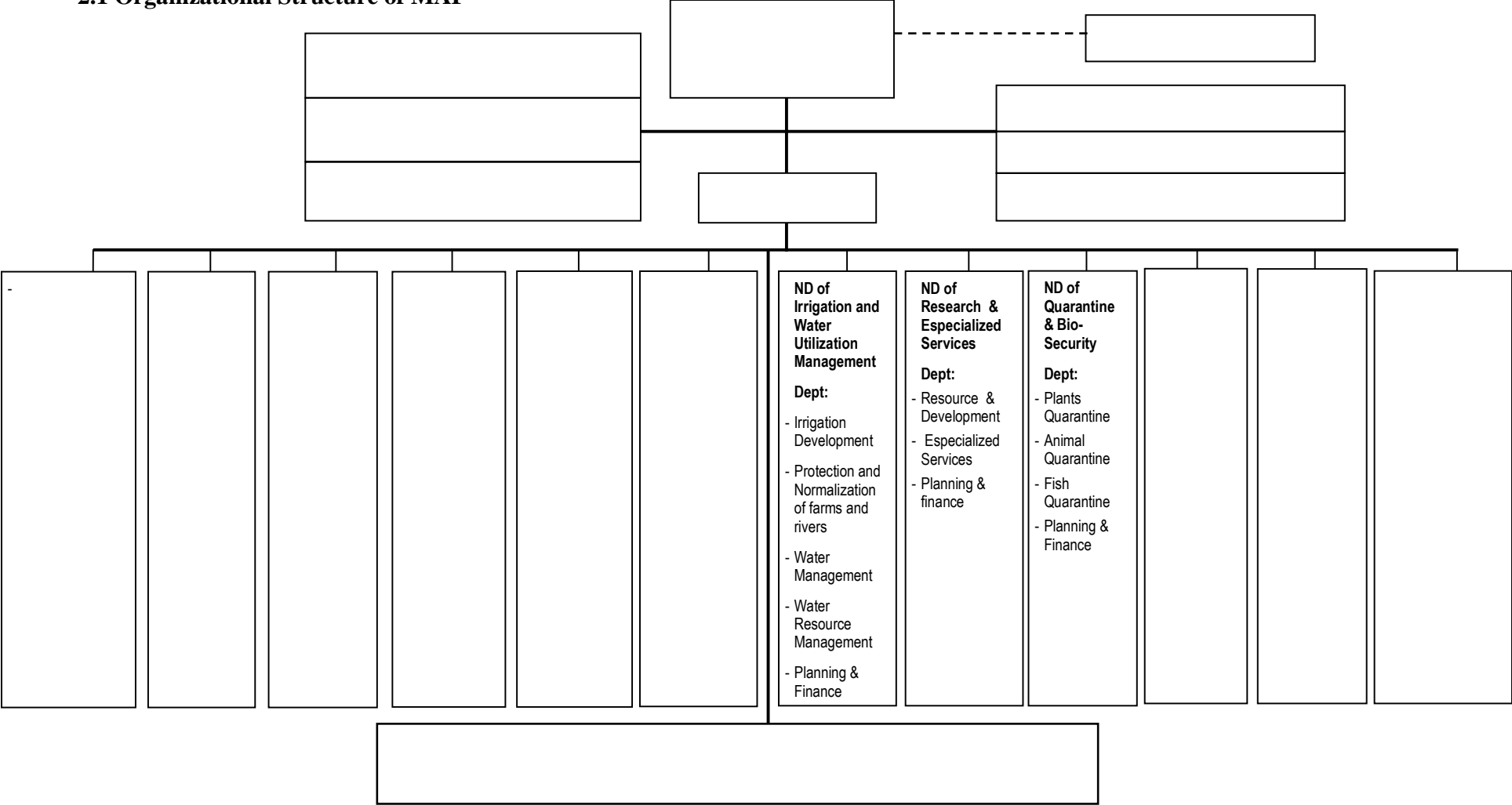
- a. issues and constraints contributing to low productivity;
- b. constraints facing marketing and value addition for primary products;
- c. the enabling environment (policy, institutions³ and rural infrastructure) that facilitates the smooth operation of farming and marketing;
- d. organizational constraints that condition the performance of MAF as an entity; and
- e. the constraints associated with the sustainable management and utilization of natural resources.

These broad categories of issues are addressed in the MAF SP. The Strategic Objectives and their components are as described in Chapter 3.

³The term institution in this context refers to the rules, norms and conventions (both formal and informal) that govern the interaction between the various actors of the agricultural innovation system rules of engagement.

Annex 2: Organizational Structure and Governance of MAF

2.1 Organizational Structure of MAF



2.2. The Powers of MAF:

- a) To propose policies and draw up the proposed regulations necessary for its areas of responsibility;
- b) To manage agricultural and forestry resources and watersheds;
- c) To manage National Parks and Protected Areas;
- d) To ensure the implementation and continuity of programs for rural development, in coordination with the Ministry of Economy and Development;
- e) To control the use of land for agricultural and livestock production purposes;
- f) To promote and monitor animal health;
- g) To promote the agricultural and livestock production and fishing industries;
- h) To inspect food production.

Source: MAF Directorates Inventory, 11/2010

2.3: Approved Mission of National Directorates of MAF (Decree Law No. 18/2008)

Directorate	Mission as per Decree Law
National Directorate of Support to Agricultural Community Development (Article 12)	To implement extension programs and the agricultural community development fund
National Directorate of Administration and Finance (Article 13)	To ensure technical and administrative support to the Ministry
National Directorate of Policy and Planning (Article 14)	To support the setting of strategic directions, priorities, and objectives for MAF policies as well as coordinating, following up, and assessing their application and ensuring the Ministry's relationships for national and international cooperation
National Directorate of Agriculture and Horticulture (Article 15)	To carry out policies within the field of agriculture and horticulture, genetic plant resources, materials for multiplying plant and vegetable varieties, training rural agents, and providing for the enhancement and economic diversification of rural areas.
The National Directorate of Irrigation and Water Use Management (Article 16)	To carry out policies in the fields of irrigation and management of water use for farming, proposing policy measures and instruments, promoting their application and participating in monitoring and assessment, the service is empowered to function as the national irrigation authority.
National Directorate of Forests (Article 17)	To draw up, follow up, implement and enforce forestry policy, especially in the fields of sustainable development of forest resources and their associated spaces and, additionally, hunting, beekeeping, and aquatic resources in inland waters, guaranteeing their protection, conservation and management; the service is empowered to function as the national forestry authority.
National Directorate of Industrial Plants and Agribusiness (Article 18)	To draw up, follow up, implement and enforce policy on coffee and industrial plants as well as assessing the effects of national and international macro-economic policy on agrarian production.
National Directorate of Fisheries and Aquaculture (Article 19)	To draw up, coordinate, schedule, execute and enforce policies, plans, programs and projects for fishing, aquaculture, the transformation industry and others allied with it, as the service invested with authority over fisheries on the national level.
National Directorate of Livestock Breeding and Veterinary Medicine (Article 20)	To draw up, follow up, implement and enforce policies, plans, programs, projects or any other matters relating to production, animal reproduction and livestock breeding technologies and industry, as well as issues relating to veterinary medicine and the protection of public health and animal health, being the service invested with authority over national veterinary health functions
National Directorate of Quarantine (Article 21)	To coordinate and implement measures, laws, and regulations on quarantines and sanitary controls on the import and export of animal and plants, animal plant products, merchandise, assets, or objects, as well as sanitary control of vehicles, ships, and aircraft.
National Directorate of Research and Specialist Services (Article 22)	To coordinate and implement research and laboratory activities, especially in the fields of agricultural and agro-forestry crops, soils, veterinary medicine and food production, in order to equip the Ministry services with the information and data required for the better and more efficient management of resources.
National Directorate of Agricultural Training (Article 23)	To coordinate technical professional schools, integrated under the national educational system

