

National Coffee Sector Development Plan Timor-Leste 2019 - 2030



MINISTÉRIO DA
AGRICULTURA
E PESCAS



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Industriais

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Foreword

During the Portuguese rule in Timor-Leste, there was a policy that required each household to plant at least 600 trees. Through this policy coffee production became an important industry for the economy of the people and for the country. In 1927 a natural cross of the arabica and robusta species of coffee was discovered and showed resistance to the coffee leaf rust (*Hemileia Vastatrix*). This new variety, known as the “Híbrido de Timor”, has been an important genetic resource for coffee research and breeding programs in other countries including the International Centre for Investigation of Coffee Leaf Rust (CIFC) in Portugal. More recently, Timor-Leste’s Arabica coffee has also become known as one of the world’s ‘Specialty Coffees’.

Coffee production, which is a source of food security for the 76,846 households that grow it (data from 2015 census) and provides a source of cash income for around 10,000 who work in the sector, has faced real challenges since Timor-Leste’s independence was restored in 2002. Low production and productivity results from a complex set of problems including the old age of existing coffee plantations and the impact of climate change. Other factors that have impacted on coffee production include uncertainty relating to land tenure which has reduced the incentives for coffee farmers to rehabilitate old plantations.

Before I became Minister of Agriculture and Fisheries, a team from the Ministry of Agriculture & Fisheries, the Asian Development Bank (ADB), Timor Coffee Association and other coffee stakeholders had already begun work to prepare a new policy and strategy for the coffee sector that could guide efforts to resolve the complex problems described above. The hope that we all share is that this new policy and strategy will not just focus on increasing production and productivity for the benefit of our people and the national economy but that it will also contribute to improving our environment, and in particular of the ecology of our soil, groundwater, soil-nutrition, and shade trees. Vegetation coverage in the area of coffee will be an important indicator of the contribution that Timor-Leste is making to the global movement to mitigate climate change.

I trust that the intensive discussions that were held through various forums before I became Minister have helped to ensure the quality of this policy and strategy to “Revitalize the Coffee In-

dustry". In particular, it is important that there has been in-depth discussion about working across the full 'coffee value chain' and about land use and conservation or shade, water and soils. Development and provision of agriculture inputs (upstream), technologies and technical support for good agricultural practices, expansion of the overall planting area, rehabilitation and rejuvenation (on farm), post-harvest and processing management and commercial product of organic coffee products (downstream). I hope that the long discussions that took place during the preparation of this plan have ensured that we can accommodate the interest of the government, private sector and cooperatives that buy and sell coffee.

As Minister I was informed that the Timor Coffee Association (ACT), which is composed of private sector coffee businesses and coffee producers was formed during the 6th Constitutional Government under the leadership of Minister of State Coordinator for Economic Affairs. I hope that ACT's structure and the involvement of the private sector will bring new life to our efforts to develop the coffee sector. I also would like to call for to ACT to work closely in partnership with relevant agencies, local government, coffee farmers groups, farmer associations and coffee producers to implement projects and activities that are aligned to Timor-Leste's Strategic Development Plan 2011-2030. I also would like to remind all of us, including ACT, that must use the motto "no one left behind" in order to build a strong and sustainable coffee industry.

I would also like to ask coffee farmers and local leaders to provide the maximum support for co-operation and partnerships to improve coffee production and harvest so that we can improve coffee production, productivity and quality. By doing this, we can maximise the benefits that Timor-Leste's organic coffee provides to the main actors in coffee industry and increase the contribution that the sector makes to the Gross Domestic Product of the agriculture sector and the national economy.

We know that it was not easy to prepare this plan which will be used as a guide for the implementation of programs and activities. So, to end my foreword as a Minister of Agriculture and Fisheries I would like to express thank you all for the collective effort to produce this document and to convey special thanks General Directorate for Forestry, Coffee and Industrial Plants, the Asian Development Bank, the Timor Coffee Association and other coffee stakeholders.



Minister of Agriculture and Fisheries
Engº Joaquim José Gusmão dos Reis Martins

List of Acronyms

ACT	Timor Coffee Association
ADB	Asian Development Bank
CBB	Coffee Berry Borer
CCT	Cooperativa Café Timor
CQI	Coffee Quality Institute
DNPEIG	National Directorate for Research, Statistics, and Geographical Information
DNAHE	National Directorate for Agriculture, Horticulture and Extension
DNCPI	National Directorate for Coffee and Industrial Crops
ETCI	East Timor Coffee Institute
FOB	Free on Board
GAPs	Good Agricultural Practices
HDT	Hibrido de Timor
ICO	International Coffee Organization
Kg	Kilogram
MAF	Ministry of Agriculture and Fisheries
MTCI	Ministry of Tourism, Commerce and Industry
MTOP	Mid-Term Operational Plan
NCSDP	National Coffee Sector Development Plan
NGO	Non-Governmental Organization
RDP	Rural Development Program
R&R	Renovation and Rehabilitation
SDP	Strategic Development Plan
SMART	Specific, Measurable, Achievable, Realistic, Timed
SP	Strategic Plan
SWOT	Strengths, Weaknesses, Opportunities, Threats
TA	Technical Assistance
TBD	to be determined
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNTL	National University of Timor-Leste
WCR	World Coffee Research

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Executive Summary

The coffee industry is a central part of Timor-Leste's economy, society, and history. Coffee is the most important agricultural cash crop in Timor-Leste, providing income for almost 20% of all households, business opportunities for processors, traders, and retail coffee shop owners, and significant export earnings for the country. In recognition of its importance, the Ministry of Agriculture and Fisheries (MAF) has prepared the National Coffee Sector Development Plan (NCSDP) to promote the growth and sustainability of the sector.

Timor-Leste's coffee sector is currently operating at levels far below its potential. The average yields of Arabica and Robusta coffees are far below yields achieved under similar conditions in other coffee producing countries and production varies significantly from year to year. Quality and value addition is also an issue. Coffees grown in Timor-Leste have excellent quality potential but most are exported as commodity grades usually at a discount prices below international "C" prices. While there has been some progress in adding value to local production through certifications and branding, there are still large untapped opportunities for creating additional value for coffee producers.

Low yields, inconsistent quality, and missed opportunities for adding value all contribute to the relatively high incidence of income poverty among coffee producing households. In 2014, almost 50% of the households that produce coffee had incomes below the national poverty line.

Investments in the coffee sector could have a transformative impact on reducing poverty among these households. Studies have shown that even modest improvements in coffee production could make a significant difference. It is estimated that if income from coffee could be doubled, the poverty rate among coffee households would drop from 50% to around 28%. The national poverty rate would also drop by about 3 percentage points, all because of the sizeable drop in poverty among coffee farmers.

The background assessments to support the NCSDP confirmed that the industry faces serious challenges. Many of the foundations of a successful industry are still at an early stage of development. This includes basic and applied agronomic research, the national system for training, extension and technology transfer, data collection and information management, and policy, regulation, and coordination. At the same time, climate change and the poor condition of many coffee plantations pose immediate threats to production. It is estimated that around half of all coffee farms require intensive rehabilitation because the trees are overgrown or long passed their productive life. It is therefore crucial that successful and cost-effective models for rehabilitating coffee farms are identified and scaled up.

The NCSDP's vision for the Timor-Leste coffee sector is for a sustainable and profitable coffee sector contributing significantly to improved livelihoods, food security, and economic growth. This vision is based on the desire that any benefits gained from improvements in the sector will be shared across all stakeholders in the coffee value chain with an emphasis on improving the livelihoods of smallholder producers.

To achieve this vision, the NCSDP sets forth a realistic long-term strategy to address key constraints by increasing investment in the sector and strengthening coordination between the public and private sectors, NGO and donor partners. Actions under the NCSDP are grouped around 6 key focus areas: research and development; production and productivity; quality and value addition; market access and promotion; and domestic consumption and tourism. The plan covers the period from 2019-2030 with impacts continuing beyond the life of the plan.

Implementation of the plan will begin with a comprehensive effort to further strengthen the information base for planning, monitoring, and evaluation of initiatives to develop the sector. This will integrate national programs such as the Agricultural Census and sector specific efforts to gather and collate data that is not currently accessible.

The plan includes actions to establish a coffee research and development program that can develop best practices and recommendations for coffee producers; enhancing national extension service capabilities and developing new models for training partnerships with the private sector. To address productivity, the plan calls for progressive scaling up of a national renovation and rehabilitation (R&R) initiative effort to replace aging and unproductive trees and promote farmers' adoption of good agricultural practices.

To tackle the quality issues, significant changes in the way coffee is handled and processed are recommended. The plan supports the introduction of simple quality frameworks that will facilitate widespread adoption of quality-based pricing. This will help to ensure that smallholder farmers have clear financial incentives for making the extra effort needed to provide quality cherries and parchment to processors. The plan also includes a range of activities to promote quality improvement and maintain quality along the supply chain. For example, increasing the capacity of the industry to evaluate coffee through cupping is a key objective.

The NCSDP leverages Timor-Leste's positive image among international buyers and its many strengths due to its unique status as the origin of the Hibrido de Timor and its long history of coffee production. The plan enhances efforts in market promotion, encourages the industry to build direct relationships with international buyers and promotes the development of domestic consumption and coffee-based tourism as activities that will complement and reinforce the broader objectives of developing the sector.



1. INTRODUCTION

The NCSDP was developed through the collaborative effort of Timor-Leste's coffee sector stakeholders. Development of the NCSDP was led by the Ministry of Agriculture and Fisheries' National Directorate for Coffee and Industrial Crops (DNCPI) which organized a series of regional and national meetings to gather input from stakeholders and established working groups for more detailed planning. International experts from the Coffee Quality Institute were engaged to conduct a situational analysis of the sector, assess the applied research and extension systems in coffee and to support finalization of the NCSDP.

Section 3 of the NCSDP presents a long term vision for Timor-Leste's coffee sector and a mission statement and guiding principles for achieving this vision. Section 3.5 presents the key focus areas and strategic objectives of the plan detailing the measure of success and targets for each objective. Section 4 presents a detailed implementation plan describing specific activities and key expected results during the life of the plan. Section 5 presents the institutional arrangements to oversee implementation of the plan. Section 6 includes the NCSDP monitoring and evaluation framework, while the on-line annexes include all the studies and reports produced during the preparation of this plan.



The background features a series of horizontal stripes in shades of orange, green, blue, and red, set against a dark brown background. A large, dark purple triangle is positioned on the left side, pointing towards the right. The text is overlaid on this triangle.

2.

**TIMOR-LESTE
COFFEE SECTOR**

(Past and Present)

2.1 Historical Perspective

Timor-Leste has a long and often tumultuous history of coffee production. Coffee has been grown in Timor-Leste on large plantations, state farms, communal plantations, penal plantations, and on individual smallholder plantings. Depending on the controlling power at the time, schemes were promoted or fell into neglect over time, but smallholder production has persevered. The importance of the smallholder's role in Timor-Leste's coffee history cannot be overstated.

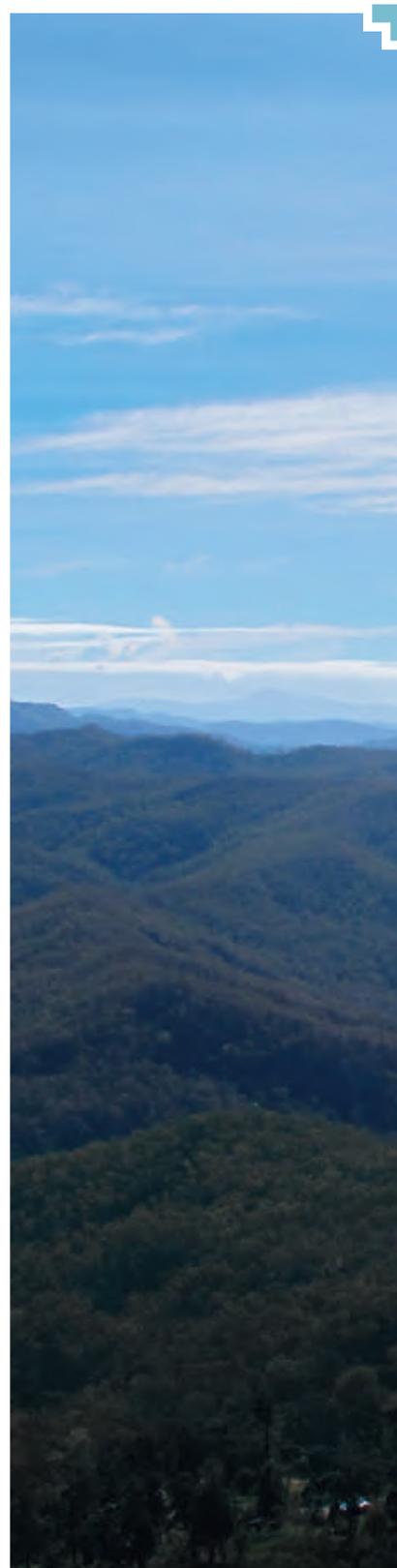
Today, the coffee industry continues as central part of Timor-Leste's economy and society. In order to better take advantage of the opportunities coffee has to offer the Timor-Leste economy and the further improvement of the livelihoods of its thousands of smallholder producers, a more coordinated and strategic approach needs to be adopted.

Coffee is the most important agricultural cash crop in Timor-Leste. In 2016, coffee production was estimated at 10,000 metric tons. Approximately 90% of annual coffee production is Arabica and 10% of annual production is Robusta. In 2016, approximately US \$27 million in green coffee was exported from Timor-Leste¹. Coffee exports have accounted for 85 percent to 90 percent of Timor-Leste's annual non-oil merchandise exports since independence².

2.2 Profile of a Typical Coffee Producer

Coffee producers in Timor-Leste are typically smallholder farmers who grow subsistence food crops and harvest cherries from coffee trees that they "own," or have traditionally gathered from communal lands. Households that grow and sell coffee make up about 18.9% of all households in Timor-Leste (*Table 1*).

Smallholder coffee plantations are generally small. Among coffee producing households, 62% produce coffee on less than one hectare of land, and 95% of all coffee producing households produce coffee on less than 5 hectares of land. These producers are often poor and vulnerable. Challenges inherent to the coffee industry, including vulnerability to weather events and seasonality of income, high transaction costs, and inefficiencies in poor rural infrastructure, perpetuate household vulnerability and poverty.



1 NDE 2016: External Trade Statistics Annual Report 2016

2 World Bank (2010). Expanding Timor-Leste's near-term non-oil exports, Diagnostic Trade Study, prepared by Integrated Framework (Draft). Poverty Reduction and Economic Management Sector, East Asia and Pacific Region, p. 11

Table 1. Percentage of Households Growing Coffee and Estimated Coffee Area in Timor-Leste for 2016

DISTRICT	Percentage of households that grow coffee for cash	Percentage of households that grow coffee as non-commercial	Percentage of households that do not grow coffee
Aileu	44.0%	38.2%	17.8%
Ainaro	29.9%	36.0%	34.1%
Baucau	10.5%	13.5%	76.0%
Bobonaro	18.1%	21.8%	60.1%
Covalima	15.9%	18.1%	66.0%
Dili	6.6%	1.7%	91.7%
Ermera	43.0%	38.6%	18.4%
Lautem	11.7%	6.6%	81.7%
Liquica	26.9%	29.7%	43.4%
Manatuto	15.3%	23.8%	60.9%
Manufahi	25.0%	29.9%	45.1%
Oecussi	19.7%	16.9%	63.4%
Viqueque	13.6%	14.5%	71.9%
Total	18.9%	18.6%	62.5%

Figure 1. Map of the districts in Timor-Leste

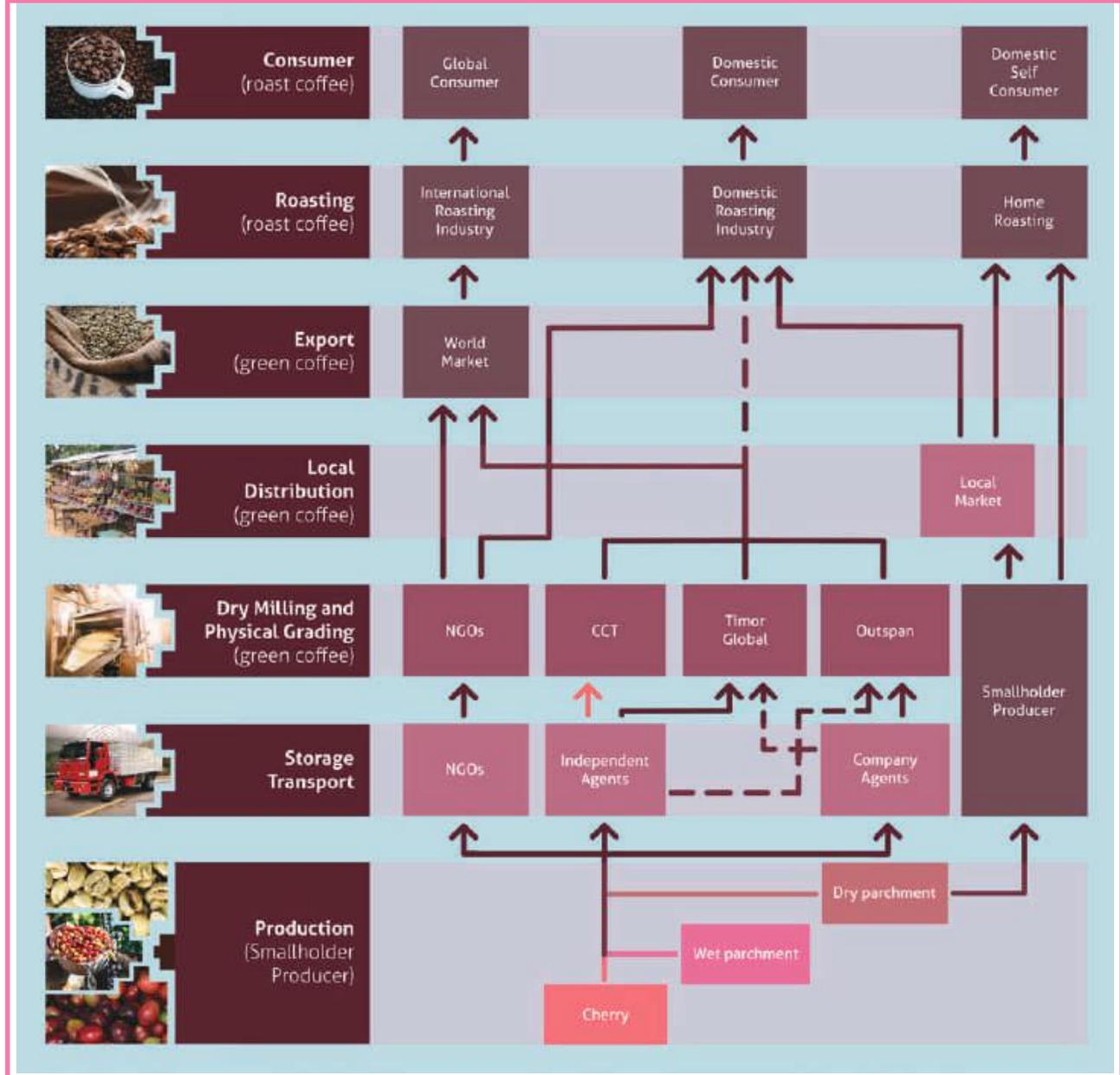


Source: J. Patrick Fischer / Wikipedia

2.3 The Timor-Leste Coffee Value Chain

The major players in the coffee value chain include the producer, the local buyer/middleman/collector or private trader, and the processor and/or exporter (producer, agro-industry, or NGOs). Major market segments include global coffee markets, regional markets, and local consumption.

Figure 2. The Coffee Value Chains in Timor-Leste



Source: Landell Mills (Adapted)

2.3.1 Production and Productivity

In 2016, MAF estimated that the area under coffee production totaled 59,278 hectares, with production estimates of 10,765 metric tons of green coffee or green bean equivalent (GBE). Coffee production is concentrated in the districts of Ermera, Manufahi, Liquiçá, Ainaro, Aileu, and Bobonaro, representing about 97 percent of the total production. Coffee production in the other districts is not as significant and is mainly for home consumption and sale in local markets. According to MAF, the average yield is about 195-204 Kg/Ha of GBE.

Sustainable production and good agricultural practices (GAPs) such as composting are, with some exceptions, not followed. Timor-Leste coffee is simply organic by default, meaning that no inorganic fertilizers or chemical inputs such as pesticides were used to produce the coffees. Timor-Leste may be the only country in the world that produces exclusively “organic coffee.”

2.3.2 Harvesting and Processing

Coffee is harvested in Timor-Leste from May until September. Family labor is generally used to pick the cherries from the trees. Trees, for the most part, are extremely overgrown. Farmers do not selectively pick ripe cherry, and trees often show signs of cherries being stripped from the taller, harder-to-reach branches.

As individual farmers use a range of processing techniques, the resulting quality of their parchment is often inconsistent, as cup quality is compromised and/or reduced when drying is delayed or uneven. This depends on many factors, including how much material other than well-picked ripe coffee is included, how long the coffee sits before the processing begins, how long the coffee is dried, and how clean the processing is.

Rural roads are often in poor condition, especially following the rainy season, just as coffee is being transported. This greatly inhibits the timely movement of cherry to washing stations. Infrastructure such as electricity is often not available, thus driving up the costs of operating processing machinery if diesel-powered generators are used to power it.

2.3.3 Coffee Marketing Systems

For the most part smallholder coffee producers are not fully integrated into commercial value chains (see Figure 2). They simply provide parchment or cherry that feeds into downstream supply chains of individual companies. The companies that process and export green coffee set the price for cherry or parchment. Producers have very little negotiating power on the price of cherry and are usually not rewarded for quality.



Most coffee is marketed through a few large companies that export through Dili or by traders who sell across the border to Indonesia. The commercial market system for coffee in Timor-Leste first involve a system of aggregation and transport that relies on buying agents who act as intermediaries for processing and/or trading firms. Value chain stakeholders at this stage include rural collectors, truck drivers, or other private traders who handle small volumes of coffee. In some cases, the drivers transporting coffee cherries or parchment may be independent agents, while in others they are employed directly by a company.

This additional step—and a complex, varying, and sometimes overlapping system of trade—leads to inconsistencies in the data recorded and the traceability of the source of each load.

However, these buying agents play an important role in getting coffee from farmers to processors. For firms that buy parchment coffee, these middlemen play the role of aggregating parchment from many small farmers. As noted, only one major processor purchases solely cherry and relies on its own system of collection from farmers within its system.

2.4 SWOT Analysis

As part of the assessment process in preparing the NCSDP, coffee stakeholders completed a comprehensive SWOT analysis of the sector (see Figure 3).



Figure 3. SWOT Analysis of the Timor-Leste Coffee Sector

Strengths	Weaknesses
<ul style="list-style-type: none"> • Long history of coffee in Timor (coffee culture) • Can exploit existing genetic diversity (most likely current varieties developed from phenotypes of HDT) • Well-established private sector participation in coffee value chain • Already have a commercial market channel and a segregated specialty market channel • Have an established organic value chain • Coffee is typically part of a diversified smallholder production landscape • Quality of well-tended coffees score in specialty range • Potential to highlight several cup profiles given diverse topography • Availability of farm labor for larger plantation expansion • Increased interest among Timorese in consuming coffee in coffee shops • Industry formation of the Timor Coffee Association (ACT) • Good altitude for both Robusta (around 800 m.a.s.l.) and Arabica (up to around 1,700 m.a.s.l.), ensuring good quality potential for both species, even in climate-warming context • Soil of coffee farms is not eroded (compared to countries like Brazil or Africa) • Current farming system is resilient due to a combination of well-adapted trees and shade, which helps retain soil, moisture, and biodiversity • Potential for producing conspicuously sweet and silky-bodied coffees, a profile that would be highly prized • Local tradition of coffee consumption even in rural areas, compared to most producing countries 	<p>Production and Productivity</p> <ul style="list-style-type: none"> • Low-input, low-output coffee farming systems • Low productivity and economic profitability of coffee farms • Low overall annual production available for export • Large swings in production from year to year • Aging coffee trees • Limited use of organic composting techniques • Limited use of good agricultural practices such as weeding, pruning, and mulching • Youth is not interested in coffee farming • Land laws and land disputes inhibiting investment in sector <p>Research, Extension, and Development</p> <ul style="list-style-type: none"> • Lack of a viable national coffee research program • Lack of laboratory facilities for soil testing and plant analysis • Limited availability of staff trained in coffee agriculture at MAF and National University of Timor-Leste (UNTL) • Lack of adequately trained extension staff at local level • Limited access to financial capital for rejuvenation and planting on farms <p>Quality and Value Addition</p> <ul style="list-style-type: none"> • Coffee not processed in a timely manner and allowed to ferment • Poor drying of parchment resulting in mold and taste defects • Inconsistent quality from farmer-processed coffees • Limited access to quality control and cupping facilities • Lack of pricing mechanism to reward quality • Under-exploited quality potential of Timor varieties <p>Market Access</p> <ul style="list-style-type: none"> • Poor transport infrastructure for secondary roads • Limited access to harvest finance

Opportunities	Threats
<ul style="list-style-type: none"> • Global market for coffee continues to expand, especially for specialty coffees • For potential buyers, Timor coffees have a nice cachet and interesting story (creates buzz) • Several noted quality buyers are actively increasing their purchasing of better Timor coffees • Timorese coffees can have an attractive price-point for buyers • Potential for new production areas ($\pm 60,000$ Ha) • Renewed interest of development partners to support rehabilitation and improvements in production and quality • Government commitment to revitalize the coffee sector • Global buyers interested in attending annual Timor-Leste coffee festival • Emerging market interest in Fine Robusta 	<ul style="list-style-type: none"> • Coffee commodity markets are volatile with price fluctuations (requiring knowledge of hedging strategies for large volumes) • Effects of climate change could have considerable socioeconomic impacts • Increased competition from other coffee-producing countries with similar profiles and attractive pricing • Poor coordination among development partners

2.5 Timor-Leste Coffee Sector Problem Tree

In determining the best steps forward in recommending a strategy, stakeholders reviewed the key causes (based on the SWOT) hindering the performance of the sector and developed a problem tree to illustrate the current situation. The problem tree is presented in Figure 4. The overall effects of a poor performing coffee sector contribute to persistent poverty and malnutrition for rural coffee producers and suboptimal export earnings for the country.



Figure 4. Timor-Leste Coffee Sector Problem Tree

EFFECTS

Persistent poverty and malnutrition

Sub-optimal export earnings

CORE PROBLEM

TIMOR-LESTE'S COFFEE SECTOR IS OPERATING FAR BELOW ITS LONG RUN POTENTIAL

CAUSES

Production is low and volatile

Quality is inconsistent and below potential

Sector management and coordination is weak

Poor quality roads and supporting infrastructure

Low rates of adoption of good agricultural practices

Weak public sector extension system

Declining youth participation

Limited participation of women in training

No national quality standards

Limited engagement of private sector in extension

Low levels of information sharing

Low levels of certification

Lack of knowledge and understanding of quality

Low levels of financial inclusion among farmers

Little applied research

Uncertain land tenure

Increasing impacts of climate change

Limited coordination of branding and marketing

Weak data collection and information management

Little effort to develop complementary income streams

Key causes and weaknesses identified include:

Productivity is low and volatile

Increasing yields and productivity are key prerequisites to increasing volumes of coffee produced in Timor-Leste. The country's smallholder coffee producers have some of the lowest coffee yields in the world. Factors contributing to low yields and productivity include:

- **Low levels of financial inclusion among farmers.** Support services such as financial services and access to credit for smallholder farmers are lacking and inhibit them from building up savings and accessing credit on more favorable terms.
- **Little applied research.** Unlike the extensive research on food crops, little research has been carried out on coffee to determine the best practices and economic benefits of improving coffee production in the country. In addition, no new varieties are being developed or tested that would be adapted to Timor conditions and meet future requirements in terms of quality, yield, and pest resistance. Opportunities to exploit potential regional variations have yet to be evaluated.
- **Uncertain land tenure.** Around 25% of the land planted with coffee is owned by the State and occupied by smallholder farmers who lack clear title. Uncertain land tenure may reduce the incentive for investment by some households.
- **Increasing impacts of climate change.** Unpredictable weather patterns make it more difficult to harvest and dry coffee, as rain during the harvest can inhibit these efforts. Increases in temperatures also increase the risk of pests and diseases such as coffee leaf rust.
- **Poor quality roads and supporting infrastructure.** Access to internal markets due to poor road quality is a major issue for most producers. High transport costs strongly affect the price farmers receive as well as their productivity. This is largely the result of the transport infrastructure being inadequate, roads being impassable in the rainy season, and the poor quality of the roads.

- **Low rates of adoption of good agricultural practices.** Few farmers utilize other basic low-cost cultivation practices such as composting to maintain fertility or pruning of overgrown trees for improved yields. Coffee trees need adequate nutrition to thrive and produce higher yields and better quality. They rarely practice rotational tree replacement or rehabilitation through stumping of older, unproductive trees. All of these factors combined result in very low production and productivity.
- **Weak public sector extension system.** The public-sector agricultural extension service under MAF has focused on providing extension services for the production of food crops as a priority for ensuring food security. Extension services for coffee have been minimal.
- **Declining youth participation.** Fewer youth are engaged in producing coffee and skills required to produce quality coffee are not being passed down to the next generation.
- **Limited participation of women in training.** Although women play important roles in the production and harvesting of coffee, training programs are not designed to meet the needs of women.

Quality is inconsistent and below potential

Quality and consistency are key determining factors for access to premium markets. Much of Timor-Leste's green coffee falls short on quality, or its quality is inconsistent and unreliable, thus it is sold at reduced prices to commodity buyers. There are many factors contributing to reduced quality.

- **Lack of quality standards.** There is a lack of simple standards that could be used to help farmers, traders and other stakeholders to differentiate between different levels of quality of fresh cherry and parchment. There are no price differentials to farmers such as linking purchase prices for cherry and parchment to quality to provide clear incentives for quality improvement.
- **Limited engagement of the private sector in extension.** The private sector has made limited efforts in developing systems of extension services to support farmers in production, productivity, and market linkages. There has been little coordination of efforts between the stakeholders to develop consistent extension messages.



- **Low levels of information sharing.** Information on good agricultural practices and proper harvesting and processing technologies are not being disseminated to producers. Opportunities for value addition are not being exploited.
- **Low levels of certification.** Although there are some organic certified coffees being produced, the industry is failing to take full advantage of certification programs that could add value.
- **Lack of knowledge and understanding of quality.** There is little knowledge among producers of what quality is and how to produce and process coffee to maintain quality. Many processors also lack basic skills in quality processing and lack cupping skills required to identify quality lots.

Poor sector management and coordination

Numerous studies and assessments have identified weak coordination among stakeholders as a key constraint to developing the coffee sector in Timor-Leste.

- **Limited coordination of branding and marketing.** Despite the legacy of the HDT variety in the development of modern coffee varieties, the industry stakeholders of Timor haven't been able to launch a unified marketing and branding initiative.
- **Weak data collection and information management.** There are limited efforts to collect and analyze coffee production and marketing data that would allow the industry to better track the progress of and impact of interventions on the sector and to identify weaknesses and trends.
- **Little effort to develop complementary income streams.** Many coffee producers lack alternative income streams to complement their coffee income. Little effort has gone into promoting diversification for these households.

In section 3 below, the NCSDP lays out the strategy for developing a profitable and sustainable coffee sector that contributes significantly to improved livelihoods, food security, and economic growth of the country.



3.

THE COFFEE SECTOR DEVELOPMENT STRATEGY:

*Vision, Mission, Guiding Principles,
key focus areas and Goals,
and Strategic Objectives
and Targets*

3.1 Vision

The vision of the plan is for a profitable and sustainable coffee sector that contributes significantly to improved livelihoods, food security, and economic growth.

3.2 Mission

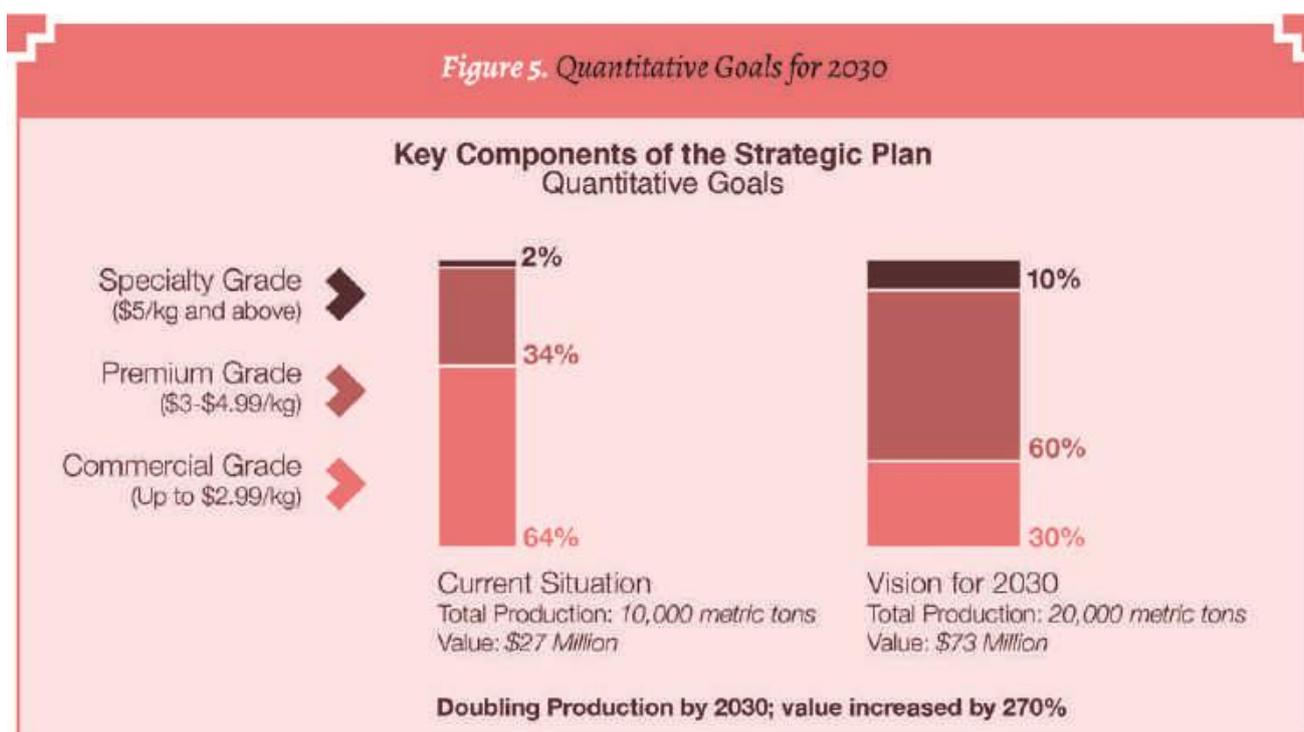
The mission of the plan is to improve the productivity of coffee farming in Timor-Leste, the quality of coffees produced and processed, and the access to premium regional and global markets.

3.3 Quantitative Goals

The NCSDP calls for a significant increase in productivity and improvement in quality over the duration of the plan. Below are the key long-term goals to be achieved over the life of the plan.

- Doubling of Timor Leste's coffee production by 2030 to 20,000 tons annually
- Significant increase in quality as measured by the percentages of grades sold at the specialty and premium price levels by 2030.
- 270% increase in the value of exports of Timor-Leste Coffee by 2030

Increasing productivity and quality are essential for the success of the industry. The impact on incomes and economic growth are illustrated in *Figure 5*.



3.4 Guiding Principles

The NCSDP has 5 guiding principles. These principles will help to ensure that the plan is realistic and meets the needs of smallholder coffee producers. The principles are:

1. Evidence-based: promote the use of sound research methods to find out what works best.
2. Smallholder-focused: the needs of Timor-Leste's smallholder farmers will be prioritized.
3. Sustainability: always ensure social and environmental sustainability.
4. Collaboration: promote collaboration and transparency among stakeholders
5. Inclusion: support the participation and empowerment of women and other disadvantaged groups.

3.5 Links to the Timor-Leste Strategic Development Plan, MAF's Strategic Plan (2014-2020), and MAF's Mid-Term Operational Plan 2014-2018

The NCSDP is aligned with Timor-Leste's Strategic Development Plan 2011-2030 (SDP) and builds on MAF's Strategic Plan (SP) 2014-2020. The development goals of SP 2020 are to improve rural income and livelihoods and reduce poverty, and to improve household food and nutrition security. The SP 2020 supports the transition from subsistence farming to commercial farming and promotes environmental sustainability and conservation of natural resources. The NCSDP is fully aligned with the SP and contributes directly to achieving these goals and objectives.

3.6 Key Focus Areas and Goals

To tackle the constraints to the coffee sector in a systematic way, the NCSDP is organized into 6 key focus areas or pillars:

1. Research and Development
2. Production and Productivity
3. Quality and Value Addition
4. Market Access and Promotion
5. Domestic Consumption and Coffee Tourism
6. Coffee Sector Management and Coordination

A series of strategic objectives are defined for each focus area. These strategic objectives are generally medium or long-term and it is expected that annual action plans will be prepared to ensure that progress towards the objectives is sustained.



3.6.1 Focus Area 1. Research and Development

Goal: To strengthen the coffee research and extension systems so that they are responsive to industry requirements and demands

Strategic Objective 1.1. To establish a national coffee research and crop improvement program

With adequate resources and support, R&D can be used to continuously develop improved farm technologies and practices for improving coffee productivity. Quality can be improved by evaluating drying technologies and better understanding the relationships between production, processing, and quality. Socioeconomic studies can address research questions relating to household behavior, technology adoption, income distribution across the value chain, and other issues.

In the short-term, MAF will begin to catalogue the local varieties and create a germplasm garden to be used in a variety improvement program. Timor-Leste may also participate in the World Coffee Research-managed (WCR) International Multilocation Variety Trial. In the medium- and long-term, MAF will develop a coffee variety improvement program that can provide improved varieties to the sector.

Indicators of Success

- A coffee research unit established within MAF with adequate funding and staffing
- Mapping of the genetic makeup of Timor-Leste coffee varieties completed
- Germplasm garden of local variety collections established
- Mother stock trees for seedling multiplication identified
- Selected studies and assessments completed
- WCR International Multilocation Variety Trial initiated
- Network of farmer managed demonstration plots established

Key Initiatives

- Conducting socioeconomic studies on the Timor-Leste coffee landscape
- Upgrading facilities, including laboratory and field testing sites
- Developing/upgrading nurseries for seedling production
- Establishing a coffee variety improvement program
- Conducting coffee agronomic trials to determine best practices
- Establishment of farmer managed demonstration plots using standard methodology

Strategic Objective 1.2. To Increase the capacity of Timor-Leste research Institutions (MAF, UNTL, ETCI, etc.) to carry out applied coffee research and extension demonstration trials

Coffee research and extension institutions that could address many of the relevant issues through applied research are hampered by inadequate infrastructure and insufficient funding. The goal of the NCSDP is to have a coffee-improvement unit established as part of MAF's in-house capacity. By 2030, other institutions will be working in collaboration with MAF. This includes coordinating with MAF on the development of coffee course curriculums and extension materials aimed at increasing staff skills and capacity.

Indicators of Success

- MAF has dedicated staff working on coffee research and development
- Skills and capacity of coffee staff strengthened
- Technology transfer and training programs conducted that are tied to coffee research recommendations
- Number of staff hired (assigned) as part of the research and development unit
- Number of capacity training courses completed by staff
- Number of course curriculums developed

Key Initiatives

- Increasing the human-resource capacity in research and extension
- Developing training curriculums and programs
- Conducting training-of-trainer (ToT) courses in basic agronomic practices

3.6.2 Focus Area 2. Production and Productivity

Goal: To expand production and productivity of Timor-Leste coffee as a way to ensure a prosperous and sustainable coffee sector

Strategic Objective 2.1. To improve on-farm yields through rejuvenation (renovation and rehabilitation) of existing coffee plantations

The R&R program will be coordinated by MAF and implemented through a network of partnerships. The basic elements of the program will include regular training for smallholder households on GAPs, provision of planting materials, and the establishment of financial support mechanisms. Special attention will be given to resolving the uncertainty faced by smallholders who occupy state-owned plantations by developing a viable model for management of these plantations.

Indicators of Success

- Percentage of smallholder producers adopting improved agricultural practices
- Number of hectares of coffee rehabilitated or rejuvenated increased
- Increase in the number of households that have completed farm rehabilitation and upgrading programs
- Increase in the number of producers following good agricultural practices

Key Initiatives

- Improving seedling production and coffee nursery management
- Increasing access to organic fertilizers (e.g., compost)
- Strengthening extension services to coffee producers
- Scaling up R&R (stumping old trees, removal and replanting of unproductive trees)
- Scaling up shade tree replacement and management
- Developing a new model for management and operation of state-owned plantations

Strategic Objective 2.2. To promote an organic production model based on internationally recognized best practices

The NCSDP recognizes the challenges of developing an organic production model based on best organic agricultural practices. This model depends on a reliable source of high-quality compost that may be out of the reach of a number of smallholder producers. One of the first steps is to do an assessment of the current sources of compost and to look at options for increasing compost availability to rural areas. The “organic by default” model is unsustainable and will continue to precipitate a decrease in productivity. During the course of the NCSDP, the industry will need to reach consensus on a strategy that may or may not include the addition of commercial fertilizers for coffee. This would include an assessment of the nutritional quality of the compost available and whether these sources supply the necessary nitrogen, potassium, and other micro-nutrients required by the coffee trees for optimal growth, especially following rejuvenation efforts.

Indicators of Success

- Improved yields compared to current low input practices
- Use of organic compost by smallholder producers increased
- Private-sector investment in producing commercial sources of organic fertilizers increased



Key Initiatives

- Securing a reliable low-cost source of organic compost
- Conducting cost-benefit analysis of different fertilization protocols
- Developing organic good agricultural practice recommendations for Timor-Leste producers
- Increasing participation in organic certification programs

Strategic Objective 2.3. To provide increased extension services to smallholder coffee producers

Poorly designed extension training programs can result in low rates of adoption of improved practices among smallholder farmers. The NCSDP takes into account the weakness of the current extension system and sets in motion steps to improve the services provided to smallholder producers.

The private sector already plays an important role in delivering extension services to coffee producers and the NCSDP will seek to scale this up. Coffee extension workers from the private sector often receive additional training from their companies. Public extension workers, on the other hand, may or may not have had access to trainings, depending on whether they participated in previous donor-funded programs. The NCSDP will seek to improve the quality and consistency of extension advice provided from all sources. The plan will also ensure that women farmers can access extension support by mainstreaming gender through all training and extension work.

Indicators of Success

- Increase in the number of producers receiving extension services
- Increase in the adoption rates for improved practices
- Increase in the capacity of extension agents to deliver effective extension services
- Increase in the number of staff trained in good agricultural practices to transfer to producers
- Increases in gender equity in coffee production through increased focus on shared household responsibilities

Key Initiatives

- Conducting an assessment of training needs for extension agents
- Developing a national extension training manual
- Designing training materials
- Developing coffee expertise and technical know-how among government extension workers



- Developing demonstration plots for highlighting improved practices
- Delivering effective extension services
- Designing regular and standardized systems of monitoring and evaluation of adoption rates, etc.

Strategic Objective 2.4. To enhance support services to smallholder producers

There is considerable scope to expand financial inclusion among smallholder farmers—particularly access to deposit accounts and the ability to send and receive money through mobile channels when this service becomes available. Given the uneven nature of coffee incomes, households can benefit from the ability to save, earn interest, and send and receive money through simple and accessible accounts. The promotion of financial literacy and household savings may not directly lead to higher incomes but is an important part of the strategy to do so.

In the near-term, there is a limited role for credit in increasing coffee sector productivity and incomes at the smallholder level. Credit is poorly suited to facilitate the recommended strategies for increasing coffee yields and quality at the farm level but as productivity and profitability improve, smallholders' ability to make use of more sophisticated financial products will increase. A cash-for-work program should also be considered to incentivize rehabilitation, assist in consumption smoothing, bridge short-term income loss due to pruning, and reward off-season labor with consumption-smoothing payments.

Indicators of Success

- Increase in the level of financial inclusion among smallholders, both in terms of access and usage
- Increase in the total volume of formal household savings among smallholders
- Reduced cost of doing business with smallholders through improved payment mechanisms

Key Initiatives

- Working with financial service providers to offer pre-harvest credit and access to micro-savings accounts
- Piloting direct deposit of coffee payments into deposit accounts
- Assessing smallholder needs and designing tailored financial products to meet demand as coffee sector productivity increases

- Developing cash-for-work programs to incentivize coffee farm rehabilitation
- Advocacy for increasing supporting market services

Strategic Objective 2.5. To Increase the total hectares of coffee production

Timor-Leste has a diverse landscape with different altitudes and agro-climatic zones. There are opportunities to identify new areas where coffee could be introduced and to determine the best varieties suited for production under these conditions. This is especially important as changing climatic conditions and increasing temperatures could adversely affect coffee production, especially for Arabica coffee varieties. It is extremely important that these efforts do not lead to additional deforestation and that coffee be introduced into a sustainable agroforestry farming system.

Indicators of Success

- Increase in the number of hectares of new coffee trees planted
- Increase in the total hectares of coffee under production

Key Initiatives

- Identifying new productive areas for producing coffee
- Conducting assessments to ensure coffee is introduced under a sustainable agroforestry system
- Providing seedling and extension services to new producers

3.6.3 Focus Area 3. Quality and Value Addition

Goal: To achieve a sustainably produced and quality-driven coffee sector

Strategic Objective 3.1. To establish a quality-driven production system

The quality-improvement effort starts with the smallholder producer. Educating producers on the importance of quality and how they can improve the quality of their coffees is paramount. For farmers that sell fresh cherry, the focus is on ensuring the highest quality of cherry through control of production and picking. For farmers who process their cherry into parchment, there is also a need for better control of the pulping, fermentation, and drying processes. In some cases, a shift from home processing to the small to mid-size community-based processing units may be the most efficient means of improving quality control.

Simple standards will be used to help farmers, traders and other stakeholders to differentiate between different levels of quality of fresh cherry and parchment. Industry stakeholders will be encour-

aged to make use of these standards and to link purchase prices for cherry and parchment to quality to provide clear incentives for quality improvement. It is also important to ensure that quality coffees are identified and separated from lower-quality lots. The plan calls for the development of a coffee-tracking system that will allow the industry to trace the origin of the coffees and to provide better record keeping.

Indicators of Success

- Improved coffee quality demonstrated by an increase in the share of coffee sold with price premiums on export markets
- Increase in average cupping scores of Timorese coffees (judged during annual cupping competitions)

Key Initiatives

- Developing clear quality norms through public/private consultation
- Supporting quality-based pricing at the farm level
- Shifting to community-scale processing units
- Improving processing skills at all levels of processing

Strategic Objective 3.2. To create greater value-addition opportunities such as premium-driven pricing mechanisms and sustainability and certification schemes

Improving the price that farmers receive for their coffee can amplify the benefits of increased production. The NCSDP encourages efforts for further value addition for Timor-Leste coffees. The strategy recognizes that high quality coffees are sold at higher price premiums and with less price volatility than commodity-grade coffees¹. The high-value market for specialty Arabica coffee is firmly established and continues to be the fastest-growing segment of coffee consumption in the United States, Northern Europe, Australasia, and parts of Asia. A specialty market for quality Robusta coffee is also emerging.

The global coffee industry is continuing to segment into new opportunities that are highlighted by supply chain transparency, product traceability, and the knowledge of value chain partners and consumers. This “third wave” of coffee is a movement to produce coffee as a high-quality artisanal product rather than a low-value commodity. This market segment has quickly grown into a multibillion-dollar industry as demand and awareness continue to expand. Accessing this market involves improvements at all stages of production, from improving coffee production, harvesting, and processing to building strong relationships between coffee producers,



¹ Coffees with a cupping score greater than 80 points on the SCA's cupping form.

traders, and roasters. Building these market linkages will become a key component of the market promotion strategy.

Another opportunity for value addition is through one of the many certification schemes. Coffees that are independently certified or verified by an accredited third party certification scheme have been collectively termed "sustainable coffees." This includes coffee certified such as organic, fair trade, Rainforest Alliance, UTZ, Bird Friendly, and many other certifications. The premiums paid under these schemes could offer opportunities to increase incomes for producers. However, certifications alone cannot guarantee substantial increases in prices for producers; the coffees must also be of very high cup quality. Quality-driven sustainable coffees will help ensure a more sustainable and profitable sector.

Indicators of Success

- Increased total volumes of coffee exported under sustainability and certification schemes
- Increased prices paid to producers at the farm level
- Increased percentage of the total FOB price that is received by the producer
- Increase in the proportion of coffees that are exported at a premium to the commodity price

Key Initiatives

- Enhancing sustainable coffee production
- Creating market linkages between producers and buyers
- Increasing awareness of sustainability standards
- Developing information management capabilities to support traceability

3.6.4 Focus Area 4. Market Access and Promotion

Goal: *To enhance the competitiveness of Timorese coffees by improving market access and awareness of Timorese coffees on regional and global markets*

Strategic Objective 4.1. To increase the efficiency of internal market supply chains

Timor-Leste's coffee supply chains are plagued by high transaction costs (transport, processing, administrative hurdles, etc.), making the final export price less profitable for processors and traders who in turn pay lower prices to the producers to offset their high costs. Smallholder producers could potentially receive a higher percentage of the final export price if the internal marketing system were improved. The NCSDP stresses the need for improved access to internal markets by removing barriers such as



poor rural infrastructure. Stakeholders need to become involved in advocating for improved rural roads in the main coffee-growing areas. The ACT can play a key role here, working closely with the government to identify areas needing immediate attention. Private sector investment in rural processing infrastructure will be encouraged. Ideally, all smallholder producers should be within 2 hours walk of a processing unit.

Indicators of Success

- Increased number of kilometers of rural roads rehabilitated in the coffee-growing areas
- Decrease in the average time needed to move coffee from farm gate to FOB
- Reduction in the average transaction costs from farm gate to FOB

Key Initiatives

- Improving the prioritization of rural road repairs and upgrades
- Improving the road network from farm gate to the port

Strategic Objective 4.2. To increase market linkages with regional and global coffee buyers

Increasing access to information about coffee production in Timor-Leste and bringing the global coffee world to Timor-Leste is a great way to increase exposure to Timor-Leste's unique coffee origin. Developing a program of targeted communications to key consuming markets is an important part of a broader strategy to increase value creation by building links with key markets. Festival Kafé Timor and the associated quality competitions provide an annual platform to strengthen value chain and market linkages are an excellent platform for promotional activities.

Indicators of Success

- Increased number of international buyers attending the annual Festival Kafé Timor
- Increased number of market linkages facilitated as a result of promotional activities
- Increased availability of information about coffee production in Timor-Leste in key consuming markets

Key Initiatives

- Developing a marketing and communications strategy for promoting Timor-Leste coffees
- Supporting industry participation in regional and global coffee expos to promote high quality Timor-Leste coffees

- Identifying and hosting international buyers at the annual Festival Kafé Timor
- Conducting Timor-Leste coffee industry promotional tours to consuming markets

3.6.5 Focus Area 5. Domestic Consumption and Coffee Tourism

Goal: *To promote domestic consumption of coffee as a way of enhancing coffee industry competitiveness and developing the domestic coffee market*

Strategic Objective 5.1. To develop a vibrant and profitable local retail coffee industry

Coffee is widely consumed in Timor-Leste: much of it is Timor-grown, with some coffee purchased after roasting and some households buying green coffee at local produce markets for roasting at home. Imported soluble coffee and “3-in-1” products (coffee, sugar, dairy substitute) are also popular in the local market. Increasing domestic consumption can offer opportunities for additional marketing channels for Timor-Leste-produced coffee. Improving the coffee roasting and brewing of Timor-Leste’s cafés and restaurants would also positively impact the overall brand image of the nation’s coffee industry.

Indicators of Success

- Increased number of trained professionals in the retail coffee industry
- Increased total number of trainings provided in processing, roasting, and barista training
- Increased volume and value of Timor-Leste coffees sold domestically

Key Initiatives

- Increasing skills in brewing and roasting
- Holding barista competitions
- Development and adoption of accredited training for coffee service staff

Strategic Objective 5.2. Developing coffee related tourism activities

Coffee related tourism can create additional opportunities for value creation for the coffee sector and reinforce efforts to develop new niche and specialty markets. Coffee related tourism can increase the demand for high value retail products such as roasted coffees and specialty coffee drinks. Other activities such as farm visits and tours can help to create new income generating oppor-

tunities for coffee producing communities. The development of flagship coffee visitor experiences that build on Timor-Leste's unique coffee history could also play a significant role in raising awareness of Timor-Leste coffees internationally.

Indicators of Success

- Increase in the number of international tourists on organized coffee tours in Timor-Leste
- Timor-Leste coffee landscape is designated as a UNESCO World Heritage site.
- Increased number of communities benefitting from coffee tourism

Key Initiatives

- Establishing coffee tour itineraries
- Developing a unified message about Timor-Leste coffees
- Promoting public-private partnerships to promote coffee tourism

3.6.6 Focus Area 6. Coffee Sector Management and Coordination

Goal: *To have an active and vibrant coffee sector with all stakeholders working together for the success of the sector*

Strategic Objective 6.1. To implement the National Coffee Sector Development Plan

The success of the National Coffee Sector Development Plan to improve production, enhance quality, and develop specialty markets hinges on close coordination across the value chain and between government, the private sector, and other stakeholders. This will be the key to successful implementation of the plan.

Indicators of Success

- Regular stakeholder meetings held to coordinate activities
- Timely monitoring and evaluation of NCSDP implementation
- Successful development and implementation of NCSDP Annual Action Plans during 2019-2030

Key Initiatives

- Establishing the NCSDP Implementation Team
- Convening regular public-private consultations on coffee sector constraints
- Promoting the ongoing development of ACT and other bodies
- Setting up a monitoring and evaluation system to monitor performance of the sector



Strategic Objective 6.2. To develop and implement coffee data collection systems

There is a lack of a reliable system for data collection on coffee. This is an inherent weakness. MAF does not currently have an internal system that is capable of collecting, organizing, analyzing, and disseminating information and data on coffee performance and trends. The NCSDP sets in motion steps toward improving the current system and introducing new methodologies that will increase the reliability of production and performance data.

Indicators of Success

- Increased accuracy and reliability of annual coffee production estimates
- Annual coffee performance statistics prepared through industry consensus
- Coffee balance sheet prepared annually

Key Initiatives

- Developing methodologies and guidelines for collecting and reporting coffee data
- Conducting on-farm surveys to gather production data
- Developing systems for monitoring and evaluation of coffee sector performance





4.

**IMPLEMENTATION
PLAN FOR THE
STRATEGY**

The strategy includes a realistic and clear road map for the coordinated improvement of the industry. This implementation plan describes the key activities. Some activities will begin almost immediately with minimal additional cost. Other programs will either have significant costs, or will be long term. Since the industry is facing some very pressing challenges (volatile yields, low quality, pests and diseases, etc.), interventions that can deliver immediate results should be balanced against longer term programs.

Key Implementation Activities

The main work to be carried out during the plan's duration is presented below (see Table 2). Included is a description of each activity, the responsible party for carrying out the activity, the timeframe of the activity, the expected results to be achieved, and ways for measuring success or achievement of the objective.



Table 2. Implementation Activity Matrix

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
FOCUS AREA 1	Research and Development		
STRATEGIC OBJECTIVE 1.1	To establish a national coffee research and crop improvement program		
Activity 1.1.1	Conduct genetic testing of local nursery stock of MAF and Cooperativa Café Timor (CCT) nurseries and, where feasible, other locations where specific “varieties” are used for procuring beans for seed	MAF/DNPEIG/ DNCPI Private sector DPs International org (WCR)	Varieties' genetic makeup identified and nursery stock improved
Activity 1.1.2	Conduct a survey of the current Arabica and Robusta crops to document levels of pests and diseases	MAF/DNPEIG/ DNCPI	Initial pest risk analysis completed
Activity 1.1.3	Survey the status of soil and coffee plant nutrition in coffee-growing areas by taking soil and plant-leaf samples for analysis	MAF/DNPEIG/ DNCPI Int'l Lab International consultancy	Survey completed and fertilizer recommendations developed
Activity 1.1.4	Establish a collection (garden) of local varieties of Arabica and Robusta that could be used in future variety improvement programs	MAF/DNPEIG/ DNCPI Int'l consultancy Private sector	Variety garden established
Activity 1.1.5	Initiate a variety improvement program by participating in WCR's international variety trials	MAF/DNPEIG/ DNCPI International org (WCR)	Int'l variety trials established
Activity 1.1.6	Conduct shorter-term field trials on actual farmer-managed plots (partner with int'l org) (https://worldcoffeeresearch.org/work/-farm-demonstration-trial-network/)	MAF/DNPEIG/ DNCPI/DNAHE International org (WCR)	X number of demonstration research trials established
Activity 1.1.7	Conduct socioeconomic surveys of smallholder producers	MAF/DNPEIG/ DNCPI/DNAHE	At least x number of socioeconomic studies completed and results shared

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
STRATEGIC OBJECTIVE 1.2	To Increase the capacity of Timor-Leste Research Institutions (MAF, UNTL, ETCI, etc.) to carry out applied coffee research and extension demonstration trials		
Activity 1.2.1	Create a coffee research and development unit within MAF	MAF/DNCPI/ DNPEIG	A dedicated research unit established and manned in MAF
Activity 1.2.2	Conduct a needs assessment to determine required staffing and facilities/lab equipment required for a national coffee research program	MAF/DNCPI/ DNPEIG	Needs assessment completed and recommendations presented
Activity 1.2.3	Conduct peer review of current existing demonstration plot treatments currently being used, with particular attention to planting, pruning, and composting techniques	MAF/DNCPI/ DNPEIG	Peer review of current existing demonstration plots completed
Activity 1.2.4	Develop methodologies and guides on conducting applied research and demonstration trials on government farms and on farm locations	MAF/DNCPI/ DNPEIG, ADB, WCR	Methodologies and guidelines established
Activity 1.2.5	Develop a data collection system-known as a Geographical Information System (GIS)-to determine production, productivity, and yield	MAF/DNPEIG/ DNCPI	GIS system for data collection piloted
FOCUS AREA 2	Production and Productivity		
STRATEGIC OBJECTIVE 2.1	To improve on-farm yields through rejuvenation (renovation and rehabilitation) of existing coffee plantations		
Activity 2.1.1	Map current rejuvenation efforts undertaken by all stakeholders (public and private sector, NGOs, etc.)	MAF/DNCPI/ DNPEIG	Areas mapped and efforts coordinated
Activity 2.1.2	Ensure that variety and seed selection at coffee nurseries are appropriate, adhere to established multiplication protocols, and satisfy renovation goals	MAF/DNCPI/ DNPEIG	Review of selection procedures completed and improvements made
Activity 2.1.3	Maintain coffee nurseries and multiply new seedlings to be used in R&R initiatives	MAF/DNCPI/ DNPEIG	Increased number of new seedlings multiplied

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
Activity 2.1.4	Carry out public and private sector R&R programs on smallholder farms	MAF/DNCPI Producers Private sector CCT NGOs DP	X number of seedlings distributed X number of households initiating R&R X number of hectares rejuvenated
Activity 2.1.5	Complete an analysis of options for improving the management of state-owned coffee plantations and pilot the preferred option	MAF/DNCPI/ Ministry of Justice/ ND Land & Property	Improved management of state plantation lands
STRATEGIC OBJECTIVE 2.2	To promote an organic production model based on internationally recognized best practices		
Activity 2.2.1	Conduct a peer review of current existing coffee production training manuals and harmonize training content among all coffee stakeholders	MAF/DNCPI/ DNAHE NGOs Private sector Communities	Review of current existing coffee production training manuals completed and harmonized
Activity 2.2.2	Develop proper compost preparation and application manuals	MAF/DNCPI/ DNPEIG	Manuals and recommendations completed
Activity 2.2.3	Review and release an updated national coffee best practices manual to be adopted through the current government extension system	MAF/DNCPI/ DNPEIG	Manuals completed and distributed to extension agents
Activity 2.2.4	Identify organic and commercial fertilizer sources and develop recommended application rates	MAF/DNCPI/ DNPEIG Private sector input Suppliers	Commercial sources identified and supported
Activity 2.2.5	Conduct a cost-benefit analysis comparing organic production with production with commercial fertilizers, and production using inputs	MAF/DNCPI/ DNPEIG	Analysis completed and recommendations provided and disseminated
STRATEGIC OBJECTIVE 2.3	To provide increased extension services to smallholder coffee producers		
Activity 2.3.1	Review extension service models (public, private, NGO) and training delivery systems and develop a new model for partnerships between the government and private training providers.	MAF/DNCPI/ DNAHE NGOs Private sector	Review completed and recommendations made for improving the model

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
Activity 2.3.2	Map current extension service efforts among all private sector stakeholders and identify geographical areas of overlap and geographical areas lacking extension service resources	MAF/DNCPI/ DNAHE Private sector NGOs	Mapping completed and efforts coordinated
Activity 2.3.3	Review and harmonize the various public and private sector extension training publications to ensure a consistent approach to rejuvenation efforts and demonstration plots	MAF/DNCPI/ DNAHE Private sector NGOs	A harmonized approach adopted
Activity 2.3.4	Provide training to extension officers on organic coffee husbandry and on-farm processing methods including proper drying techniques	MAF/DNCPI/ DNAHE	Improved skills of extension agents
Activity 2.3.5	Initiate knowledge transfer of good agricultural practices to producers via training or other media, aimed at farmers directly or via extension/field officers	MAF/DNCPI/ DNAHE	Improved farmer knowledge and skills
STRATEGIC OBJECTIVE 2.4	To enhance support services to smallholder producers		
Activity 2.4.1	Pilot a program of direct deposit of coffee payments into deposit accounts in 2019	Financial service institutions MAF/DNCPI Private sector Communities	Increased number of producers participating in the pilot direct deposit program.
Activity 2.4.2	Design and pilot a cash-for-work program to incentivize plantation rehabilitation	Financial service Institutions MAF/DNCPI Private sector Communities DPs	Increased number of producers reached through cash-for-work program
Activity 2.4.3	Conduct an assessment of smallholder needs and design tailored financial products to meet demand as coffee sector productivity increases	Financial service institutions MAF/DNCPI Private sector Communities	Assessment completed and recommendations shared X Number of financial products introduced
Activity 2.4.4	Introduce services to improve the cash flow of farmers for short-term (crop) and long-term, and provide a safety net to manage risks (e.g., loans, inputs-for-coffee schemes, savings schemes, etc.)	Financial service institutions MAF/DNCPI Private sector Communities	Increased number of producers benefitting from improved services

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
STRATEGIC OBJECTIVE 2.5	To Increase the total hectares of coffee production		
Activity 2.5.1	Assess potential production areas for introducing a sustainable coffee agro-forestry system	MAF/DNCPI Private sector NGOs DPs	Potential areas identified and appropriate environmental assessments completed
Activity 2.5.2	Develop coffee nurseries in new areas to multiply adapted coffee varieties	MAF/DNCPI	Increased number of nurseries established
Activity 2.5.3	Provide seedlings and extension services to new coffee producers	MAF/DNCPI/ DNPEIG	Increased number of seedlings distributed
FOCUS AREA 3	Quality and Value Addition		
STRATEGIC OBJECTIVE 3.1	To establish a quality-driven production system		
Activity 3.1.1	Conduct a pilot activity to determine the gap between the actual quality and the quality potential of Timor-Leste coffees in selected locations	ACT DNCPI CQI Producers Private sector companies	Quality potential determined and baseline established to track performance on improving quality
Activity 3.1.2	Identify low-budget technology to address quality issues related to home processing and drying	ACT Int'l consultancy	New low-budget technology identified and piloted
Activity 3.1.3	Conduct studies on different parchment drying methods that can help maintain quality	MAF/DNCPI/ DNPEIG ACT Int'l consultancy	Appropriate drying methods identified
Activity 3.1.4	Introduce appropriate low-water processing and drying technologies to community coffee groups	NGOs Private sector	Increased number of community-level processing units installed
Activity 3.1.5	Provide training to extension agents on good harvest/post-harvest practices and impact on quality	DNCPI/DNAHE Int'l consultancy	Increased skill level of extension agents
Activity 3.1.6	Provide training through processing courses to improve basic technical skills for home-processed, community-based, and "buying-agent processed" coffees	ACT Int'l consultancy Private sector	Improvement in home processing quality

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
Activity 3.1.7	Introduce basic cupping demonstrations ("Know Your Cup") for producers to become aware of the link between their actions and cup quality	ACT Private sector NGOs	Increased producer understanding on basic cup quality
Activity 3.1.8	Provide more advanced Q cupping courses for processors and traders to develop a group of local Q graders	ACT Int'l consultancy	Increased number of Q graders certified
Activity 3.1.9	Launch a Timor-Leste regional quality profiling program	ACT DNCPI Int'l consultancy	Regional profiles developed based on cupping results
Activity 3.1.10	Create a mechanism for small grants program for community- and farm-level interventions to improve quality	MAF DPs	Increased number of grants awarded
STRATEGIC OBJECTIVE 3.2	To create greater value-addition opportunities such as premium-driven pricing mechanisms and sustainability and certification schemes		
Activity 3.2.1	Convene an industry-led working group to reach consensus on rolling out price incentive mechanisms based on cherry quality, green coffee evaluation, and/or cup quality	DNCPI ACT Private sector Producers	Price incentive mechanisms identified
Activity 3.2.2	Based on the above activity, introduce price incentive mechanisms into the supply chain	ACT Private sector	Voluntary standards and grades established
Activity 3.2.3	Map current areas of certified coffees (e.g., fair trade, certified organic, etc.) and assess market potential under various certification programs that could be achieved	MAF/DNCPI Private sector NGOs ACT	Statistics on current certification data collected and mapped
Activity 3.2.4	Encourage private-sector investment in community-level processing as a way to maintain quality and add value	ACT Private sector	Increase in investment in community-level processing
Activity 3.2.5	Conduct research to develop innovative country-wide certification schemes and review options for certification of farmers in order to minimize ongoing costs	MAF/DNCPI Private sector DPs	Innovative schemes identified and piloted

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
FOCUS AREA 4	Market Access and Promotion		
STRATEGIC OBJECTIVE 4.1	To increase the efficiency of the coffee supply chain by removing barriers to the movement of coffee and increase access to supporting markets and services		
Activity 4.1.1	Identify critical road-access points to ensure efficient flow of cherries and parchment from producing areas to processing stations	Private sector ACT	Map of most urgent road-choke points identified
Activity 4.1.2	Develop strategies to align private- and public-sector priorities in order to better advocate for improved road and transport infrastructure	MAF Private sector NGOs DPs	Strategies and evidence-based white papers developed
Activity 4.1.3	Conduct advocacy work to align private and public sector priorities to establish viable road and transport infrastructure	ACT Private sector MAF/others	Number of critical road repairs made; decrease in transportation costs for moving cherries and parchment to processing facilities
Activity 4.1.4	Conduct advocacy work on resolving land tenure issues related to coffee production, including resolving disputes between private investors and producers	ACT Private sector MAF/others	To be determined
STRATEGIC OBJECTIVE 4.2	To promote exports of Timor-Leste coffees to regional and global markets		
Activity 4.2.1	Develop a marketing and communications strategy for promoting Timor-Leste coffees to take advantage of Timor-Leste's strengths such as being the origin of the Hibrido de Timor (HDT) variety and having 100 percent organic forest coffee production	ACT MTCI MAF Private sector	A unified marketing and communication strategy developed
Activity 4.2.2	Support industry participation in regional and global coffee expos to promote Timor-Leste quality coffees	ACT Private sector MTCI	Increase in new market linkages
Activity 4.2.3	Identify and host international buyers at annual Festival Kafé Timor	ACT	Additional coffee deals signed

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
Activity 4.2.4	Conduct Timor-Leste coffee industry promotional tours to consuming markets	ACT Private Sector MTCI	Increased value of deals concluded as a result of marketing efforts
FOCUS AREA 5	Domestic Consumption and Coffee Tourism		
STRATEGIC OBJECTIVE 5.1	To develop a vibrant and profitable local retail coffee industry		
Activity 5.1.1	Provide training to the hospitality industry on proper coffee-brewing methods and drink preparation	Local retail coffee industry Int'l consultancies DG Tourism	Increased capacity of coffee industry personnel
Activity 5.1.2	Conduct professional barista training for the local retail coffee industry	Local retail coffee industry Int'l consultancies	Increased level of barista skills
Activity 5.1.3	Support barista competitions	Local retail coffee industry ACT	Number of competitions increased
Activity 5.1.4	Develop codes of practice and quality standards for retail coffees	Local retail coffee industry ACT	Voluntary code of practice developed and accepted by industry players
Activity 5.1.5	Conduct professional roasting training	Local retail coffee industry Int'l consultancies	Roasting skills increased
Activity 5.1.6	Promote retail sector participation in coffee promotional activities (Festival Kafé Timor)	Local retail coffee industry ACT	Increased number of retail coffee industry players benefitting from participating in events
STRATEGIC OBJECTIVE 5.2	To promote Timor-Leste as a coffee tourism destination		
Activity 5.2.1	Evaluate tourism market potential for coffee sector and select key locations for tourists: coffee farms, historical coffee sites (e.g., Híbrido de Timor location)	Local tourism industry Coffee communities	Sites selected Brochures developed Tours offered
Activity 5.2.2	Build and align a communications strategy with the rest of the coffee sector to highlight Timor-Leste coffees to tourists	Local tourism industry ACT DG Tourism	Communication strategy developed in conjunction with ACT

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
Activity 5.2.3	Offer high-quality coffee tourism tours in collaboration with local coffee communities and private-sector industry players	Local tourism industry Coffee communities Private sector	Number of coffee tourists increased
Activity 5.2.4	Work toward UNESCO recognition of Timor-Leste coffee world heritage site	MAF, Timor-Leste National Commission for UNESCO, ACT, DG Tourism	UNESCO recognition achieved
FOCUS AREA 6	Coffee Sector Management and Coordination		
STRATEGIC OBJECTIVE 6.1	To develop mechanisms for better coordination among stakeholders		
Activity 6.1.1	Strengthen the national coffee industry association (ACT) to serve as strong advocate for the industry and the voice of the Timor-Leste coffee sector	ACT MAF NGOs Private sector and other stakeholders	ACT remains compliant with its statute and continues to grow its membership and implement its mission and vision
Activity 6.1.2	Establish the NCSDP implementation team to support achievement of the goals and objectives of the plan	MAF ACT All coffee stakeholders	NCSDP implementation team established
Activity 6.1.3	Convene stakeholder-led focus area meetings to determine annual priorities for the National Coffee Sector Development Plan	MAF All coffee stakeholders	Annual action plans prepared during Q1 each year from 2019-2030
Activity 6.1.4	Hold a national forum on the issue of organic coffee production	MAF All coffee stakeholders DPs	A policy on use of organic vs. commercial fertilizers for coffee developed
STRATEGIC OBJECTIVE 6.2	To improve data collection and methods for tracking performance of the coffee sector		
Activity 6.2.1	Convene a multi-stakeholder committee to confirm the coffee production statistics for both area and volumes by variety and district for 2012-2018, and then every year thereafter	MAF/DNCPI Private sector NGOs DPs	Report on coffee production completed
Activity 6.2.2	Develop specific coffee-related questions that could be incorporated into future agricultural census surveys	MAF/DNCPI	Input provided Agricultural survey completed

FOCUS AREA/ STRATEGIC OBJECTIVE/ ACTIVITY	DESCRIPTION OF OBJECTIVE/ACTIVITY	RESPONSIBLE STAKEHOLDERS	EXPECTED RESULTS
Activity 6.2.3	Create a working group to evaluate production and export data to develop a coffee balance sheet for 2018 based on stakeholder input and data collected from customs and certificate of origin data	MAF/DNCPI Min Finance/NDE Private sector NGOs DPs	A coffee balance sheet prepared and verified by stakeholders
Activity 6.2.4	Establish a methodology for estimating on-farm production based on international best practices	MAF/DNCPI	Methodology developed and production survey completed
Activity 6.2.5	Create/roll out a unified platform for farm/farmer information management using ICT – smartphone/PDA/tablet for field data collection and entry, web-based data access	MAF/DNCPI Private Sector DP's	Pilot system rolled out and tested in 2019
Activity 6.2.6	Start a library with resources (technical papers, GIS files, etc.) about Timor-Leste coffee	MAF/DNCPI ACT	Library established and made available online

Note: Targets for activities with expected results indicated with an (x) will be determined during the action planning and budgeting process.



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5.

**PROPOSED
IMPLEMENTATION
FRAMEWORK**

Achieving the objectives of the NCSDP will require greater coordination among all stakeholders, greater public-private sector cooperation, and a commitment to increased capacity building and extension services. The roles, responsibilities, and functions of all the main partners, including public sector, private sector, NGOs, and donor organizations, are described below:

5.1 The roles, responsibilities, and functions of all the main partners

The Public Sector

The public sector plays an important role in assuring the success of the Timor-Leste coffee sector. Government policies and strategies for rural development can greatly impact the coffee sector. The MAF is designated the lead public sector agency to oversee the implementation of the NCSDP through the National Directorate for Coffee and Industrial Crops (DNCPI). A range of other government agencies play an important role in facilitating production, processing, and sale of coffee including the Ministry of Tourism, Commerce and Industry; the Ministry of Finance; the Ministry of Public Works, Transport, and Communications; the Secretary of State for Land and Property, and the Secretary of State for Cooperatives.

Educational Institutions

Educational institutions can play an important role in the NCSDP by developing coffee curriculums and courses in areas such as plant breeding, coffee agronomy, extension, and socioeconomic issues.

Producers and Coffee Communities

Coffee producers and coffee communities will play a critical role as the primary beneficiaries of coffee improvement programs. The willingness of smallholder producers to make the necessary investments in improving their own plantations (such as R&R) will determine to a large degree the success of the NCSDP.

Private Sector

The future of the Timor-Leste coffee sector is dependent on the continuation of a vibrant and profitable private sector. The sector is dominated by a few large firms that must share in the responsibility of improving the sector. In addition to the larger processors/traders, there are currently a wide variety of other coffee buyers and exporters.



NGOs

NGOs play a key role in providing support directly to producers, and some NGOs have helped producers to establish niche markets for their coffees. International specialty-coffee buyers often rely on NGOs as facilitators in developing market linkages with producer groups who lack the capacity to deal directly with the buyers without support.

Development Partners

Development partners can play a key role in supporting the activities under the NCSDP. In the past, efforts have mainly focused on supporting individual companies, but new projects are taking a more sector-wide approach. Increased donor coordination and close collaboration with public and private sector will help to improve the targeting of interventions and increase their impact.

Timor Coffee Association (ACT)

ACT was established as an industry association bringing together producers, exporters, roasters, traders, and representatives of NGOs or other donor sources interested in working together. The association aims to revitalize the coffee farm sector by becoming the source for industry standards, industry advocacy, media representation, and international brand development for Timorese coffee, while offering capacity development and best practices training for farmers and other members of the industry.

5.2 NCSDP Implementation Team (Taskforce)

To ensure maximum cooperation and collaboration, the implementation of the NCSDP will be coordinated by a NCSDP implementation team (NCSDP-IT) (Figure 6). The implementation team will be jointly chaired by nominated representatives from MAF and ACT and will be supported by a secretariat based in DNCPI. The secretariat will receive an annual budget¹ for coordinating a core set of NCSDP activities including preparation of the NCSDP annual action plans, collection of baseline data and implementation of the M&E framework, and coordination of sector working groups.

The NCSDP-IT will include a core group of key stakeholders, e.g., producers, processors, traders, coffee researchers, financial institutions, etc., who will meet on a quarterly basis to help guide the planning process and provide input to the monitoring and evaluation plan. They will also provide input regarding proposed changes in the policy environment that could improve competitiveness of the sector. In addition, the team will seek input from a group of supporting stakeholders including donors, NGOs, other

¹ For the first 2-3 years, the budget will come from donor support.

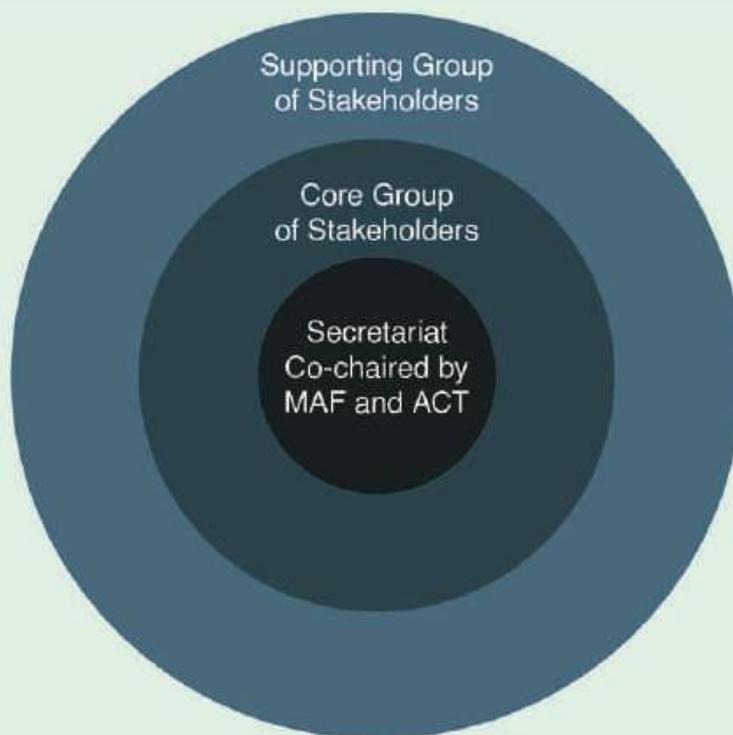
government entities that will have a direct impact on the successful implementation of the plan or through financial support and other areas of collaboration.

During the first quarter of every calendar year of the plan, the NCSDP-IT will coordinate the annual action planning and budgeting process in coordination with the core and supporting groups of stakeholders. The annual action plan will define specific activities and tasks to be carried out under each focus area and identify stakeholders who will be responsible for completing the work. The plan will also provide expected targets and milestones to be achieved. During the action planning process, a more detailed budget will be finalized for each year based on commitments from the public and private sector. The group will also identify any additional streams of funding such as donor support that may have become available.

Monitoring and Evaluation Working Group

Monitoring and evaluation are more than just collecting data and monitoring progress. To be truly useful, the data collected must be carefully analyzed and results shared among industry players. Also, knowing the starting point will help guide strategies or require changes in approach. For these reasons, a multi-stakeholder M&E Working Group will be established as part of the NCSDP-IT. The M&E Working Group should meet at least twice a year, producing consensus progress reports.

Figure 6. Makeup of the NCSDP Implementation Team



5.3 Estimated costs and Investments

The NCSDP is taking a long-term vision to improving the coffee sector and will be implemented over the next 12 years covering the period from 2019 to 2030. This effort will require a substantial investment in both reoccurring (fixed) operational and management costs to carry out the plan and additional investment costs required to improve the productivity of the sector through initiatives such as the rehabilitation and rejuvenation of coffee plantations. The goal of the plan is to double production from 10,000 tons per year to 20,000 tons by 2030. The budget (in Table 3) illustrates the indicative funding required to carry out a robust and ambitious plan.

The recurring costs have been estimated at \$500,000 for 2019 and gradually increasing by 5% per annum for the duration of the plan. A total of approximately \$ 8 million dollars is projected for covering these costs. Actual resource requirements will be updated as implementation of the plan progresses.

The NCSDP will set as a target to rehabilitate 30,000 hectares ($\frac{1}{2}$ of the 60,000 approximate total hectares of coffee production) at an estimated cost of \$1,000 per hectare. The total budget for this effort will be \$30 million dollars over the life of the plan. This has been allocated at \$2.5 million dollars per year for the 12-year period. The purpose of this investment on productivity is to supply planting material and agricultural inputs for rehabilitation of an average of 2,500 hectares of coffee farms per annum.



Table 3. General Budget Estimates

	Recurrent Costs	Investment on Productivity
2019	\$500,000	\$2,500,000
2020	\$525,000	\$2,500,000
2021	\$551,250	\$2,500,000
2022	\$578,813	\$2,500,000
2023	\$607,753	\$2,500,000
2024	\$638,141	\$2,500,000
2025	\$670,048	\$2,500,000
2026	\$703,550	\$2,500,000
2027	\$738,728	\$2,500,000
2028	\$775,664	\$2,500,000
2029	\$814,447	\$2,500,000
2030	\$855,170	\$2,500,000

RECURRENT COSTS		
	Recurrent Costs	Investment on Productivity
	\$7,958,564	\$30,000,000
TOTAL	\$37,958,564	



6.

**MONITORING
AND EVALUATION
PLAN**

Monitoring and Evaluation Plan for the National Coffee Sector Development Plan

The NCSDP calls for a rigorous monitoring and evaluation (M&E) plan that will track sector-wide progress on achieving the goals and strategic objectives of the NCSDP. Tracking progress will require commitment and adequate resources to carry out the work, as well as cooperation and collaboration among all stakeholders to ensure data is provided and shared in a timely manner.

As coffee is a perennial tree, many of the changes proposed, such as coffee tree rejuvenation, will require adequate time for the trees to come into full production. Therefore, the NCSDP sets in motion a longer-term vision for the coffee sector in which the impact will go well beyond the duration of the plan.

The MAF will have the responsibility of managing the monitoring and evaluation system that will become part of their overall M&E tracking systems. It will also require a strengthening of the data collection capacities of MAF personnel to enable the capture of reliable data and to prepare analysis that can be shared with stakeholders.

Key Performance Indicators

Performance monitoring consists of a number of related tasks. The M&E plan has identified a number of key performance indicators that will allow the coffee sector to monitor the NCSDP's performance over time. A key indicator specifies what output/outcome or result will be used to measure whether change has occurred.

Monitoring key performance indicators alone may not provide sufficient information to evaluate and assess performance. This work must be supplemented with other quantitative and qualitative data collection methods, such as conducting key informant interviews, holding focus group discussions, conducting small-scale targeted surveys, and conducting secondary research, or rapid assessments. The data will need to be transformed into useful information to be shared by a wide audience of stakeholders.

Baselines and Targets

The first step in setting up the plan is to start with reliable baselines and targets (see Table 4). These are necessary prerequisites to effectively gauge changes in performance. The Implementation Team should create a shared system among the responsible stakeholders of each indicator to complete the baseline.

Baselines

A baseline is the value of an indicator before any major intervention or activity has occurred. Baseline data will enable the NCSDP to track changes that occur during the life of the plan. Below are some of the key baselines that will need to be established.



Table 4. Key Baselines to Be Established

REQUIRED BASELINE	DISAGGREGATION	RESPONSIBLE STAKEHOLDERS	MEANS OF VERIFICATION
Overall coffee production in tons	<p>By Location By district sub-district Suco</p> <p>By Species Arabica Robusta</p>	MAF/DNCPI/DNAHE Private sector NGOs Communities Cooperatives	Production surveys Direct sampling Company records Cooperative records
Population of coffee trees on smallholder plantations per hectare	<p>By Location By district sub-district Suco</p>	MAF/DNCPI Private sector NGOs	Surveys Direct sampling
Number of households that have rejuvenated their coffee farms	<p>By Location By district sub-district Suco</p> <p>By Species Arabica Robusta</p>	MAF/DNCPI	Surveys Company Records
Smallholder coffee yields per hectare	<p>By Location By district sub-district Suco</p> <p>By Species Arabica Robusta</p>	MAF/DNCPI Private sector NGOs	Producer surveys Direct sampling
Total coffee sold by smallholders in kilograms	<p>By Buyer Agent In market Directly to processor</p> <p>By Type Cherries Parchment</p> <p>By Species Arabica Robusta</p>	MAF/DNCPI Private sector NGOs	Producer surveys Processor records NGO records
Price received by smallholder in US\$ for coffee purchased	<p>By Type Cherry Parchment</p> <p>By Species Arabica Robusta</p>	MAF/DNCPI Private sector NGOs	Producer surveys Processor records

REQUIRED BASELINE	DISAGGREGATION	RESPONSIBLE STAKEHOLDERS	MEANS OF VERIFICATION
Total coffee purchased from smallholder producers by processors volume in kilograms	By Location By district sub-district Suco By Species Arabica Robusta By Type Cherry Parchment	Private sector NGOs	Sales records/purchase logs NGO records
Amount of coffee sold as sustainable or certified	By Scheme Organic Fair trade Other By Species Arabica Robusta	Private sector ACT NGOs	Company records Customs entries
Current areas of certified coffees	By Location By district sub-district Suco By Species Arabica Robusta	MAF/DNCPI Private sector NGOs	GIS mapping Producer surveys
Number of smallholder producers using organic fertilizers (compost)	By Location By district sub-district Suco By Species Arabica Robusta	MAF/DNCPI Private sector NGOs	Producer surveys
Number of smallholder producers using Improved technologies	By technology	MAF/DNCPI Private sector NGOs	Producer surveys
Quality of coffees processed determined by green grading and cupping scores	Grade or classification Commercial Specialty By Species Arabica Robusta	ACT Private sector	Determined by green grading and cupping scores
Number of community-based processing units installed	By Location By district sub-district Suco	MAF Private sector NGOs	Community records Company records

REQUIRED BASELINE	DISAGGREGATION	RESPONSIBLE STAKEHOLDERS	MEANS OF VERIFICATION
Total volume of coffees exported (tons)	By Location By district sub-district Suco By Exporter Company NGO Other By Variety Arabica Robusta	Customs MCIA MAF/DNCPI/quarantine Private sector NGOs	Customs records Company records Certificate of origin records Export permit records
Value of coffees exported (US\$)	By Location By district sub-district Suco By Exporter Company NGO By Species Arabica Robusta	Customs MTCI MAF/DNCPI/quarantine Private sector NGOs	Customs records Company records Certificate of origin records Export permit records
Average value/kg for coffees exported (US\$ cents per kg)	Grade/classification Commercial Organic Sustainable By Species Arabica Robusta	Customs MTCI MAF/DNCPI/quarantine Private sector NGOs	Customs records Company records Certificate of origin records Export permit records
Quality gap Potential Actual	By Location By district sub-district Suco By Species Arabica Robusta	ACT Private-sector companies NGOs DPs	Pilot assessment Direct sampling
Volume of coffees sold in domestic markets	By Type Green Roasted By Species Arabica Robusta	ACT Private coffee shops Private companies	Informal surveys Company records on domestic sales
Value of domestically consumed coffees in retail coffee shops	By Drink Type	Retail coffee industry ACT	Surveys of coffee shops Company records on domestic sales
Number of tourists purchasing coffee tourism tours	By Month	Tour operators ACT	Company records

Targets

Targets are defined as specific, planned results to be achieved within a specific timeframe with a given level of resources. Targets are shown for the life of the plan.

Based on the proposed objectives and activities, the M&E plan has identified a number of illustrative performance indicators that will allow the coffee sector to monitor the NCSDP's performance over time. Below is Table 5, showing the objectives, the key indicators, responsible stakeholders and illustrative targets. As targets and timeframes may be contingent on available funding, annual targets can be established and revised as necessary during the annual action planning process.

Table 5. Key Indicators and Targets

RESULT/ STRATEGIC OBJECTIVE	KEY INDICATOR	RESPONSIBLE STAKEHOLDERS	TARGETS
Focus Area 1: Research and Development Enhanced	<ul style="list-style-type: none"> MAF's institutional capacity to conduct coffee research as measured by an institutional assessment tool 	MAF/DNCPI Private sector NGOs DPs	<ul style="list-style-type: none"> A coffee research unit established within MAF With adequate funding and staffing. Major capacities improved (human capital, financial, internal processes, service delivery, etc.)
Strategic Objective 1.1	<ul style="list-style-type: none"> Number of agronomic and socioeconomic assessments completed 	MAF/DNCPI	<ul style="list-style-type: none"> At least x assessments completed yearly Germplasm garden of local variety collections established with x variety selections WCR International Multilocation Variety Trial initiated
Strategic Objective 1.2	<ul style="list-style-type: none"> Number of staff trained 	MAF/DNCPI Private sector NGOs DPs	<ul style="list-style-type: none"> At least x staff trained yearly Skills and capacity of coffee staff strengthened GIS system for data collection piloted
Focus Area 2: Production and Productivity Increased	<ul style="list-style-type: none"> Volume of coffee production Area of coffee production Value of coffee production 	MAF/DNCPI Private sector NGOs DPs	<ul style="list-style-type: none"> Volume of total production increased Value of the total production increased over baseline values
Strategic Objective 2.1	<ul style="list-style-type: none"> Area of smallholder coffee trees rejuvenated Number of households who have rejuvenated their coffee farms 	MAF/DNCPI Private sector NGOs DPs	<ul style="list-style-type: none"> Mother stock trees for seedling multiplication identified X seedlings produced At least x households per year have rejuvenated their farms

RESULT/ STRATEGIC OBJECTIVE	KEY INDICATOR	RESPONSIBLE STAKEHOLDERS	TARGETS
Strategic Objective 2.2	<ul style="list-style-type: none"> Number of training manuals and materials produced or updated Number of demonstration sites established Number of technology transfer and training programs conducted 	MAF/DNCPI Private sector NGOs DPs	<ul style="list-style-type: none"> Biannual updating of training and instruction manuals At least x number of demonstration sites established X number of technology transfer and training programs conducted that are tied to coffee research recommendations
Strategic Objective 2.3	<ul style="list-style-type: none"> Number of extension agents trained Number of smallholder producers trained in GAP 	MAF/DNCPI/D NAHE Private sector extension services NGOs DPs	<ul style="list-style-type: none"> At least x number of agents trained At least x number of producers trained on GAPs Increase in the number of producers receiving extension services Increased adoption rates for improved practices Increased capacity of extension agents to deliver effective extension services
Strategic Objective 2.4	<ul style="list-style-type: none"> Number of pilot direct-deposit programs established Number of smallholder producers participating in cash-for-work programs Number of new financial services offered 	MAF/DNCPI/ Private sector NGOs DPs	<ul style="list-style-type: none"> X number of producers enrolled in cash-for-work rejuvenation programs each year Increased level of financial inclusion among smallholders, both in terms of access and usage Increased total volume of formal household savings among smallholders Decrease in the cost of doing business with smallholders through improved payment mechanisms
Strategic Objective 2.5	<ul style="list-style-type: none"> Area of new production Number of seedlings distributed 	MAF/DNCPI/ Private sector NGOs DPs	<ul style="list-style-type: none"> X hectares of new coffee trees planted X seedlings distributed
Focus Area 3: Quality and Value Addition Enhanced	<ul style="list-style-type: none"> Value of Timor-Leste coffees Volumes of specialty-grade coffees 	ACT Private sector NGOs DPs	<ul style="list-style-type: none"> Improved coffee quality demonstrated by an increase in the share of coffee sold with price premiums on export markets (x% increase by 2030)
Strategic Objective 3.1	<ul style="list-style-type: none"> Cupping quality of Timor-Leste coffees 	ACT Private companies NGOs Int'l cuppers	<ul style="list-style-type: none"> Average cupping scores increased by x points

RESULT/ STRATEGIC OBJECTIVE	KEY INDICATOR	RESPONSIBLE STAKEHOLDERS	TARGETS
Strategic Objective 3.2	<ul style="list-style-type: none"> • Volume of certified coffees exported • Value of certified coffees exported • Number of producers under certification schemes 	Private sector NGOs DPs	<ul style="list-style-type: none"> ▪ x% increase in exports of certified coffees ▪ x% increase in value of certified coffees over non-certified coffees ▪ x% increase in the number of producers under certification schemes
Focus Area 4: Market Access and Promotion	<ul style="list-style-type: none"> • Total costs of processing and transporting coffee from farm gate to port • Number of marketing and communication documents 	Gov't of Timor-Leste MAF/DNCPI Private sector	<ul style="list-style-type: none"> ▪ Decrease in the average time and costs needed to move coffee from farm gate to FOB by x% ▪ Marketing and communication strategy developed and revised annually
Strategic Objective 4.1	<ul style="list-style-type: none"> • Cost of transporting coffee from farm gate to port • Kilometers of improved roads 	ACT DNCPI MCIA Private sector	<ul style="list-style-type: none"> ▪ Transport costs reduced by x% over baseline ▪ X number of kilometers of rural roads rehabilitated in the coffee-growing areas
Strategic Objective 4.2	<ul style="list-style-type: none"> • Cupping scores for internationally judged Timor-Leste coffees • Number of buyers attending events • Number of market linkages facilitated 	ACT DNCPI MTCI Private sector	<ul style="list-style-type: none"> ▪ Increase in average cupping scores of Timorese coffees (judged during annual cupping competitions) ▪ Increase in the number of international buyers attending the annual Festival Kafé Timor ▪ Increase in the number of market linkages facilitated as a result of promotional activities
Focus Area 5: Domestic Consumption and Coffee Tourism	<ul style="list-style-type: none"> • Volume of Timor-Leste coffees sold domestically • Value of Timor-Leste coffees sold domestically 	ACT Private coffee shops Private companies	<ul style="list-style-type: none"> ▪ At least x% increase in volume of domestic consumption ▪ At least x% increase in value of domestic consumption
Strategic Objective 5.1	<ul style="list-style-type: none"> • Number of coffee-brewing and roasting trainings delivered • Number of staff trained (formal training programs) 	ACT Private coffee shops Private companies	<ul style="list-style-type: none"> ▪ Increase in the total number of trainings provided in processing, roasting, and barista training ▪ Increase in the number of trained professionals in retail coffee industry

RESULT/ STRATEGIC OBJECTIVE	KEY INDICATOR	RESPONSIBLE STAKEHOLDERS	TARGETS
Strategic Objective 5.2	<ul style="list-style-type: none"> Number of coffee tourists Number of packages developed Status of UNESCO World Heritage application 	Tour companies ACT DG Tourism	<ul style="list-style-type: none"> X % increase in the number of coffee tourists by 2030 X % increase in the number of packages offered by 2030 UNESCO World Heritage site application approved by 2030
Focus Area 6: Sector Management and Coordination	<ul style="list-style-type: none"> Number of Sector Management and Coordination events 	All coffee stakeholders	<ul style="list-style-type: none"> Increase in the number of stakeholder meetings held to coordinate activities in the first years of the plan
Strategic Objective 6.1	<ul style="list-style-type: none"> Number of management and coordination plan completed (Action Plans) Number of monitoring and evaluation reports 	All coffee stakeholders	<ul style="list-style-type: none"> Successful development and implementation of Annual Action Plan Increase in the monitoring and evaluation of performance reports
Strategic Objective 6.2	<ul style="list-style-type: none"> Annual production estimates approved by stakeholders Number of performance reports released Coffee balance sheet developed annually 	All coffee stakeholders	<ul style="list-style-type: none"> Increase in the accuracy and reliability of annual coffee production estimates Annual coffee performance statistics prepared through industry consensus Coffee balance sheet prepared annually



Annexes

The NCSDP was developed by conducting a series of studies and assessments to support the development of the plan. The following annexes can be found in this URL: <http://www.coffeeinstitute.org/about-us/resources/> for those seeking background data on the Timor-Leste coffee sector and who would like to review a detailed analysis of the specific findings that went into developing the NCSDP.

These documents include:

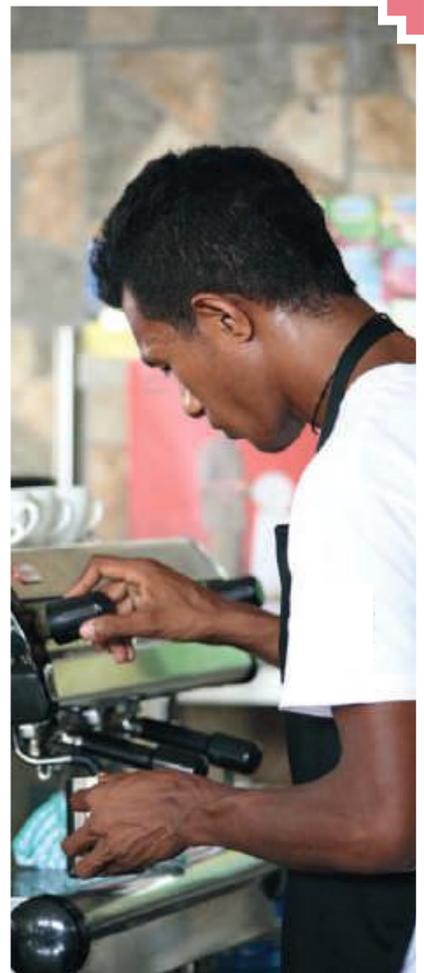
1. Assessment of Current Systems for Data Collection, Monitoring, and Reporting on Coffee Sector Performance and Trends in Timor-Leste. 2018. Coffee Quality Institute 2018.
2. Baseline Assessment and Gap Analysis of Systems for Training Extension Workers and Delivering Extension Services to Farmers in Timor-Leste. Coffee Quality Institute 2018.
3. Baseline Assessment and Gap Analysis of Current Systems for Applied Agricultural Research. Coffee Quality Institute 2018.
4. Inception Report: Support for Preparation of a National Coffee Sector Development Plan for Timor-Leste. Coffee Quality Institute 2018.
5. Interim Report: Support for Preparation of a National Coffee Sector Development Plan for Timor-Leste. Coffee Quality Institute 2018.
6. Pilot Activity Report: Quality Gap Assessment in Timor-Leste. Coffee Quality Institute 2018.

How this NCSDP was developed

Regional and National Workshops

The NCSDP was developed as a collaborative effort between the public sector and private sector coffee industry stakeholders. To get input from producers and local industry stakeholders, 2 regional-level workshops were held in Gleno and Maubisse in August 2017.

In addition, 3 national-level workshops were held in Dili during 2017-2018 to gather information, share findings, and to seek input from a wide range of industry stakeholders. These included:



- Inception Workshop: Support for Preparation of a National Coffee Sector Development Plan for Timor-Leste held on August 14-15, 2017.
- Interim Workshop: Coffee Sector Planning Workshop held on February 2, 2018.
- Final Planning Workshop: National coffee Sector Planning Workshop held on December 13, 2018

Working Group Sessions

The NCSDP could not have been prepared without the input and participation from the many coffee stakeholders who participated in a series of working group sessions held in Dili during preparation of the plan. The working groups were comprised of participants with a strong interest in one of the main focus areas. The groups were tasked with developing the strategic objectives, key initiatives and major indicators of success for each focus area. During these workshops, the main components of the plan were developed and each group developed short-term, medium-term and long term goals for their focus area. Minutes from these meetings are included as part of the resource documentation.

Pilot Activity: Quality Gap Analysis

With the support of ACT and through volunteer training by Raw Material, producers from two communities in Ermera and three communities from Maubisse produced coffee samples under four different controlled processing protocols (natural, honey, washed with dry fermentation, wash with underwater fermentation), in order to assess the quality potential of both regions. The samples were cupped in Portland, OR (USA), by three Q Graders. Results can be found in the corresponding annexed report, included in the online files referenced above.



