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Report No: PAD1472

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED GRANT FROM THE
GLOBAL AGRICULTURE AND FOOD SECURITY PROGRAM TRUST FUND
IN THE AMOUNT OF US\$21.0 MILLION
TO THE
DEMOCRATIC REPUBLIC OF TIMOR - LESTE
FOR A
SUSTAINABLE AGRICULTURE PRODUCTIVITY IMPROVEMENT PROJECT

October 25, 2016

Agriculture Global Practice
East Asia and Pacific Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective September 14, 2016)

Currency Unit = US\$1
100 Centavos = US\$1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

| | |
|-------|--|
| ALGIS | Agriculture Land Use Geographic Information System |
| BPF | Beneficiaries Participation Framework |
| CBNRM | Community-based natural resource management |
| CDD | Community-driven development |
| CSO | Civil Society Organization |
| DFAT | Department of Foreign Affairs and Trade (Australia) |
| DLI | Disbursement Linked Indicator |
| DPSMU | Development Partners Support Management Unit (within MAF) |
| ERR | Economic Rates of Return |
| ESMF | Environmental and Social Management Framework |
| EU | European Union |
| FAO | Food and Agriculture Organization of the United Nations |
| FIES | Food Insecurity Experience Scale |
| GAFSP | Global Agriculture and Food Security Program |
| ha | Hectare (10,000 m ²) |
| IDF | Institutional Development Fund |
| IFAD | International Fund for Agriculture Development |
| JICA | Japan International Cooperation Agency |
| MAF | Ministry of Agriculture and Fisheries |
| M&E | Monitoring and Evaluation |
| MIRT | Institutional Reform and Transformation of MAF (World Bank-financed) |
| MIS | Management Information System |
| MIU | Municipality Implementation Unit |
| MOF | Ministry of Finance |
| NDPP | National Directorate of Policy and Planning |
| NGO | Non-Government Organization |

| | |
|--------|--|
| PDO | Project Development Objective |
| PNDS | <i>Programa Nasional Dezenvolvimentu Suku</i> (National Program for Village Development) |
| PMU | Project Management Unit |
| PIM | Project Implementation Manual |
| PSC | Project Steering Committee |
| R&D | Research and Development |
| SAPIP | Sustainable Agriculture Productivity Improvement Project |
| SCADPs | Sustainable Agriculture Community Development Plans |
| SDP | Strategic Development Plan (national-level) |
| SEO | Suco Extension Officer |
| SLM | Sustainable Land Management |
| SoL | Seeds of Life (Program) (DFAT-financed) |
| TLAAC | Timor-Leste Agriculture Advisory Council |
| TLARDI | Timor-Leste Agriculture Research and Development Institute |
| TLMSP | Timor-Leste Maize Support Program (IFAD-financed) |
| UNDP | United Nations Development Program |
| WADP | Watershed/Sub-Watershed Agricultural Development Plan |
| WSMC | Watershed/Sub-Watershed Management Council |

| | |
|----------------------------------|------------------|
| Regional Vice President: | Victoria Kwakwa |
| Country Director: | Michel Kerf |
| Senior Global Practice Director: | Juergen Voegelé |
| Practice Manager: | Nathan M. Belete |
| Task Team Leader: | Gayatri Acharya |

REPUBLIC OF TIMOR-LESTE
Sustainable Agriculture Productivity Improvement Project

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PAD DATA SHEET*Timor-Leste**Sustainable Agriculture Productivity Improvement Project (P155541)***PROJECT APPRAISAL DOCUMENT***EAST ASIA AND PACIFIC**0000009239*

Report No.: PAD1472

| Basic Information | | | |
|---|---|-----------------------------------|--|
| Project ID P155541 | EA Category B - Partial Assessment | Team Leader(s) Gayatri Acharya | |
| Lending Instrument Investment Project Financing | Fragile and/or Capacity Constraints [X] | | |
| | - Fragile States | - Small States | |
| | Financial Intermediaries [] | | |
| | Series of Projects [] | | |
| Project Implementation Start Date 31-Oct-2016 | Project Implementation End Date 28-Feb-2022 | | |
| Expected Effectiveness Date 30-Dec-2016 | Expected Closing Date 31-Aug-2022 | | |
| Joint IFC No | | | |
| Practice Manager/Manager Nathan M. Belete | Senior Global Practice Director Juergen Voegele | Country Director Michel Kerf | Regional Vice President Victoria Kwakwa |
| Approval Authority | | | |
| Approval Authority RVP Decision please explain The Project is financed through the GAFSP Trust Fund. | | | |
| Borrower: Ministry of Agriculture and Fisheries | | | |
| Responsible Agency: Ministry of Agriculture and Fisheries (MAF), Government of Timor-Leste | | | |
| Contact: | Cesar Jose Da Cruz | Title: | Secretary General of MAF |

Telephone No.: 67077253156

Email:

Safeguards Deferral (from Decision Review Decision Note)Will the review of Safeguards be deferred? Yes No**Project Financing Data(in USD Million)** Loan IDA Grant Guarantee Credit Grant Other

Total Project Cost: 21.00 Total Bank Financing: 0.00

Financing Gap: 0.00

| Financing Source | Amount |
|--|--------|
| Global Agriculture and Food Security Program | 21.00 |
| Total | 21.00 |

Expected Disbursements (in USD Million)

| Fiscal Year | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 0000 | 0000 | 0000 |
|-------------|------|------|-------|-------|-------|-------|-------|------|------|------|
| Annual | 1.00 | 4.00 | 5.00 | 5.00 | 5.00 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cumulative | 1.00 | 5.00 | 10.00 | 15.00 | 20.00 | 21.00 | 21.00 | 0.00 | 0.00 | 0.00 |

Institutional Data**Practice Area (Lead)**

Agriculture

Contributing Practice Areas

Climate Change, Health, Nutrition & Population, Social, Urban, Rural and Resilience Global Practice, Water

Proposed Development Objective(s)

The Project Development Objective (PDO) is to increase the productivity and marketed production of smallholder agriculture in selected geographical locations in Timor-Leste.

Components

| Component Name | Cost (USD Millions) |
|---|---------------------|
| Integrated watershed/sub-watershed agriculture development planning | 0.70 |
| Smallholder organization, advisory support and training | 3.10 |
| Sustainable watershed/sub-watershed management and support to farmer groups | 9.30 |

| | |
|---|------|
| Strengthening MAF's Services, Planning, Programming, Coordination and Monitoring and Evaluation Functions | 3.90 |
| Project management and monitoring | 4.00 |
| Contingency for disaster risk response | 0.00 |

Systematic Operations Risk- Rating Tool (SORT)

| Risk Category | Rating |
|---|-------------|
| 1. Political and Governance | Substantial |
| 2. Macroeconomic | Substantial |
| 3. Sector Strategies and Policies | Substantial |
| 4. Technical Design of Project or Program | Moderate |
| 5. Institutional Capacity for Implementation and Sustainability | High |
| 6. Fiduciary | Substantial |
| 7. Environment and Social | Moderate |
| 8. Stakeholders | Moderate |
| 9. Other | |
| OVERALL | Substantial |

Compliance

Policy

| | | |
|---|-----------|----------|
| Does the project depart from the CAS in content or in other significant respects? | Yes [] | No [X] |
| Does the project require any waivers of Bank policies? | Yes [] | No [X] |
| Have these been approved by Bank management? | Yes [] | No [X] |
| Is approval for any policy waiver sought from the Board? | Yes [] | No [X] |
| Does the project meet the Regional criteria for readiness for implementation? | Yes [X] | No [] |

Safeguard Policies Triggered by the Project

| | Yes | No |
|--|-----|----|
| Environmental Assessment OP/BP 4.01 | X | |
| Natural Habitats OP/BP 4.04 | X | |
| Forests OP/BP 4.36 | X | |
| Pest Management OP 4.09 | X | |
| Physical Cultural Resources OP/BP 4.11 | X | |
| Indigenous Peoples OP/BP 4.10 | X | |
| Involuntary Resettlement OP/BP 4.12 | X | |

| | | |
|--|---|---|
| Safety of Dams OP/BP 4.37 | X | |
| Projects on International Waterways OP/BP 7.50 | X | |
| Projects in Disputed Areas OP/BP 7.60 | | X |

Legal Covenants

| Name | Recurrent | Due Date | Frequency |
|----------------------------|-----------|----------|------------|
| Institutional Arrangements | X | | CONTINUOUS |

Description of Covenant

Obligation of MAF to maintain, throughout the Project implementation period, a Project implementation team with functions, staffing and resources satisfactory to the Association

| Name | Recurrent | Due Date | Frequency |
|-------------------------------|-----------|----------|------------|
| Project Implementation Manual | X | | CONTINUOUS |

Description of Covenant

Obligation of the Recipient and the MAF to ensure that the Project is carried out in accordance with the Project Implementation Manual, and not amend, waive or abrogate any provisions of the manual unless the Association agrees otherwise in writing.

| Name | Recurrent | Due Date | Frequency |
|-------------------------------|-----------|----------|-----------|
| Annual Work Plans and Budgets | X | | Yearly |

Description of Covenant

Obligation of the MAF to ensure that the Association is furnished, not later than December 31 of each year, an annual work plan and budget for the Project, satisfactory to the Association, covering the activities and expenditures (including counterpart funding) proposed for the subsequent year of Project implementation, and thereafter implement the Project in accordance with such plan and budget.

| Name | Recurrent | Due Date | Frequency |
|-------------------------------------|-----------|----------|------------|
| Environmental and Social Safeguards | X | | CONTINUOUS |

Description of Covenant

Obligation of the MAF to ensure that the Project is carried out in accordance with the provisions of the ESMF and the other safeguard provisions of the legal agreements, not amend, abrogate or waive any of their provisions unless the Association agrees otherwise, and report on their status of implementation as part of the semi-annual progress reports.

Team Composition

Bank Staff

| Name | Role | Title | Specialization | Unit |
|-----------------|-------------------------------------|----------------|----------------|-------|
| Gayatri Acharya | Team Leader (ADM Responsible) | Lead Economist | Economist | GSU02 |

| | | | | |
|------------------------------|--|--------------------------------------|-----------------------------------|-------|
| Manuela Da Cruz | Procurement Specialist (ADM Responsible) | Procurement Specialist | Procurement | GGO02 |
| Robert J. Gilfoyle | Financial Management Specialist | Sr Financial Management Specialist | Financial Management | GGO20 |
| Brenna Fae Moore | Team Member | Consultant | Economist | GFA02 |
| Chau-Ching Shen | Team Member | Senior Finance Officer | Disbursements | WFALN |
| Claire Marion Forbes | Safeguards Specialist | Consultant | Environment and social safeguards | GSU02 |
| Cornelio Quintao De Carvalho | Team Member | Team Assistant | Team Assistant | EACDF |
| Duangrat Laohapakakul | Counsel | Senior Counsel | Senior Counsel | LEGES |
| Loren Jayne Atkins | Counsel | Associate Counsel | Lawyer | LEGES |
| Maria Isabel Alda Da Silva | Team Member | Operations Analyst | Operations | EACDF |
| Nicholas John Valentine | Safeguards Specialist | Consultant | Environment safeguards | GSU02 |
| Ross James Butler | Safeguards Specialist | Senior Social Development Specialist | Safeguards | GSU02 |

Extended Team

| Name | Title | Office Phone | Location |
|--------------|-----------------------|--------------|----------|
| Philip Young | Agriculture Economist | 61438110946 | |

Locations

| Country | First Administrative Division | Location | Planned | Actual | Comments |
|---------|-------------------------------|----------|---------|--------|----------|
| | | | | | |

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ? Consultants will be required

I. STRATEGIC CONTEXT

A. Country Context

1. **Timor-Leste has made great progress in its 14 years of independence, but its agriculture sector struggles to feed 1.2 million people and sustain the livelihoods of 75 percent of the population.** While the country has moved away from conflict and violence, Timor-Leste is still fragile in its economic and social development. Economic growth in the oil sector has been hit by declining international prices, with double digit growth in 2011 falling to 5 percent in 2012 and a contraction of 18.7 percent in 2013. Non-oil GDP growth also declined from double digits between 2007 and 2010 to 2.8 percent in 2013. Non-oil growth is projected to recover to around 6 percent in 2014 and 4 percent in 2015, but remains below the levels seen over the last decade. Public sector spending has been the key driver of growth with elevated government spending directly raising growth in the local private construction and service sectors. This has created opportunities for local suppliers for materials and labor. Overall, 40 percent of the growth from 2010 to 2013 was due to public administration, while another 30 percent was seen in the public-sector led construction sector. Consumer price inflation, which was running at above 10 percent in 2012 and 2013, dropped drastically to 0.7 percent on average over 2014 as a stronger dollar brought down the prices of imported goods and remained low at 0.6 percent over 2015.

2. **The rural environment is under severe pressure, with rain fed land used for unsustainable small-scale subsistence farming, including the clearance of large areas on steep slopes with infertile soils.** Agricultural holdings tend to be small with 97 percent of plots being under one hectare. ‘Slash and burn’ agriculture persists, and there is virtually no return of organic matter into cropping systems. Irrigated areas are more stable and less prone to degradation. Livestock are predominantly free-ranging, and land is typically over-stocked. Staple food production is declining, with an annual deficit of around 100,000 metric tonnes in 2011; there is seasonal food insecurity, with 90 percent of rural households exhausting their home-grown maize and rice supplies by September of each year; and there are high rates of malnutrition, with stunting in 58 percent of children under the age of five. For about 40 percent of the population, food consumption levels remain inadequate, according to the 2013 Food and Nutrition Survey.

B. Sectoral and Institutional Context

3. **The agricultural sector in Timor-Leste faces a number of challenges including severe natural resource depletion and degradation.** The sector bears a huge responsibility for food and nutrition security, rural poverty reduction, and generation of non-oil employment – but struggles with low productivity, poor infrastructure, weak inter-sectoral coordination, and a variable climate. Agricultural productivity is low due to poor agricultural management practices, particularly with respect to soil and water management; inadequate public and private investment; limited access to credit; and substantial post-harvest losses due to inappropriate storage. Although the Ministry of Agriculture and Fisheries (MAF) has 2,126 staff, it is constrained by its operational budget and staff skills from addressing these barriers effectively, and the broader decentralization process will take time to establish clear roles and responsibilities. Notwithstanding these challenges and constraints, there are many opportunities in the sector, and the MAF Strategic Plan (MAFSP) outlines how Government intends to realize this potential.

4. **MAF has developed five programs to address the MAFSP strategic objectives.** These objectives and programs relate to (i) sustainably increasing the production and productivity of key crops; (ii) improving market access and value addition; (iii) improving the enabling environment of the agricultural sector; (iv) strengthening the capacity and performance of MAF; and (v) enhancing the capacity of primary producers to use natural resources sustainably.

5. **The proposed project, to be funded under the Global Agriculture and Food Security Program (GAFSP), supports these objectives for the agriculture sector.** It is also aligned with the priorities outlined in the Program of the VIth Constitutional Government (2012-2017), namely to: (i) improve the level of food security for the rural population, reduce hunger and malnutrition, and raise self-reliance; (ii) increase value addition for agriculture, fisheries and forestry products by fostering processing and marketing; (iii) achieve sustainable production and management of natural resources; (iv) contribute to the balance of trade by earning revenue from commodity exports, and by substituting imports; and (v) increase incomes and employment in rural areas.

6. **The project proposal was submitted by MAF to the GAFSP in June 2013 during the Third Call for Proposals for the GAFSP Public Sector Window. Despite its strength it was left unfunded at the time due to a lack of resources. The Steering Committee subsequently awarded a US\$21 million grant to Timor-Leste in November 2014.** The process of writing and submitting the proposal followed a fully consultative and collaborative process, including with communities, government and development partners, as required by the GAFSP guidelines. The proposal adheres to the strategic objectives of MAF and complements programs being financed by other development partners. The project has a duration of six years, and is expected to begin implementation in late 2016 and close in 2022.

C. Higher Level Objectives to which the Project Contributes

7. **The project directly supports relevant objectives of the World Bank Group's Country Partnership Strategy (CPS) 2012-2017 as discussed by the Board of Executive Directors in February 2013¹.** The CPS is fully aligned with the Government of Timor-Leste's Strategic Development Plan (SDP) and sets out a focused program of work grouped around the SDP pillars. These cover: (i) investing in health and education services and social protection programs; (ii) building core infrastructure to connect communities to services and markets and reduce transaction costs; and (iii) supporting the development of a non-oil economy by improving the enabling environment for private sector investment and augmenting the productivity and value-added of agriculture. The Project is included in the CPS and supports the third pillar in particular. Moreover, this Project will foster partnerships with several development agencies working in the sector.

8. **The proposed Project also directly responds to the World Bank Group Strategic Goals: to end extreme poverty and boost shared prosperity in a sustainable manner.** The Project will target poor communities by focusing on municipalities where food insecurity is high and the potential to increase agriculture productivity is considerable. Citizen engagement and gender inclusion are at the core of the proposed design to ensure that the benefits of the project contribute to shared prosperity in the target communities.

¹ The CPS was extended to 2018 during the Performance and Learning Review (mid-term review) of the CPS.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

9. The Project Development Objective (PDO) is to increase the productivity and marketed production of smallholder agriculture in selected geographical locations in Timor-Leste.

B. Project Beneficiaries

10. The Project will directly assist at least 16,500 rural farm households, reaching approximately 85,000 direct beneficiaries². The main modality of support will be through farmer groups – existing groups where possible and formation of new groups where needed. It is expected that about 550 farmer groups, with an average size of 30 members, will benefit from planning and capacity building support. The Project will focus on smallholder farmers that are (i) willing to participate in the Project activities; (ii) have stable access to land with potential to increase production; and (iii) have access to water resources (including rainwater) which can be developed. The Project will ensure that at least 30 percent of the farmer group members are women (including the formation of women-only farmer groups where appropriate), and that at least 10 percent are youths³.

11. The Project will be implemented in four watersheds, located in the municipalities of Lautem (Raumoco watershed), Ainaro/Covalima (Belulik watershed), Liquiça/Ermera/Bobonaro (Loes watershed), and Oecusse⁴ (Tono watershed). These watersheds have been selected on the basis of the extent of food and nutrition insecurity; complementarity with other development partner and Government programs; and potential for small-scale agriculture development. The number of target areas has increased from two in the GAFSP-approved proposal to four, to acknowledge that the Project's design can successfully build on on-going efforts by development partners and government; and to support the scaling up of successful pilots to new watersheds.

12. The Project will also indirectly benefit a larger number of households by supporting watershed/sub-watershed and community-level agricultural development planning that will benefit all communities in a watershed (not only those receiving training or small-scale investments). Spillover effects are expected as the adoption of new agricultural practices and technologies by the direct beneficiaries begins to show results. Furthermore, by strengthening MAF's planning, programming, monitoring and evaluation functions, the Project may act as a catalyst for a more effective and responsive agriculture sector for the whole of Timor-Leste.

C. PDO Level Results Indicators

13. SAPIP has three key indicators at the PDO level. By the end of the Project: (i) increase in farm productivity (yield per hectare) for direct beneficiary households by at least 20 percent for major crops⁵; (ii) share of production that is lost post-harvest will have been reduced by at least 20 percent

² Based on an average household size of 5.3 individuals in the target areas, as per the 2010 National Census. Direct beneficiaries are assumed to be members of households supported by the project either through capacity building and/or access to improved equipment and watershed improvement grants.

³ Defined as those aged 16 to 30 years, as per the Timor-Leste National Youth Policy (2007).

⁴ Now a Special Zone of Social Market Economy (ZEEMS). The Minister of MAF has endorsed this selection.

⁵ These crops will be identified during the baseline survey and may include grains, legumes, vegetables and coffee.

for major crops; and (iii) share of total production⁶ sold on the market will have increased by at least 20 percent.

III. PROJECT DESCRIPTION

A. Project Components

14. **Component 1: Integrated watershed/sub-watershed agriculture development planning** (Total Cost: US\$710,000). The objective of this component is to improve agriculture development planning within targeted watersheds. Watershed/Sub-Watershed Management Councils will be formed, and Watershed/Sub-Watershed Agriculture Development Plans will be prepared to guide planning at the watershed level. Detailed sub-watershed level Sustainable Community Agriculture Development Plans will guide investments at the community level.

15. *Sub-component 1.1: Formation and Strengthening of Watershed/Sub-Watershed Management Councils* (WSMCs). Experience from the Raumoco watershed in Lautem⁷, and from the Comoro and Laclo watersheds in Aileu⁸, confirms the importance of rural communities forming such councils as essential support for village development and environmental protection planning. SAPIP will build on this experience and, through trained NGO and MAF staff and local village leaders, will assist with the establishment and operation of WSMCs in three target watersheds (Belulik, Loes and Tono), and with the continued operation of the Raumoco WSMC. There will be representation by women and youth farmers in the WSMCs. The WSMCs will be supported with operational budget for the first three years and with technical advice to ensure that development activities in their watersheds follow community-approved plans and comply with environmental protection practices. The project will support WSMCs to develop strategies to cover their operational costs over time.

16. *Sub-component 1.2: Support for the preparation of Watershed/Sub-Watershed Agricultural Development Plans* (WADPs)⁹. WADPs will be prepared by the WSMC with the support of municipal level MAF staff and the project. These plans will be prepared using existing data and information to identify areas with good production and marketing potential, while taking into account local infrastructure. WADPs will focus on: (i) how to increase the production of crops/livestock identified as priorities; (ii) how to increase marketable surpluses of agricultural produce; and (iii) identification of complementary small-scale productive infrastructure and equipment, within the context of sustainable land management. Where such plans already exist (for example for Raumoco watershed), SAPIP will support an update of priorities based on community consultations.

17. *Sub-component 1.3: Support for the preparation of Sustainable Community Agriculture Development Plans* (SCADPs). SCADPs will be based on participatory and community driven development approaches to identify investments at the community level. The WSMCs and WADPs developed under sub-components 1.1 and 1.2 will guide this more detailed planning exercise. Where SCADPs already exist, this sub-component will support verification and additional consultation with

⁶ Including crops and livestock.

⁷ The Dutch NGO Hivos, with support from the European Commission supported the establishment of a WSMC and preparation of a watershed management plan for the Raumoco watershed.

⁸ The Japan International Cooperation Agency (JICA) supported a community-based natural resource management (CBNRM) approach in the Comoro and Laclo watersheds. The CBNRM guidelines have been adopted by MAF.

⁹ Although the original GAFSP proposal envisaged municipal-level agricultural development plans, it has since been agreed that the more appropriate unit for agricultural planning is the watershed.

rural communities as required. The planning will involve both farmers and community groups who are interested in sustainable natural resource management. The experience from Raumoco watershed is particularly relevant since a WSMC has been formed and is responsible to its constituent *sucos*¹⁰ for sourcing resources for the implementation of within-watershed development plans. The SCADPs will guide the design of activities and investments for a period of one to three years.

18. Component 2: Smallholder organization, advisory support and training (Total Cost: US\$3.1 million). The development and strengthening of farmer groups is a priority area under the MAFSP. Component 2 will therefore facilitate the formation of farmer groups where needed, building on cohesion developed during the SCADP preparation process, and strengthen existing groups formed for other purposes by NGOs and other relevant programs. Farmer groups will be supported by complementary investments in sustainable and nutrition sensitive agricultural production and environmental protection (see Component 3) to implement SCADPs. Trader groups can be included in capacity building activities in order to facilitate linkages and build marketing opportunities.

19. Sub-component 2.1: Facilitation of the identification, assessment and formation of farmer groups. Members of the WSMCs, in collaboration with MAF extension agents and contracted national NGO facilitators or consultants, will identify lead farmers and assist them to form production and environmental management groups. Where such groups already exist, the structure and composition of the groups will be identified and assessed. Identification of the leadership roles will be conducted in a participatory, gender equitable and transparent way through the WSMCs.

20. Sub-component 2.2: Support for farmer group development and capacity building. Once farmer groups have been formed or existing groups identified under sub-component 2.1, SAPIP will provide ongoing guidance and capacity building to ensure their sustainability and effectiveness. SAPIP will develop farmer group support systems in MAF to provide training on a range of activities, as follows:

21. Sub-component 2.2.1: Facilitation of farmer-to-farmer learning through Farmer Field Schools, demonstrations and additional training activities. SAPIP will support the training of farmer groups, including Farmer Field Schools (FFS) with learning fields/demonstration plots. Additional training support for FFS will be developed based on the SCADPs. The FFS will serve as learning centers for farmers and will encourage the substantive participation of women. Lead farmers will act as facilitators at the *suco* level and will play an important role in the implementation of activities under Components 2 and 3. A Sustainable Land Management (SLM) approach will be used with a focus on climate-smart conservation agriculture¹¹.

22. Sub-component 2.2.2: Provision of other training. The farmer group learning plans will also include training on topics other than improving productivity. This will include activities on business planning, marketing, financial management (including for management of the grants to be received), environmental management, and community participation and governance. The uptake of nutritious foods and improved food safety will be promoted, with subsequent support to be provided under Component 3 as relevant. It is expected that successful implementation of the learning and business

¹⁰ A *Suco* is the village level in the local government structure.

¹¹ FAO has developed a smallholder conservation agriculture production system based on reduced tillage, no grazing, retention of organic matter, and no burning of crop residues. This pilot is now ready for expansion across Timor-Leste, and MAF has announced that conservation agriculture will become an integral part of its recommendations for sustainable rain-fed maize production.

plans will lead to improved sales of processed or unprocessed farm products, and strengthened farmer organizations with some internal management and marketing skills. Women and youth groups will receive training for their specific requirements and interests. Trader groups and marketing associations may also be included in relevant training, both to provide training/content and to improve marketing skills or facilitate market linkages.

23. Component 3: Sustainable watershed/sub-watershed management and support to farmer groups (Total cost: US\$9.3 million). The objective of this component is to support the implementation of SCADPs through the provision of targeted on-farm investments. These investments will include equipment and technologies promoting reduction of post-harvest losses, increasing value addition, addressing soil erosion and promoting climate resilience. Eligible investments will be defined in the Project Implementation Manual (PIM)¹².

24. Sub-component 3.1: Rapid roll out of post-harvest storage and processing technology for grains. Given the high demand for storage facilities and significant losses due to poor post-harvest storage and processing techniques, SAPIP will finance the rapid and targeted distribution of grain storage and processing equipment¹³ to smallholder farmers. The financing under this component is a disbursement linked indicator, contingent on meeting the targets defined in the Results Framework (Annex 1), as assessed by independent verification. The process for procurement and dissemination of the appropriate technology will be based largely on the systems used by MAF in the implementation of the IFAD financed Timor-Leste Maize Support Program (TLMSP).

25. Sub-component 3.2: Support to farmer groups for production, storage and processing facilities. This sub-component will support: (i) procurement and distribution of seeds and seedlings from community seed production groups; (ii) provision of small scale grain drying, storage and processing equipment; (iii) equipment for climate-smart conservation agriculture activities; (iv) technology for aquaculture using bamboo brackets, small ponds, or rice–fish mixed farming; and (v) livestock control/management infrastructure for controlled grazing, improved livestock feeding and fodder management¹⁴. Food processing groups can be supported for preparation, packaging and marketing of hygienically safe, nutritious food to domestic markets. This is also expected to help farmers increase competitiveness with imported food for some commodities.

26. Farmer groups that present strategies to use such facilities will be assisted through subsidized equipment following the principles for cost-sharing described in Annex 2 (and further elaborated on in the PIM). With increased participation in such cost-sharing programs and with training on financial management, it is expected that farmer groups will increasingly take on the responsibility of purchasing and maintaining equipment. Where possible, small scale technologies will be manufactured locally. Farmers will be trained in the use of the equipment. Particular care will be given to enabling female and young farmers to participate in and benefit from the proposed activities.

27. Subcomponent 3.3: Technologies and small-scale works for sustainable watershed/sub-watershed management. This sub-component will support technologies and small-scale works to

¹² The project will not support commercial forestry, which is the focus of a new European Union project.

¹³ The project will provide a menu of options based on appropriate technologies.

¹⁴ This will be most useful in communities who elect to ban free grazing in favour of penning and stall feeding their animals. This approach has been adopted by several villages assisted by the JICA CBNRM project: communities have prepared and implemented locally agreed rules (“*tara bandu*”) on appropriate livestock management.

allow for the implementation of the WADPs – such as investments in water harvesting structures for domestic and agricultural purposes, and erosion control and watershed protection works (including shelterbelt plantations). Support will be provided to farmer groups who present successful proposals for community managed investments to be selected with the guidance of the WSMC through a set of criteria to be developed during the first year of the Project. The criteria will include a formal agreement with community members on the use and management of infrastructure and in-kind contributions from communities such as voluntary provision of land, labour and local construction materials. The Beneficiaries Participation Framework provided in the SAPIP Environmental and Social Management Framework will form the basis of such agreements.

28. Component 4: Strengthening MAF’s services, planning, programming, coordination and monitoring and evaluation functions (Total cost: US\$3.9 million). This component will support MAF to strengthen institutional capacity following recent organizational changes. The support will focus on improved services (including extension); planning; more efficient budget programming to increase sectoral investment returns and achieve sector objectives; better coordination with development partner activities, and improved alignment of these activities with MAF’s annual action plan; and improved monitoring, evaluation and reporting. Component 4 will include support for the Timor-Leste Agriculture Advisory Council (TLAAC) and the Timor-Leste Agriculture Research and Development Institute (TLARDI), which are included in the national Strategic Development Plan.

29. *Sub-component 4.1: Institutional Support.* Three areas of support are to be provided under this sub-component aimed at strengthening the evolving structure of MAF:

30. *Sub-component 4.1.1. Analytical support for policy reforms.* This sub-component will support the establishment of the TLAAC to build MAF’s capacity to provide analytical support for policy reforms. The Council is expected to comprise representatives of MAF, the Ministry of Finance, and other relevant state agencies. TLAAC’s mandate will include identifying, prioritizing and analyzing policy reforms aimed at improving the efficiency of investments in the agricultural sector and growth of the rural economy. SAPIP will provide technical assistance for drafting Terms of Reference and will also cover initial operating costs, including for analytical work such as public expenditure reviews, reviews or preparation of policies (for example on fertilizer, livestock etc), and impact evaluations of key policy interventions, as needed. These activities will be coordinated with external partners, including development partners with planned substantial investments in the agriculture sector (such as DFAT, USAID and others).

31. *Sub-component 4.1.2. Support for improved adaptive research.* TLARDI will be responsible for guiding investment in research and development (R&D) and extension so as to improve access to new technologies. TLARDI will advise MAF on the importance of adaptive research programs; identify specific cases where R&D is required; design, cost and analyze such programs; assist MAF to prepare and present case studies which support increased R&D budget; and certify good practices for extension. SAPIP will support, through technical assistance, the initial analysis and preparation for setting up this body (e.g. drafting Terms of Reference), and the initial operating costs for identification of research and development priorities by sub-sectors, adaptive research examples, agriculture extension approaches, SLM practices, and case studies on the role of R&D. These activities will be carried out in coordination with external partners, including development partners with planned substantial investments in the agriculture sector (such as DFAT, USAID and others).

32. *Sub-component 4.1.3. Support for improved MAF management strategy and institutional governance.* The implementation of MAF's latest reorganization, and staff changes in consideration of public service regulations, will require an improvement in MAF management and governance. The aim of this sub-component will be to assist MAF to identify a strategy for the Ministry to: (i) respond to the needs of its stakeholders, particularly when devolution to the municipal level is under-way; (ii) fulfill its objectives, adapt to an evolving environment, and manage its resources efficiently; and (iii) build mechanisms that promote transparency and accountability. This activity could support a platform for building, in the long-run, a sector-wide approach to agricultural development and food security. With recent changes introduced to extension services under the decentralized government, there may be a requirement for re-training of extension workers. Support under this sub-component will therefore include a needs assessment for extension services, as well as training of Suco Extension Officers (SEOs) and lead farmers for extension activities to be carried out under Component 2.

33. *Sub-component 4.2: Development of MAF's M&E system.* This sub-component will support setting up a framework for MAF's internal performance management to improve responsiveness to stakeholders, accountability, transparency, and the focus on tangible results. This will require the development and maintenance of a results-based M&E system. The current M&E system of MAF is not formalized across National Directorates, and does not provide the Ministry with reliable and complete data in a timely manner to assess and demonstrate the impacts of sector investments to support decision-making. SAPIP will support, through technical assistance from FAO, the development of a results-based M&E system and strengthen the capacity of MAF to maintain this system. These activities will build on related efforts under the IDF grant for the Institutional Reform and Transformation of MAF (MIRT). Technical assistance for the development of Municipal and Central-level Results Based Frameworks, which could provide a basis for the adoption of a results-based approach for budgeting and for coordination across projects/programs, may also be provided.

34. **Component 5: Project management and monitoring** (Total Cost: US\$4 million). The Government is in the process of creating a Development Partners Support Management Unit (DPSMU) within MAF to manage and coordinate the implementation of all development partner-financed projects and programs in the agricultural sector. The Secretary General will act as the Coordinator for the DPSMU, and the Project Manager from each project/program will report to this Unit. Given SAPIP's size and geographic scope, it will be coordinated and managed by a separate SAPIP PMU, but will also report to the DPSMU.

35. The SAPIP PMU will include seconded staff from MAF's National Directorate for Policy and Planning, Research and Special Services, and Agriculture and Community Development teams. They will be supported by a team of technical specialists with skills in: (i) project planning, coordination and management; (ii) institutional reform and capacity building; and (iii) monitoring, evaluation and impact assessment. These will include a Project Manager, a Program Officer, a Policy, Planning and M&E Officer, a Financial Management Officer, a Procurement Officer, a Grants Officer and an Administrative Officer. SAPIP Municipality Implementation Units (MIUs), comprising MAF municipal level staff supported by a District Coordinator, a Project Officer and an Administrative Assistant, will be responsible for the implementation of Project activities at the field level, in close coordination with the SAPIP PMU. A facilitation team recruited as an NGO/consulting service will assist the PMU and MIUs in the training and outreach to farmer groups. Responsibility for compliance and grievance handling will rest with the Project Manager.

36. The SAPIP PMU will be responsible for: (i) annual planning and budgeting; (ii) coordination across components and with other projects/programs to drive complementarity; (iii) support for field-level technical and natural resource planning staff; (iv) support for a governance framework to manage the disbursement of small grants; (v) communications, knowledge management and dissemination; (vi) maintenance of a database in the Agriculture Land Use Geographic Information System (ALGIS) to record WADPs and SCADPs; (vii) a focus on gender and vulnerable group inclusiveness in project-supported activities; and (viii) monitoring of and reporting on the SAPIP results framework. The project will develop and apply a communications strategy and accountability mechanism with citizen engagement, monitoring and grievance redress throughout implementation.

37. **Baseline, mid-term and program evaluation.** An independent firm will be hired to conduct the surveys required for project evaluation, including establishing a baseline of household characteristics, agriculture and nutrition status at start-up, conducting a mid-term evaluation, and designing the end-of-project evaluation. As part of project evaluation, a (non-experimental) evaluation will also be conducted to measure the project impact on aspects of household income, food security and nutrition. The use of the Food Insecurity Experience Scale (FIES¹⁵) will be supported in this survey. If possible, additional resources will be secured to support a broader impact evaluation of the program.

38. **Component 6: Contingency for Disaster Risk Response** (Total Cost: US\$0): Carrying out a program of activities designed to provide rapid response to disaster, emergency or catastrophic events, as needed to ensure continued achievement of the project development objective. This component will be used in the event that an emergency response is required.

B. Project Financing

39. A US\$21 million grant from the Global Agricultural and Food Security Program (GAFSP) Trust Fund will finance the Project. The Government of Timor-Leste has nominated the World Bank as the Supervising Entity for this Project. The FAO will provide technical assistance for agriculture sector monitoring as requested in the GAFSP proposal.

Project Cost and Financing

| Project Component | GAFSP financing (US\$ '000) ¹⁶ | % of total project cost |
|--|---|-------------------------|
| 1. Integrated watershed/sub-watershed agricultural development planning | 710 | 3% |
| 2. Smallholder organization, advisory support and training | 3,096 | 15% |
| 3. Sustainable watershed/sub-watershed management and support to farmer groups | 9,299 | 44% |
| 4. Strengthening MAF's services, planning, programming, coordination and M&E functions | 3,883 | 19% |
| 5. Project management and monitoring | 4,012 | 19% |
| Total project cost | 21,000 | |

¹⁵ The FIES is also a Sustainable Development Goal indicator. The approach documents respondents' first-hand experiences of accessing adequate food. The survey questions reflect a continuum of food insecurity severity as follows: worrying about how to procure food; eating poorer quality food; reducing food quantity, and finally experiencing hunger due to a lack of food all together.

¹⁶ Includes provision for a small contingency for each component.

C. Lessons Learned and Reflected in the Project Design

40. The design of the Project incorporates lessons learned and evidence-based studies from ongoing Bank and donor-funded projects in Timor Leste and similar GAFSP and agriculture projects. The project will build on existing efforts to strengthen decentralized planning and village development, and draw on successful agriculture programs which can easily be scaled up to provide benefits across the country. SAPIP will build on the experience of existing programs relating to planning, watershed management and agriculture, such as the PNDS¹⁷, Seeds of Life (SoL, DFAT financed), conservation agriculture (FAO), the Timor-Leste Maize Support Program (TLMSP, IFAD financed) and Raumoco watershed planning (EU/Hivos). The project will also work closely with planned major investments in the agriculture sector, such as that by DFAT (TOMAK – Farming for Prosperity), the EU-GIZ ACSE Integrated Action for Resilience and Adaptation (IA4RA), and USAID (Avansa Agrikultura), to ensure complementarity and continued sharing of lessons learnt.

41. Following an assessment of country programs in 2011, the World Bank’s Independent Evaluation Group recommended: (i) an increased focus on agriculture, human resource development and institution building; and (ii) simplicity in project design, intensive fiduciary support, and partnerships with government, civil society, and other development actors. SAPIP will address these recommendations by ensuring that the elements to be supported by the project build on partnerships and focus on institution building. By working through MAF and with farmer groups, SAPIP will also lend support to bottom up planning processes to improve overall planning and prioritization of Government and development partner assistance.

| Lesson | Key Design Feature |
|--|--|
| Capacity building. Given the limited support from formal extension services, support to farmer groups has been increasingly provided by NGOs and the private sector. | Capacity building and organizational strengthening will be major Project elements – for individual farmers, farmer groups/organizations, and the agrarian institutions which support them. |
| Productivity improvements and small scale value addition. Value-added agriculture is essential for both poverty reduction and for addressing seasonal food insecurity. At present, Timorese farmers only sell raw produce that fetches a low market price. Small farm holdings and resource constraints imply that watershed management, farmer groups, and reducing post-harvest losses are essential for addressing the economic and food needs of agriculture households in Timor-Leste. | Component 3 will support improved productivity and improved product marketability. This will include investments in improved post-harvest technologies and practices, as well as small-scale processing technologies. |
| Gender inclusion. There is ample evidence globally that an increase in women’s income is likely to have a proportionally greater impact on children’s health and nutrition than comparable increases in men’s income. There are also increasingly more technologies available to reduce women’s labour related to agriculture production and post- harvest processing. | The project will make concerted efforts to help women in agriculture households identify investments to help improve their income and reduce time for crop production or processing. Such increases in income and saved time can help improve their own nutrition as well as that of their children. |
| Donor harmonization. Strong in country efforts by development partners and MAF suggest tremendous | SAPIP was designed, as per GAFSP guidelines, through a coordinated effort between development |

¹⁷ The *Programa Nasional Dezenvolvimentu Suku* (PNDS17), or National Program for Village Development, is a community development program funded by the Government of Timor-Leste with Technical Assistance from Australia. The PNDS finances basic village infrastructure such as connecting roads, small bridges and community buildings and provides jobs and training. To the extent possible, SAPIP will build on this national community development experience but with a focus on sustainable agriculture development and environment improvement and protection.

| Lesson | Key Design Feature |
|--|---|
| willingness to build on successful programs and support the Ministry to deliver results. | partners and MAF. The current project reflects this and continues to build on a harmonization platform supported by the MAF-DP agriculture group. |

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

42. **Project Management:** The Secretary General of MAF will lead the MAF project coordination unit for all development partner assisted projects (the DPSMU). A SAPIP Project Manager will be appointed for managing SAPIP and will report to the Secretary General. For inter-ministerial coordination required to facilitate linkages and build complementarity, SAPIP will work through MAF. In addition, because of the importance of high-level coordination with Government, the SAPIP PMU will maintain a working relationship with Parliamentary Committee D, responsible for providing oversight to the development of Timor-Leste’s agriculture sector.

43. **Implementation:** At the central level, SAPIP will be coordinated by a Project Steering Committee (PSC) chaired by the Secretary General and comprised of all relevant Director Generals from MAF, representatives from related Ministries, such as Health, representatives from the municipal governments for the target municipalities, civil society, and farmer group representatives. The SAPIP PMU, with support staff financed by the project, will act as the Secretariat to the PSC. At the municipality level and in Oecusse, Agriculture Officers will coordinate with the Municipality Implementation Unit. Municipal agriculture extension officers will provide support to project activities together with supporting services provided by CSOs and NGOs in the project areas. The SAPIP PMU and the MIUs will be responsible for the day to day implementation of the project activities. The PSC will meet every six months to receive monitoring updates, and share information across the related Ministries and within MAF to guide the project’s activities. Additional observers may be invited to the PSC meetings as needed.

44. For **Component 1**, to set up the Watershed/Sub-Watershed Management Councils, a methodology similar to that used for the Watershed Council for Raumoco will be adopted. This includes hiring consultants to assist with the training, planning and institutional structure of the WSMCs. Extension workers and MAF municipal level staff will be involved in mobilization and training. WADPs will be prepared by groups of planners who have been trained by other Projects. These teams will include staff from ALGIS, municipal-level agro-technicians (to be trained under Component 4), Suco Extension Officers (SEOs), and local NGOs. SCADPs will be facilitated by the same groups but with the involvement of the WSMCs.

45. For training activities under **Component 2**, consultants (firms/NGOs) would be contracted and paid on the basis of groups formed and training provided. To the extent possible, existing modules and materials from projects supported by Development Partners will be used to ensure quality. SAPIP Municipality Implementation Units (MIUs), comprising MAF municipal level staff supported by facilitators, will be responsible for the implementation of Project activities at the field level, in close coordination with the SAPIP PMU. The MIUs will coordinate with the municipality level planning and programming structures.

46. For **Component 3**, the implementation arrangement will follow, as much as possible, established procedures within MAF with increased oversight, monitoring and technical support. MAF will identify a menu of appropriate post-harvest and processing technologies to be provided. Sub-components 3.1 and 3.2 will follow the implementation arrangements of the TLMSP, which has established procurement, co-payment and financial management procedures that can be adapted to SAPIP. For Sub-Component 3.3, identifying farmer demand, verification of proposals and provision of agriculture related grants will follow established participatory approaches with additional support to be provided by NGOs and facilitation firms.

47. **Project Implementation Manual:** MAF will develop a Project Implementation Manual (PIM) that contains: (i) a project description, including geographical reach; (ii) institutional framework and inter-institutional relationships; (iii) implementation arrangements including participant eligibility criteria; (iv) safeguard requirements; (v) financial management and audit arrangements; (vi) procurement procedures; (vii) monitoring and evaluation key indicators and arrangements; and (viii) a consultation and communications strategy including gender outreach and complaints management. The PIM will include templates for progress reports as well as a section on safeguards and grievances.

B. Results Monitoring and Evaluation

48. The M&E implementation plan for the project includes: (i) organizational arrangements, (ii) monitoring of progress in the implementation of activities, (iii) M&E staffing and cost estimates, and (iv) M&E of outcomes/results. The M&E function is envisioned as part of the overall institutional development and capacity building of the project implementing units at MAF and municipality levels. The SAPIP PMU will have the overall responsibility for M&E operations and dissemination of results for the project and will receive technical assistance from FAO. Formal M&E mechanisms and structures will be established at all levels of project implementation, while still maintaining the supervisory function of the PMU. The PMU will be responsible for monitoring implementation progress (physical and financial), and verifying and consolidating data. It will also be responsible for monitoring of overall project implementation progress, outcome/results, evaluations, data entry into the Management Information System (MIS), and the commissioning and supervision of baseline, beneficiary satisfaction, impact evaluation and other surveys.

49. Monitoring activities and providing regular feedback is an important part of the empowerment agenda and a key to the success of the project. The PMU will report on a quarterly basis as to how the various services and activities are proceeding, and assess whether or not project activities are responding to MAF's needs. Technical assistance will be provided to the PMU to enable the implementation and supervision of an independent monitoring system and to help strengthen the links between the project and MAF monitoring systems.

50. **Gender and Youth.** Inclusion of women and youth in the project will be supported through a gender and youth outreach strategy, including developing a Gender in Agriculture action plan, for example with support from UNWomen, or other technical assistance. Gender specific targets include: (i) at least 25 percent female recipients for capacity building efforts; (ii) at least 30 percent of the farmer group project beneficiaries will be women (including the formation of women-only farmer groups where appropriate); and (iii) at least 25 percent of committee member and other decision making positions in groups/associations formed under the project will be for women. All data will be disaggregated by gender. In addition, 10 percent of the farmer group beneficiaries and 15 percent of recipients of capacity building efforts are expected to be young farmers.

C. Sustainability

51. The overall SAPIP program prioritizes post-project sustainability by building on successful programs and approaches. Given the severe erosion and degradation on many agriculture lands and the relatively high availability of water resources, the project design aims to create opportunities for farmers to use water and soil resources more efficiently while improving environmental sustainability. Good environmental practices, such as climate-smart conservation agriculture, reduced open grazing and efficient water management will be supported by the Project. The Project will promote participatory approaches in planning and strengthening the capacity of stakeholders to identify priorities and work towards solutions both collectively and through private investments. By identifying and building on approaches used by programs which have shown results, such as the Seeds of Life, conservation agriculture and maize storage programs, the economic and financial sustainability of project activities is expected to be positive. The implementation of the project is through MAF, thereby continuing to build institutional capacity in a fragile state.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

52. The overall risk of the proposed project is substantial. Key risks include implementation capacity risk, stakeholder risk and political risk. Implementation capacity risk is high as is shown by the significant delay experienced during preparation and implementation of the MIRT project financed by the IDF. Fiduciary risk is considered substantial since there is a risk that funds may be used for ineligible expenditures due to lack of awareness of requirements; and in the case of rural infrastructure grants provided to farmer groups, due to low capacity of community groups. Political and governance, macroeconomics, sector strategy and policies are also considered substantial at this time, in part due to upcoming elections and budget constraints. Mitigation measures will include: building on activities which have been applied on a smaller scale and which MAF is already familiar with, providing strong facilitation support, and investing in capacity building. Political risk concerning potential elite capture will be mitigated by the use of community engagement processes. Stakeholder risks are moderate due to the high turnover of staff at MAF, but which will be mitigated by building capacity under the MIRT and SAPIP.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

53. The project will directly benefit about 16,500 smallholder farm households in four watersheds through capacity building activities, small-scale investments in sustainable agricultural production, environmental protection and post-harvest infrastructure, and improved access to extension services. The main quantifiable agricultural benefits to the selected watersheds will derive from: (i) an average 20 percent increase in yields and in cropping intensity on rainfed lands as a result of improved farm practices; (ii) an average 20 percent crop yield increase and 25 percent increase in cropping intensity on irrigated lands due to adoption of improved farm practices; (iii) an average 20 percent yield increase for all crops except maize for which yield increase is 50 percent, and a 25 percent increase in cropping intensity on irrigated lands as a result of improved farm practices and adoption of new agricultural technologies; (iii) a 20 percent reduction in agricultural production losses due to improved storage facilities; (iv) about a 20 percent increase in marketable surpluses due to increased

productivity and reduced production losses; (v) an incremental income from fish production through investments in fish ponds or adoption of rice-fish farming technology; and (vi) a 10-15 percent increase in poultry and pig productivity as a result of improved feeding and fodder management and animal husbandry practices.

54. The economic internal rate of return (ERR) for the whole project, when benefits to the direct beneficiaries and associated investment costs are accounted for, is estimated at 13.0 percent with the economic net present value at US\$9.5 million and a benefit to cost ratio of 4.0. Sensitivity analysis was used to test the robustness of the project for three sensitivity variables: an increase in the project cost, a decline in benefits, and a two-year delay in benefit accumulation. The project is moderately sensitive to changes in all three variables. A 20 percent increase in project cost reduces the base ERR to 10.0 percent, while a 20 percent decline in benefits drops it to 9.5 percent. A two-year delay in the benefit accumulation results in an ERR of 9.3 percent. The project, therefore, is considered to be robust. Further detail is provided in Annex 4.

55. In addition to the economic and financial analysis, a greenhouse gas (GHG) accounting exercise was carried out, based on the current land use data available and expected changes in land use (especially to degraded watersheds) due to project activities. The net carbon balance quantifies GHGs emitted or sequestered as a result of the project compared to the without project scenario. The project implementation phase is 6 years and the capitalization phase is assumed to be 14 years. Over a period of 20 years the project constitutes a carbon sink of 9,666,486 tCO₂-eq. The carbon sink is largely due to reduced emissions and rehabilitation of degraded land. The project provides a sink of 175 tCO₂-eq per ha, equivalent to 8.8 tCO₂-eq per ha per year. Further detail is provided in Annex 5.

B. Technical

56. The Project is designed to support several dimensions related to agriculture and rural institutions and services, and to enhance agricultural productivity and marketed produce for smallholder farmers, particularly in severely degraded watersheds. Experiences of development partners involved in agriculture planning and production in Timor-Leste have informed the technical design in terms of adopting decentralized approaches for watershed planning; providing farmer group capacity building and support with improved technologies; and addressing institutional strengthening needs. The focus on women and youth groups and on nutrition and climate sensitive agriculture is expected to meet the specific needs of remote rural communities. Strong coordination between MAF and development partners with a focus on monitoring and accountability will be key to achieving the project outcomes.

C. Financial Management

57. The financial management (FM) assessment was carried out in accordance with the World Bank's policy OP/BP 10.00 (Investment Project Financing) and guidance contained in the "Principles Based Financial Management Practice Manual" effective March 1, 2010. Under OP/BP 10.00 the implementing agency (MAF) is required to maintain FM arrangements, including planning, budgeting, accounting, internal control, funds flow, financial reporting and auditing, which provide reasonable assurance that the proceeds of the grant are used for the purposes for which they are granted.

58. The assessment concluded that the proposed project FM arrangements are adequate to satisfy the requirements as stipulated in OP/BP 10.00, subject to implementation of the agreed actions and

mitigation measures. The main FM risks are from potential delays in processing and approval; funds may be used for ineligible expenditures due to lack of awareness of requirements; and provision of grants may create risks in FM aspects of implementation due to lack of capacity of the recipients. To mitigate risks, clear FM instructions, including a section on the mechanism for grants will be established (as part of the Project Implementation Manual), supplemented by ongoing training and capacity building.

D. Procurement

59. A procurement capacity and risk assessment of MAF was conducted and risk mitigation measures were recommended and discussed. MAF has been implementing several public and donor-funded projects over the past five years. The procurement department will play an active role in the project procurement operations. Procurement and Consultant selections will be under the responsibility of the PMU, led by the MAF Procurement Director with technical support from the project expert in project management and procurement.

60. The procurement-related risk rating is substantial (risk mitigation measures are suggested in Annex 3). The “Guidelines: Procurement of Goods, Works, and Non-consulting services under IBRD loans and IDA credits & grants World Bank Borrowers” (January 2011, revised July 2014) and the “Guidelines: Selection and Employment of Consultants under IBRD loans & IDA credits & grants by World Bank Borrowers” (January 2011, revised July 2014) will be used for the project.

E. Social (including Safeguards)

61. The project beneficiaries will be communities participating in SAPIP across four watersheds (approximately 16,500 households or 85,000 beneficiaries). Activities to be funded will address present and future needs to bring equitable and sustainable social and economic benefits, by focusing on watershed management planning, agriculture development plans, formation of farmer groups, capacity building, small-scale infrastructure (harvesting, processing and storage equipment), monitoring and evaluation, and institutional strengthening. Adverse environmental and social impacts from the project activities are unlikely since they will not involve large-scale physical works, and development plans will be decided by consensus amongst target beneficiaries.

62. The Project triggers OP4.10 Indigenous People, OP4.11 Physical Cultural Resources and OP4.12 Involuntary Resettlement. Since the majority of project beneficiaries are Indigenous People and ethnic minorities, key elements of OP4.10 have been incorporated into project design and reflected in the Beneficiaries Participation Framework (BPF). This will ensure that free, prior and informed consultations and broad community support are initiated in the early preparatory stages, people actively participate in decision-making about their needs, and priorities and benefits are culturally appropriate and distributed equitably. A community-driven development (CDD) approach will be used, inclusive of all stakeholders with particular attention paid to women, youth, disabled, vulnerable and landless groups (i.e. persons previously displaced by conflict). Consultation and engagement activities will be guided by a Consultation Strategy and include resource owners within watershed catchment areas, as well as resource users with access rights living outside the watershed catchment area. As livelihoods are largely subsistence based and land tenure is ill-defined in Timor-Leste, OP4.12 has been triggered and guidelines for land donation and land access have been included in the Land Access and Resettlement Policy Framework in the Environmental and Social Management

Framework (ESMF). The CDD approach will ensure physical cultural resources are avoided at the planning stage. A protocol for the management of chance finds is included in the ESMF.

63. There is a potential for women to be marginalized in decisions in relation to customary land. The Project will make concerted efforts to ensure women's representation in decision-making (with a target participation rate of 25-30 percent), and provide community facilitators training in effective engagement strategies. The BPF outlines methodologies to this effect, and monitoring indicators will be gender disaggregated where practicable.

F. Environment (including Safeguards)

64. The overall social and environmental impact of the SAPIP is expected to be positive, and none of the eligible activities would generate significant risk or irreversible adverse environmental or social impacts if carried out in compliance with the ESMF. The Project has been classified as Category B and will trigger OP4.01 Environmental Assessment, OP4.04 Natural Habitats, OP4.09 Pest Management, OP4.36 Forests and OP4.37 Safety of Dams. The Project is expected to bring positive environmental outcomes through improved watershed management and farming technologies and practices. Most activities will take place on already cultivated land, as identified by participating communities and farmer groups (via consensus). For activities requiring construction and physical works, there is likely to be temporary disturbance in certain areas and negative impacts (dust, noise, waste) are considered minimal. Impacts are site-specific and manageable through site selection, engineering design and quality construction standards. Since there are multiple subproject locations, OP4.04 and OP4.36 are triggered as a precaution, however the benefits are expected to outweigh the negative impacts overall. The project is not expected to affect shared waterways given the small scale of activities, but due to the shared watersheds of the Loes and the Tono rivers, OP7.50 on International Waterways is triggered. Notification was provided to Indonesia on April 27, 2016.

65. The Borrower has prepared an Environmental and Social Management Framework (ESMF). The ESMF sets out procedures for the effective management of social and environmental impacts of the Project, including screening, impact identification and mitigation measures to be implemented. The ESMF has been disclosed locally and at the Infoshop on 6 March 2016.

G. World Bank Grievance Redress

66. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

REPUBLIC OF TIMOR LESTE: Sustainable Agriculture Productivity Improvement Project

Results Framework

Project Development Objectives

PDO Statement

The Project Development Objective (PDO) is to increase the productivity and marketed production of smallholder agriculture in selected geographical locations in Timor-Leste.

These results are at | Project Level

Project Development Objective Indicators

| Indicator Name | Cumulative Target Values | | | | | | | |
|--|--------------------------|-------|-------|-------|-------|-------|-------|------------|
| | Baseline | YR1 | YR2 | YR3 | YR4 | YR5 | YR6 | End Target |
| Increase in productivity of selected major crops for direct beneficiaries (Percentage) | 0.00 | 0.00 | 5.00 | 10.00 | 15.00 | 20.00 | 20.00 | 20.00 |
| Share of production that is lost post-harvest (Percentage) | 30.00 | 30.00 | 25.00 | 20.00 | 15.00 | 10.00 | 10.00 | 10.00 |
| Share of total production ¹⁸ sold on the market (Percentage) | 0.00 | 0.00 | 5.00 | 10.00 | 15.00 | 20.00 | 20.00 | 20.00 |

¹⁸ Including crops and livestock

Intermediate Results Indicators

| Indicator Name | Cumulative Target Values | | | | | | | |
|--|--------------------------|---------|---------|---------|---------|----------|----------|------------|
| | Baseline | YR1 | YR2 | YR3 | YR4 | YR5 | YR6 | End Target |
| Direct project beneficiaries (Number) - (Core) | 0.00 | 10,000 | 20,000 | 40,000 | 50,000 | 72,500 | 85,000 | 85,000 |
| Female beneficiaries (Percentage - Sub-Type: Supplemental) - (Core) | 0.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 |
| Watershed/Sub-Watershed Management Councils established and operational (cumulative) (Number) | 1.00 | 1.00 | 1.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| Watershed/Sub-Watershed Agricultural Development Plans prepared and in use (cumulative) (Number) | 1.00 | 1.00 | 1.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| Sustainable Community Agricultural Development Plans prepared and in use (cumulative) (Number) | 4.00 | 4.00 | 10.00 | 20.00 | 30.00 | 40.00 | 40.00 | 40.00 |
| Targeted clients who are members of an association (percentage) (Percentage) - (Core) | 0.00 | 12.00 | 24.00 | 48.00 | 72.00 | 100.00 | 100.00 | 100.00 |
| Targeted clients who are members of an association - male (number) | 0.00 | 1400.00 | 2800.00 | 5600.00 | 8400.00 | 11550.00 | 11550.00 | 11550.00 |

| | | | | | | | | |
|---|------|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| (Number - Sub-Type: Breakdown) - (Core) | | | | | | | | |
| Targeted clients who are members of an association – female (number) (Number - Sub-Type: Breakdown) - (Core) | 0.00 | 600.00 | 1200.00 | 2400.00 | 3600.00 | 4950.00 | 4950.00 | 4950.00 |
| Targeted clients - male (number) (Number - Sub-Type: Breakdown) - (Core) | 0.00 | 1400.00 | 2800.00 | 5600.00 | 8400.00 | 11550.00 | 11550.00 | 11550.00 |
| Targeted clients - female (number) (Number - Sub-Type: Breakdown) - (Core) | 0.00 | 600.00 | 1200.00 | 2400.00 | 3600.00 | 4950.00 | 4950.00 | 4950.00 |
| Client days of training provided (number) (Number) - (Core) | 0.00 | 0.00 | 132000.00 | 396000.00 | 528000.00 | 528000.00 | 528000.00 | 528000.00 |
| Client days of training provided - Female (number) (Number - Sub-Type: Breakdown) - (Core) | 0.00 | 0.00 | 39600.00 | 118800.00 | 158400.00 | 158400.00 | 158400.00 | 158400.00 |
| Client days of training to raise agricultural productivity (number) (Number - Sub-Type: Breakdown) | 0.00 | 0.00 | 115500.00 | 313500.00 | 396000.00 | 396000.00 | 396000.00 | 396000.00 |
| Client days of training on better post-harvest storage, transportation, and/or | 0.00 | 0.00 | 8250.00 | 57750.00 | 99000.00 | 99000.00 | 99000.00 | 99000.00 |

| | | | | | | | | |
|---|------|------|---------|----------|----------|----------|----------|----------|
| management practices (number) (Number - Sub-Type: Breakdown) | | | | | | | | |
| Client days of training on nutrition (number) (Number - Sub-Type: Breakdown) | 0.00 | 0.00 | 8250.00 | 24750.00 | 33000.00 | 33000.00 | 33000.00 | 33000.00 |
| Farmers adopting improved land management practices (number) (Number) | 0.00 | 0.00 | 0.00 | 4125.00 | 8250.00 | 12375.00 | 16500.00 | 16500.00 |
| Female farmers adopting improved land management practices (number) (Number - Sub-Type: Breakdown) | 0.00 | 0.00 | 0.00 | 1237.00 | 2475.00 | 3712.00 | 4950.00 | 4950.00 |
| Farmers who have adopted improved agr. technology promoted by the project (Number) | 0.00 | 0.00 | 3300.00 | 6600.00 | 9900.00 | 13200.00 | 16500.00 | 16500.00 |
| Female farmers who have adopted an improved agr. technology promoted by the project (Number - Sub-Type: Breakdown) | 0.00 | 0.00 | 990.00 | 1980.00 | 2970.00 | 3960.00 | 4950.00 | 4950.00 |
| National strategy for the government extension services is updated to reflect extension needs assessment | No | No | Yes | Yes | Yes | Yes | Yes | Yes |

| | | | | | | | | |
|---|------|-------|-------|-------|-------|-------|-------|-------|
| (Yes/No) | | | | | | | | |
| M&E system of MAF is developed and functional (Yes/No) | No | No | No | Yes | Yes | Yes | Yes | Yes |
| Annual work plans and progress reports are prepared and submitted on six-monthly basis by the PMU (Yes/No) | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| The project monitoring and evaluation system is established and functioning (Yes/No) | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Beneficiary assessments are conducted annually for participatory planning processes (Yes/No) | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Grievances registered related to delivery of project benefits addressed (%) (Percentage) - (Core) | 0.00 | 80.00 | 80.00 | 80.00 | 80.00 | 80.00 | 80.00 | 80.00 |
| Grievances related to delivery of project benefits that are addressed-(number) (Number - Sub-Type: Supplemental) - (Core) | 0.00 | | | | | | | |

Indicator Description

Project Development Objective Indicators

| Indicator Name | Description (indicator definition etc.) | Frequency | Data Source / Methodology | Responsibility for Data Collection |
|--|---|-----------|--------------------------------------|------------------------------------|
| Percentage increase in productivity of selected major crops for direct beneficiaries | Measures farm productivity as indicated by production per hectare of major crops. These crops will be identified during the baseline survey and may include grains, legumes, vegetables and coffee. | Annual | Beneficiary survey | PMU |
| Decrease in share of production that is lost post-harvest | Measures the proportion of production that is lost after harvesting | Annual | Beneficiary survey | PMU |
| Increase in share of total production sold on the market | Tracks the proportion of crop and livestock production that is marketed. | Annual | Beneficiary survey and retail survey | PMU |

Intermediate Results Indicators

| Indicator Name | Description (indicator definition etc.) | Frequency | Data Source / Methodology | Responsibility for Data Collection |
|---|--|-----------|---------------------------|------------------------------------|
| Direct project beneficiaries | Direct beneficiaries are assumed to be all members of households supported by the project either through capacity building and/or access to improved equipment and watershed improvement grants. | Annual | Project monitoring | PMU |
| Female beneficiaries | Based on the assessment and definition of direct project beneficiaries, measures what percentage of the beneficiaries are female. | Annual | Project monitoring | PMU |
| Watershed/Sub-Watershed Management Councils | Includes provision of operational support to Raumoco WSMC, and formation and | Annual | Project monitoring | PMU |

| | | | | |
|---|--|--------|--------------------|-----|
| established and operational (cumulative) | operation of at least three other WSMCs in target areas | | | |
| Watershed/Sub-Watershed Agricultural Development Plans prepared and in use (cumulative) | Measures the cumulative number of Watershed/Sub-Watershed Agricultural Development Plans that have been prepared and are in use | Annual | Project monitoring | PMU |
| Sustainable Community Agricultural Development Plans prepared and in use (cumulative) | Measures the cumulative number of Sustainable Community Agricultural Development Plans that have been prepared and are in use | Annual | Project monitoring | PMU |
| Targeted clients who are members of an association (percentage) | This indicator measures the share of farming households who have become members of a relevant association as a result of project activities. It is assumed that at least one individual from each farming household will join a farmers group. | Annual | Project monitoring | PMU |
| Targeted clients who are members of an association - male (number) | Measures the number of male beneficiaries who have become members of a relevant association as a result of project activities | Annual | Project monitoring | PMU |
| Targeted clients who are members of an association – female (number) | Measures the number of female beneficiaries who have become members of a relevant association as a result of project activities | Annual | Project monitoring | PMU |
| Targeted clients - male (number) | The total number of male direct beneficiaries | Annual | Project monitoring | PMU |
| Targeted clients - female (number) | The total number of female direct beneficiaries | Annual | Project monitoring | PMU |

| | | | | |
|--|---|-----------|--------------------|-----|
| Client days of training provided (number) | This indicator measures the cumulative number of client days of training provided i.e. the number of clients who completed training multiplied by the duration of training expressed in days. | Quarterly | Project monitoring | PMU |
| Client days of training provided - Female (number) | Measures the cumulative number of training days provided to female clients | Quarterly | Project monitoring | PMU |
| Client days of training to raise agricultural productivity (number) | This is a GAFSP core indicator. Measures the client days of training on raising agricultural productivity | Quarterly | Project monitoring | PMU |
| Client days of training on better post-harvest storage, transportation, and/or management practices (number) | This is a GAFSP core indicator. Measures the client days of training on improving post-harvest storage, transportation and/or management practices | Quarterly | Project monitoring | PMU |
| Client days of training on nutrition (number) | Measures the client days of training on improving nutrition practices | Quarterly | Project monitoring | PMU |
| Farmers adopting improved land management practices (number) | Measures the number of farmers adopting improved land management practices such as conservation agriculture techniques, improved grazing practices, etc., facilitated through investments/ infrastructure under component 3. | Annual | Beneficiary survey | PMU |
| Female farmers adopting improved land management practices (number) | Measures the number of female farmers adopting improved land management practices such as conservation agriculture techniques, improved grazing practices, etc., facilitated through investments/ infrastructure under component 3. | Annual | Beneficiary survey | PMU |
| Clients who have adopted an improved agricultural | Measures the number of farmers adopting improved agricultural technologies such as | Annual | MIS | PMU |

| | | | | |
|--|--|-------------|--------------------|-----|
| technology being promoted by the project | those related to post-harvest processing and storage – includes targets reached under disbursement linked indicator (see below) | | | |
| Female Clients who have adopted an improved agricultural technology being promoted by the project | Measures the number of female farmers adopting improved agricultural technologies such as those related to post-harvest processing and storage– includes targets reached under disbursement linked indicator (see below) | Annual | MIS | PMU |
| National strategy for the government extension services is updated to reflect extension needs assessment | Measures whether the national extension services strategy has been updated based on the results of the extension needs assessment undertaken as part of sub-component 4.1. | Annual | Project monitoring | PMU |
| M&E system of MAF is developed and functional | Measures whether the MAF M&E system under sub-component 4.2 has been established and is in use. | Annual | Project monitoring | PMU |
| Annual work plans and progress reports are prepared and submitted on six-monthly basis by the PMU | Measures whether work plans (annual) and progress reports (six-monthly) are being prepared and submitted by the PMU | Six-monthly | Project monitoring | PMU |
| The project monitoring and evaluation system is established and functioning | Measures whether the project-specific monitoring and evaluation system has been established and is in use | Six-monthly | Project monitoring | PMU |
| Beneficiary assessments are conducted annually for participatory planning processes | Measures whether beneficiary assessments are being conducted on an annual basis to inform participatory planning processes | Annual | Project monitoring | PMU |

| | | | | |
|--|---|--------|-----|-----|
| Grievances registered related to delivery of project benefits addressed (%) | This indicator measures the proportion of registered grievances that are addressed by the project. It ensures that transparency and accountability mechanisms are established by the project so the target beneficiaries have trust in the process and are willing to participate, and feel that their grievances are attended to promptly. It is understood that local sensitivities and tensions may not allow grievance or redress mechanisms to be established in all situations. | Annual | MIS | PMU |
| Grievances related to delivery of project benefits that are addressed-(number) | Measures the number of registered grievances that are addressed by the project. | Annual | MIS | PMU |

Disbursement Linked Indicator (Component 3.1)

Outcome: the share of total production sold on the market will have increased by at least 20 per cent

Indicator (as in the results framework): Clients who have adopted an improved agricultural technology being promoted by the project

| Project Year (defined as July 1-June 30) | Period 1 Effectiveness – Dec 31 2017 | Period 2 Jan 1 2018– Dec 31 2018 | Period 3 Jan 1 2019 – Dec 31 2019 | Period 4 Jan 1 2020 – Dec 31 2020 | Period 5 Jan 1 2021 – Dec 31 2021 | Period 6 Jan 1 2022 – Closing Date |
|--|---|---|---|---|---|--|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Target | | Storage and post-harvest loss technologies delivered to 80% or more of smallholder famers | Storage and post-harvest loss technologies delivered to 80% or more of smallholder famers | Storage and post-harvest loss technologies delivered to 80% or more of smallholder famers | | |
| Disbursement Value: | | USD 346,500 | USD 577,500 | USD 231,000 | | |
| Result Achievement Measure and disbursement mechanism | This results based indicator is scalable up to 80% and calculated as follows: annual disbursement = indicator value – (% of measured value less than target). The disbursement will be reduced by the same percentage that the measurement is less than 80 percent. Disbursements will be made annually, only for that target period, against recurrent costs defined in the grant agreement. Disbursement value is based on a target of 1,650 farmers reached in year 1; 2,750 farmers reached in year 2 and 1,100 farmers reached in year 3. Assumes that farmers may receive up to two types of technologies, with co-payment of 10 percent for each. Funds undisbursed as a result of under-achievement in one year will remain in the category unless re-allocated to other existing categories or new DLIs or cancelled. If any of the targets of the scalable DLI are exceeded relative to the baseline targets, the Bank will recognize that the baseline has been met and will recognize the marginal amount of the target that has been exceeded. This will be counted against the future year targets. Disbursements will be made annually in the first quarter of the Timorese Fiscal Year (following verification of the targets). | | | | | |
| Verification Protocol | Yearly assessments of beneficiaries on a sample basis, carried out through independent verification. Assessments will be completed within 1 month following the period of implementation or earlier if target is deemed to be met. | | | | | |

Annex 2: Detailed Project Description

REPUBLIC OF TIMOR-LESTE: Sustainable Agriculture Productivity Improvement Project

A. PDO

1. The Project Development Objective (PDO) is to increase the productivity and marketed production of smallholder agriculture in selected geographical locations in Timor-Leste.

B. Project Beneficiaries

2. The Project will directly assist at least 16,500 rural farm households, reaching approximately 85,000 direct beneficiaries¹⁹. The main modality of support will be through farmer groups – existing groups where possible and formation of new groups where needed. Farmer group characteristics will be defined in detail in the Project Implementation Manual (PIM). It is expected that about 550 farmer groups, with an average size of 30 members, will benefit from planning and capacity building support. The Project will focus on households that are (i) willing to participate in the Project activities; (ii) have stable access to land with potential to increase production; and (iii) have access to water resources (including rainwater) which can be developed. The Project will ensure that at least 30 percent of the farmer group members are women (including the formation of women-only farmer groups where appropriate), and that at least 10 percent are youths²⁰.

3. The Project will be implemented in four watersheds, located in the municipalities of Lautem (Raumoco watershed), Ainaro/Covalima (Belulik watershed), Liquiça/Ermera/Bobonaro (Loes watershed), and Oecusse²¹ (Tono watershed). These watersheds have been selected on the basis of the extent of food and nutrition insecurity; complementarity with other development partners and Government programs; and potential for small-scale agriculture development. The number of target areas has increased from two in the GAFSP approved proposal to four, to acknowledge that the Project's design can successfully build on on-going efforts by development partners and government; and to support the scaling up of successful pilots to new watersheds. The target number of households (16,500) remains unchanged.

4. The location of target sucos within the four watersheds is shown in the project map, and selected characteristics are shown in Table 1 and Table 2.

¹⁹ Based on an average household size of 5.3 individuals in the target areas, as per the 2010 National Census. Direct beneficiaries are assumed to be members of all households supported by the project either through capacity building and/or access to improved equipment and watershed improvement grants.

²⁰ Defined as those aged 16 to 30 years, as per the Timor-Leste National Youth Policy (2007).

²¹ Now a Special Zone of Social Market Economy (ZEEMS). The Minister of MAF has endorsed this selection.

Table 1. Population in the target sucos for SAPIP

| Watershed | Municipality | Suco | No. of households (2010 Census) | Estimated no. of households (2015)* |
|------------------|---------------------|--------------|--|--|
| Belulik | Ainaro | Ainaro | 871 | 981 |
| Belulik | Ainaro | Aitutu | 767 | 864 |
| Belulik | Ainaro | Cassa | 414 | 466 |
| Belulik | Ainaro | Leolima | 931 | 1,049 |
| Belulik | Ainaro | Manutasi | 265 | 299 |
| Belulik | Ainaro | Mau-Chiga | 404 | 455 |
| Belulik | Ainaro | Mau-Nuno | 172 | 194 |
| Belulik | Ainaro | Mau-Ulo | 89 | 100 |
| Belulik | Ainaro | Mulo | 1,112 | 1,253 |
| Belulik | Ainaro | Nuno-Mogue | 542 | 611 |
| Belulik | Ainaro | Soro | 299 | 337 |
| Belulik | Ainaro | Suro-Craik | 182 | 205 |
| Belulik | Covalima | Raimea | 1,035 | 1,166 |
| Loes | Bobonaro | Balibo Vila | 691 | 778 |
| Loes | Bobonaro | Leolima 1 | 385 | 434 |
| Loes | Bobonaro | Manapa | 328 | 369 |
| Loes | Bobonaro | Meligo | 458 | 516 |
| Loes | Bobonaro | Purugoa | 392 | 442 |
| Loes | Bobonaro | Ritabou | 884 | 996 |
| Loes | Ermera | Ailelo | 237 | 267 |
| Loes | Ermera | Asulau | 327 | 368 |
| Loes | Ermera | Batumanu | 179 | 202 |
| Loes | Ermera | Laubono | 216 | 243 |
| Loes | Ermera | Leimea Craik | 222 | 250 |
| Loes | Ermera | Samara | 117 | 132 |
| Loes | Liquiça | Gugleur | 661 | 745 |
| Loes | Liquiça | Guiço | 268 | 302 |
| Loes | Liquiça | Leoteala | 444 | 500 |
| Loes | Liquiça | Lissadila | 518 | 584 |
| Raumoco | Lautem | Afabubu | 111 | 125 |
| Raumoco | Lautem | Baricafa | 148 | 167 |
| Raumoco | Lautem | Cotamutu | 234 | 264 |
| Raumoco | Lautem | Daudare | 313 | 353 |
| Raumoco | Lautem | Lacawa | 93 | 105 |

| Watershed | Municipality | Suco | No. of households (2010 Census) | Estimated no. of households (2015)* |
|--------------|--------------|-------------|---------------------------------|-------------------------------------|
| Raumoco | Lautem | Luro | 375 | 422 |
| Raumoco | Lautem | Maina II | 446 | 502 |
| Raumoco | Lautem | Serelau | 159 | 179 |
| Raumoco | Lautem | Wairoçe | 147 | 166 |
| Tono | Oecusse | Banafi | 403 | 454 |
| Tono | Oecusse | Bobometo | 1,213 | 1,366 |
| Tono | Oecusse | Malelat | 381 | 429 |
| Tono | Oecusse | Naimeco | 840 | 946 |
| Tono | Oecusse | Usi-Tacae | 773 | 871 |
| Tono | Oecusse | Usi-Taqueno | 238 | 268 |
| TOTAL | | | 19,284 | 21,722 |

*Assuming a population growth rate of 2.41% per annum, as was the case from 2004 to 2010

Table 2. Percentage of households growing crops, by municipality

| | Rice | Maize | Cassava | Vegetables | Fruit (temp.) | Fruit (perm.) | Coffee | Coconut | Other temp. crops | Other perm. crops |
|-----------------|------|-------|---------|------------|---------------|---------------|--------|---------|-------------------|-------------------|
| Ainaro | 10.6 | 74.2 | 57.7 | 53.0 | 59.6 | 58.5 | 57.4 | 28.5 | 59.7 | 58.7 |
| Liquiça | 4.9 | 70.0 | 65.5 | 52.0 | 64.0 | 64.0 | 50.1 | 60.8 | 62.2 | 63.5 |
| Lautem | 18.8 | 51.6 | 44.6 | 38.8 | 39.3 | 37.3 | 10.6 | 44.4 | 37.4 | 38.7 |
| Oecusse | 78.0 | 81.3 | 70.6 | 68.6 | 72.0 | 68.5 | 19.9 | 72.0 | 69.4 | 68.2 |
| <i>National</i> | 24.7 | 55.4 | 51.4 | 42.6 | 47.8 | 46.9 | 27.8 | 41.6 | 45.4 | 46.2 |

Source: Extracted from 2010 census figures, MOF

5. The Project will also indirectly benefit a larger number of households, by supporting watershed/sub-watershed and community-level agricultural development planning that will benefit all communities in a watershed (not only those receiving training or small-scale investments). Spillover effects are expected as the adoption of new agricultural practices and technologies by the direct beneficiaries begins to show results. Furthermore, by strengthening MAF's planning, programming, monitoring and evaluation functions, the Project may act as a catalyst for a more effective and responsive agriculture sector for the whole of Timor-Leste.

C. PDO Level Results Indicators

6. SAPIP has three key indicators at the PDO level. By end of the Project: (i) farm productivity (yield per hectare) for direct beneficiary households will have increased by at least 20 percent for major crops²²; (ii) the share of production that is lost post-harvest will have been reduced by at

²² These crops will be identified during the baseline survey, and may include grains, legumes, vegetables and coffee.

least 20 percent for major crops; and (iii) the share of total production²³ sold on the market will have increased by at least 20 percent..

D. Project Components

7. The Project components will focus on watershed and agriculture development planning, support for smallholder farmers for improved productivity and marketability, and institutional strengthening of MAF after a recent reorganization and in anticipation of the planned decentralization of Government services. SAPIP is designed to complement and build synergies with on-going programs supported by the Government and by development partners, including major planned interventions by DFAT (TOMAK), USAID (Avanza) and the EU (IA4RA). Planning and farmer group facilitation is expected to inform the prioritization of investment support to farmers. In the Raumoco watershed in Lautem municipality, the process of watershed planning and farmer group mobilization is already underway, and SAPIP can provide immediate support to the investment priorities of farmer groups. In the other target watersheds/sub-watersheds, where such planning and farmer mobilization processes are nascent, SAPIP will support this to ensure that adequate consultation and training is provided prior to the roll out of investment support.

8. **Component 1: Integrated watershed/sub-watershed agriculture development planning** (Total Cost: US\$ 710,000). The objective of this component is to improve agriculture development planning within targeted watersheds/sub-watersheds. Watershed/Sub-Watershed Agriculture Development Plans (WADPs) will be used to guide planning at the community level. The Plans will be prepared: (i) using existing data and information to identify agro-zones which have comparative advantages in terms of production and marketing potential; (ii) using associated watershed/ catchment plans based on land use capability assessments; and (iii) taking into account the current status of local infrastructure, which is required to release the full agricultural potential of an area. The plans will focus on: (i) how to increase the production of staple food crops or other crops/livestock identified as priorities; (ii) how to increase marketable surpluses of agricultural produce; and (iii) the requirements for complementary small-scale productive infrastructure and equipment – all within the context of sustainable land management. Where such plans already exist (for example for Raumoco watershed), SAPIP will support updating these through consultations with communities to update priorities in line with latest developments.

9. *Sub-component 1.1: Formation and Strengthening of Watershed/Sub-Watershed Management Councils (WSMCs)*. Experience from the Raumoco watershed in Lautem²⁴ and from the Comoro and Lacló watersheds in Aileu²⁵ confirms the importance of rural communities forming such councils as essential precursors to village development and environmental protection planning. SAPIP will build on this experience and, through trained NGO and MAF staff and local village leaders, will assist with the establishment and operation of WSMCs in three target watersheds (Belulik, Loes and Tono), and with the continued operation of the pre-existing Raumoco WSMC.

²³ Including crops and livestock.

²⁴ The Dutch NGO Hivos, with support from the European Commission supported the establishment of a WSMC and preparation of a watershed management plan for the Raumoco watershed.

²⁵ The Japan International Cooperation Agency (JICA) supported a community-based natural resource management (CBNRM) approach in the Comoro and Lacló watersheds. The CBNRM guidelines have been adopted by MAF.

The WSMCs will be supported with an operational budget for the first three years, and with technical advice to ensure that development activities in their specific watersheds follow community-approved plans and comply with environmental protection practices. The project will support WSMCs to develop strategies for covering their operational costs over time.

10. Modality for supporting WSMCs: Guidelines from on-going experiences will be adapted to SAPIP and participatory approaches will be strengthened. Facilitation support from experienced and locally present NGOs and development partners can be contracted. Funds provided to the WSMCs will follow the financial management procedures outlines in Annex 3. Support for the operating budget of the WSMCs will be transferred as an advance to be used for eligible expenditures, which are to be acquitted with adequate supporting documentation to the PMU – as per instructions to be detailed in the PIM.

11. *Sub-component 1.2: Support for the preparation of Watershed/Sub-Watershed Agricultural Development Plans (WADPs)*²⁶. Following the devolution of ministerial services and all development activities to the municipal level, WADPs will be prepared by the WSMC with the support of municipal level MAF staff and the project. The WADP preparation team will include municipal-level MAF staff as well as staff from the Agriculture Land Use Geographic Information System (ALGIS) team, suco²⁷ level Extension Officers (SEOs), and local NGOs. WADPs will take into account existing municipality plans for rural infrastructure development, particularly local roads and village water supplies. Promising and partially-completed planning and natural resource management initiatives in watersheds (for example Raumoco in Lautem and Leleia in Manatuto) will be used for training and as benchmarks for new plans. ALGIS and Seeds of Life (SoL) have the digitized data and planning information required to prepare WADPs, including information on and predictions of the impact of climate change. SAPIP will help to identify any additional municipal-level planning data required to improve the first generation of plans, and facilitate its acquisition and inclusion in a natural resource planning database to be maintained by ALGIS. This is recognized by MAF as being essential for improved natural resource planning. WADPs will focus on: (i) how to increase the production of crops/livestock identified as priorities; (ii) how to increase marketable surpluses of agricultural produce; and (iii) identification of complementary small-scale productive infrastructure and equipment, within the context of sustainable land management.

12. *Sub-component 1.3: Support for the preparation of Sustainable Community Agriculture Development Plans (SCADPs)*. SCADPs will be based on participatory and community driven development approaches to identify investments at the community level. The WSMCs and WADPs developed under sub-components 1.1 and 1.2 will guide this more detailed planning exercise, which will be completed by contracted NGOs working with MAF extension staff at the suco and sub-district levels. Where SCADPs already exist, this sub-component will support verification and additional consultation with rural communities as required. The sub-component will support development of a methodology to engage with rural communities for sustainable watershed-based agriculture development. A feature of this level of planning is that it will be based on participation from both: (i) community groups who are interested in sustainable natural resource

²⁶ Although the original GAFSP proposal envisaged municipal-level agricultural development plans, it has since been agreed that the more appropriate unit for agricultural planning is the watershed.

²⁷ A suco is village level in the local government structure.

management, for example, more sustainable use of communal grazing; and (ii) farmers representing production of specific commodities. In this regard, the experience from Raumoco watershed is particularly relevant since a WSMC has been formed and is responsible to its constituent sucos for sourcing resources for the implementation of approved (within-watershed) development plans. The SCADPs will guide the design of activities and investments for a period of one to three years. Eligible investments to be supported by SAPIP will be defined in the PIM.

13. The following activities will be used to prepare SCADPs:

- a) Map existing land use within the target watershed/sub-watershed;
- b) Identify areas that are suitable for sustainable agriculture production – annual and perennial crops, livestock grazing, etc., and those areas which are not suited for agriculture due to resource constraints (using the WADPs as a guide);
- c) Overlay the two maps and identify areas where current land use should change, using the criteria of environmental protection and production sustainability;
- d) Consider alternative uses for land where assessments have found that it is unsuitable for its current use, by analyzing options with respect to environmental sustainability, financial viability, and in consultation with the landowners and farmers;
- e) Identify small-scale rural production infrastructure to be community managed, and that would support either improved water and soil management, or the development of livelihood activities; and
- f) For land with higher production potential, decide how to maximize sustainable and financially viable production, identify inputs needed and check market availability.

14. **Component 2: Smallholder organization, advisory support and training** (Total Cost: US\$ 3.1 million). The development and strengthening of farmer groups to improve farm productivity and marketability is a priority area under the MAFSP. Component 2 will therefore facilitate the formation of farmer groups where needed, building on cohesion developed during the SCADP preparation process, and strengthen existing groups formed for other purposes by NGOs and other relevant programs. These farmer groups will be supported by complementary investments in sustainable and nutrition sensitive agricultural production and environmental protection (see Component 3) to implement SCADPs. Where feasible, trader groups will be included in capacity building activities in order to facilitate linkages and increased understanding of marketing opportunities.

15. *Sub-component 2.1: Facilitation of the identification, assessment and formation of farmer groups.* Members of the WSMCs, in collaboration with MAF extension agents (if present and active in their sucos) and contracted national NGO facilitators or consultants, will identify lead farmers and assist them to form production and environmental management groups. Where such groups exist, the structure and composition of the groups will be identified and assessed. Identification of the leadership roles will be conducted in a participatory, gender equitable and transparent way with the recognition of the community through the WSMCs. Farmer groups are to facilitate identification of the groups' priorities and needs, aligned with the SCADPs, including learning needs, and delivery of the appropriately targeted project support under different project components.

16. *Sub-component 2.2: Support for farmer group development and capacity building.* Once farmer groups have been formed or existing groups identified under Sub-component 2.1, SAPIP will provide ongoing guidance, support and capacity building to ensure their sustainability and effectiveness. SAPIP will develop farmer group support systems in MAF to provide continuing training on a range of activities, as follows:

17. *Sub-component 2.2.1: Facilitation of farmer-to-farmer learning through Farmer Field Schools, demonstrations and additional training activities.* SAPIP will support (i) the training of farmer groups, including Farmer Field Schools (FFS) with learning fields/demonstration plots; (ii) costs of local transportation and exposure visits; and (iii) other short-term training activities. Plans for FFS, demonstration and additional training support will be developed based on the SCADPs. The FFS will serve as learning centers for farmers and will encourage the substantive participation of women. Lead farmers will act as facilitator(s) at the suco level and will play an important role in the implementation of activities under Components 2 and 3. A Sustainable Land Management (SLM) approach will be taken with a focus on small-scale climate-smart conservation agriculture²⁸.

18. *Sub-component 2.2.2: Provision of other training.* The farmer group learning plans will also include training on topics other than improving productivity. SAPIP will support training for farmer groups in consultation with MAF's municipal services and under supervision of the community. This training will include learning activities with an emphasis on business planning, marketing, financial management (including for the management of the grants to be received), environmental management, community participation and governance, nutrition and food safety knowledge and practices. The production and consumption of nutritious foods (including both animal source foods such as livestock, eggs, fish, etc. and nutrient-rich crops such as legumes, sweet potato, etc.) will be promoted²⁹. It is expected that successful implementation of the learning and business plans will lead to more sustainable management of the local environment, improved sales of processed or unprocessed farm products, and strengthened farmer organizations with some internal management and marketing skills. Men, women and youth groups will be provided focused training for their specific requirements and interests³⁰. Trader groups and marketing associations may also be included in relevant training, both to provide training/content and to improve marketing skills or facilitate market linkages.

19. Component 3: Sustainable watershed/sub-watershed management and support to farmer groups (Total Cost: US\$ 9.3 million). The objective of this component is to support the implementation of SCADPs through the provision of targeted on-farm investments. The support will include equipment and technologies promoting reduction of post-harvest losses, increasing

²⁸ FAO (with financial support from USDA) has developed and proven a small-holder conservation agriculture production system based on reduced tillage, no grazing, retention of organic matter, and no burning of crop residues. This pilot is now ready for expansion, and MAF has announced that conservation agriculture will become an integral part of its recommendations for sustainable rain-fed maize production.

²⁹ The local NGO HIAM Health has an MOU with MAF to provide nutrition-sensitive agriculture training to SEOs in all districts. This training uses a USAID supported curriculum to be delivered to all agriculture extension workers. Training modules include: dietary diversity, gender and nutrition, food safety and storage, and nutrition-sensitive agriculture.

³⁰ Café Cooperative Timor in partnership with Seeds of Life has worked with men's health groups in Raumoco in order to provide them with the opportunity to learn about health and nutrition.

value addition, addressing soil erosion and promoting climate resilience. These may also include supplies necessary to support food safety and nutrition such as equipment to reduce aflatoxin growth, or to improve production of nutrition enhancing products such as tempeh and tofu. Eligible investments will be defined in the PIM³¹.

20. Sub-component 3.1: Rapid roll out of post-harvest storage and processing technology for grains. Given the high demand for storage facilities and significant losses due to poor post-harvest storage and processing techniques, SAPIP will finance the rapid and targeted distribution of grain storage and processing equipment to smallholder farmers³². The aim of this component is to build on existing capacity in MAF to procure and disseminate simple technologies that are in high demand and can address the significant loss of food resources through poor post-harvest storage or lack of basic processing capacity. The financing under this component is a disbursement linked indicator, contingent on meeting the targets defined in the Results Framework (Annex 1), as assessed by independent verification. This disbursement linked indicator is fully aligned with the overall objectives of Component 3.

21. Modality for provision of equipment: The process for procurement and dissemination of the appropriate technology will be based on systems used by MAF in the implementation of the Timor-Leste Maize Support Program (TLMSP). Procurement of technologies (limited to two to three types of small scale and appropriate post-harvest storage and processing technologies) will be carried out by the PMU. Demand for these technologies will be identified through the watershed planning processes and pledges for co-payments of 10 percent will be required prior to the transfer of the technology to the farmers. The approach used by the TLMSP has shown the significant ability and willingness of beneficiaries to provide the co-payment, and MAF will maintain detailed records of these transactions. The first year of the project will confirm demand for the technologies and disbursements are expected to take place in years 2 and 3 of the project. The PIM will detail the specific steps required for this sub-component.

22. Sub-component 3.2: Support to farmer groups for production, storage and processing facilities. This sub-component will support: (i) procurement of seeds and seedlings from community seed production groups and their distribution; (ii) provision of small scale grain drying, storage and processing equipment to add value for human and livestock consumption³³; (iii) equipment for climate-smart conservation agriculture related activities; (iv) technology for aquaculture using bamboo brackets, small ponds (using plastic or drums), or rice-fish mixed farming;³⁴ and (v) livestock control/management infrastructure (mainly live fences and barbed wire) for controlled grazing, improved livestock feeding and fodder management.³⁵ Support will be provided to food processing groups for preparation, packaging and marketing of hygienically safe, nutritious food to domestic markets. This is also expected to help farmers increase competitiveness with imported food for some commodities. In all cases, the requisite small-scale technology will be manufactured locally where possible, and farmers will be trained in the use of

³¹ The project will not support commercial forestry, which is the focus of a new European Union project.

³² The project will provide a menu of options based on appropriate technologies.

³³ A list of equipment which can be co-financed under this sub-component will be provided in the PIM.

³⁴ A list of appropriate equipment can be developed in coordination with ongoing aquaculture projects/programs

³⁵ This will be most useful in communities who elect to ban free grazing in favour of penning and hand-feeding their animals. This approach has been adopted by several villages assisted by the JICA CBNRM project: communities have prepared and implemented locally agreed rules (“*tara bandu*”) on appropriate livestock management.

the equipment or technology (under Component 2). Particular care will be given to enabling female and young farmers to participate in and benefit from the proposed activities.

23. Modality for provision of equipment: Farmer groups that receive training under Component 2 and present strategies to use such facilities will be assisted through subsidized equipment. A co-payment of 10 percent will be required, and further details on the co-payment mechanism will be provided in the PIM. With increased participation in such cost-sharing programs and with training on financial management, it is expected that farmer groups will increasingly take on the responsibility of purchasing and maintaining such equipment. Procurement and financial management processes will follow the experience of the TLMSP. The procurement and financial management guidelines are provided in Annex 3.

24. *Subcomponent 3.3: Technologies and small-scale works for sustainable watershed/sub-watershed management*. Sustainable watershed management has a short operational history in Timor-Leste and experience in municipal and community level natural resource planning is only just beginning to emerge (see Component 1). The sub-component will support technologies and small-scale works to allow for the implementation of the WADPs, including:

- a) micro-watershed contour terracing with rock walls and/ or vegetated strips (green engineering with vetiver grass and/or closely-planted trees including multi-purpose trees for livestock feeding such as *Leucaena* and *Gliricidia*) with associated diversion and collection of surplus runoff water. This approach has been successfully piloted under the JICA and UNDP funded Projects;
- b) pasture management (e.g., fodder productivity through appropriate species, rotational grazing, watering holes, growing perennials on slopes);
- c) soil fertility (e.g., composting, mulch crops) and integrated pest management (e.g., use of biological controls);
- d) small check dams on streams and gullies to collect water for household use. Interceptor channels will also be used to direct surplus runoff water into communal tanks, and to reduce soil erosion. Water from cropped terraces will be diverted into communal tanks if the topography is suitable;
- e) construction of small reservoirs on larger local streams with up-stream protection in the form of agro/social or commercial forestry to prevent silting and broader-scale soil erosion, gully protection and general environmental rehabilitation. This water will be used for domestic and small-scale irrigation purposes;
- f) SAPIP will also finance (as community/public goods) tube wells and small pumps as sources of supplementary irrigation water which can be used to provide water for rice crops which suffer from lack of grain-filling moisture at this critical time, and to irrigate high-value crops such as out-of-season maize, dry season legumes, and vegetables³⁶.

25. Modality for providing small grants: Support will be provided to farmer groups who will present proposals for community managed investments to be selected with the guidance of the WSMC, through a pre-defined set of criteria to be developed during the first year of the Project. The selection criteria will include (i) a formal agreement with community members on the use and

³⁶ Significant financing is being provided under the PNDS for infrastructure such as rural roads and water supply. This is expected to complement efforts under the SAPIP to improve farmer productivity, post-harvest practices and marketability.

management of infrastructure and (ii) in-kind contributions from communities such as voluntary provision of land, labour and local construction materials. The Beneficiaries Participation Framework provided in the Environmental and Social Management Framework for SAPIP will form the basis of this agreement. After proposals are reviewed and approved through a transparent process, funds will be transferred to the farmer groups established at the suco level. The release of funds will be carried out in tranches. The first payment will be made upon signing of the MOU between the project and the farmer group, and subsequent payments made upon satisfactory progress reports that consists of financial and activities progress report as certified by the project. These procedures, drawing on experiences of the MAF and other partners in country, will be developed by the PMU, subject to the Bank approval.

26. Component 4: Strengthening MAF’s services, planning, programming, coordination and monitoring and evaluation functions (Total Cost: US\$ 3.9 million). The component will support MAF to strengthen its institutional capacity following recent organizational changes. The SAPIP support will focus on improved corporate services (including extension of technology to farmers); planning; more efficient budget programming to increase sectoral investment returns and achieving corporate targets and objectives (as listed in the SDP); better coordination with development partner activities, and improved alignment of these activities with MAF’s annual action plan; and improved monitoring, evaluation and reporting. Component 4 will include support for two important SDP initiatives: the Timor-Leste Agriculture Advisory Council (TLAAC) and the Timor-Leste Agriculture Research and Development Institute (TLARDI)³⁷.

27. Sub-component 4.1: Institutional Support. Three areas of support are to be provided under this sub-component aimed at strengthening the evolving structure of MAF:

28. Sub-component 4.1.1 Analytical support for policy reforms. This sub-component will support the setting up of TLAAC to build MAF’s capacity to provide analytical support for policy reforms. The Council is expected to comprise representatives of MAF, the Ministry of Finance, and other relevant state agencies. TLAAC’s mandate will include identifying, prioritizing and analyzing policy reforms aimed at improving the efficiency of investments in the agricultural sector. SAPIP will provide technical assistance for establishing TLAAC (e.g. drafting Terms of Reference) and will also cover initial operating costs, including for preparation of analytical works such as a public expenditure review of the agriculture sector, a fertilizer policy review, a livestock policy, and impact evaluations of key policy interventions, as needed. These activities will be carried out in coordination with external partners, including development partners with planned substantial investments in the agriculture sector (such as DFAT, USAID and others).

29. Sub-component 4.1.2 Support for improved adaptive research. TLARDI will be responsible for guiding investment in research and development (R&D) and extension so as to improve access to new technologies. TLARDI will advise MAF on the importance of adaptive research programs;

³⁷ The SDP states “Implementing the actions we need to take in agriculture will primarily be the responsibility of two new advisory bodies. The Timor-Leste Agriculture Advisory Council (TLAAC) will formulate national policies for the sector and oversee the implementation of these policies. The Timor-Leste (Agriculture) Research and Development Institute (TLARDI) will be responsible for guiding and planning additional investment into research, development and extension for all major agricultural sub-sectors” - Strategic Development Plan, page 121. Under a World Bank Technical Assistance “Timor Leste Responding to Low Food Production and High Prices (P127404)” concept notes for setting up TLAAC and TLARDI were prepared to inform the structure and roles of these institutions.

identify specific cases where R&D is required; design, cost and analyze such programs; assist MAF to prepare and present case studies which support increased R&D budget; and certify good practices for extension. SAPIP will support, through technical assistance, the initial analysis and preparation for setting up this body (e.g. drafting Terms of Reference), and the initial operating costs for identification of research and development priorities by sub-sectors, adaptive research examples, agriculture extension approaches, SLM practices, and case studies on the role of R&D. These activities will be carried out in coordination with external partners, including development partners with planned substantial investments in the agriculture sector (such as DFAT, USAID and others).

30. *Sub-component 4.1.3. Support for improved MAF management strategy and institutional governance.* The implementation of MAF's latest reorganization, and staff changes in consideration of public service regulations, will require an improvement in MAF management and governance. The aim of this sub-component will be to assist MAF to identify a strategy for the Ministry to: (i) respond to the needs of its stakeholders, particularly when devolution to the municipal level is under-way; (ii) fulfill its objectives, adapt to an evolving environment, and manage its resources efficiently; and (iii) build mechanisms that promote transparency and accountability. This activity could support a platform for building, in the long-run, a sector-wide approach to agricultural development and food security. With recent changes introduced to extension services under the new decentralized government, there may be a requirement for re-training of extension workers. Support under this sub-component will therefore also include a needs assessment for extension services, as well as training of Suco Extension Officers (SEOs) and lead farmers for the extension activities to be carried out under Component 2.

31. *Sub-component 4.2: Development of MAF's M&E system.* This sub-component will support setting up a framework for MAF's internal performance management to improve responsiveness to stakeholders, accountability, transparency, and the focus on tangible results. This will require the development and maintenance of a results-based M&E system. The current M&E system of MAF is not formalized across National Directorates and does not provide the Ministry with reliable and complete data in a timely manner to assess and demonstrate the impacts of sector investments to support decision-making. To address this, SAPIP will support, through technical assistance from FAO, the development of a results-based M&E system and strengthen the capacity of MAF to maintain this system. These activities will build on related works under the ongoing IDF grant for the Institutional Reform and Transformation of MAF (MIRT). MIRT activities will focus on the adoption of an improved methodology for data collection and analysis to monitor MAF's progress in implementing its Medium Term Operational Plan, while SAPIP will support MAF to use the M&E system as a management and policy tool. Provision of technical assistance for development of Municipal and Central-level Results Based Frameworks, that are expected to provide a basis for the adoption of a results-based approach for budgeting and also for coordination of designs and programming of Development Partner assisted projects, may be considered.

32. Component 5: Project management and monitoring (Total Cost: US\$ 4 million). The Government has set up a Development Partners Support Management Unit (DPSMU) within MAF to manage and coordinate the implementation of all development partner-financed projects and programs in the agricultural sector. The Secretary General will act as the Coordinator for the DPSMU, and the Project Manager from each project/program will report to this Unit.

33. Given SAPIP's size and geographic scope, it will be coordinated and managed by a separate SAPIP PMU. On a day-to-day basis, the SAPIP Project Manager will work closely with all MAF Director Generals and National Directors, as the project will cut across all technical, corporate, and research/extension services. The SAPIP PMU will be responsible for maintaining records and reports as well as communications and knowledge-sharing systems. The project will develop and apply a communications strategy and accountability mechanisms through citizen engagement, monitoring and grievance redress throughout implementation.

34. The SAPIP PMU will include seconded staff from MAF's National Directorate for Policy and Planning, Research and Special Services, and Agriculture and Community Development teams. They will be supported by a team of technical specialists with skills in: (i) project planning, coordination and management; (ii) institutional reform and capacity building; and (iii) monitoring, evaluation and impact assessment. These will include a Project Manager, a Program Officer, a Policy, Planning and M&E Officer, a Financial Management Officer, a Procurement Officer, a Grants Officer and an Administrative Officer. SAPIP Municipality Implementation Units (MIUs), comprising MAF municipal level staff supported by a District Coordinator, Project Officer and Administrative Assistant, will be responsible for the implementation of Project activities at the field level, in close coordination with the SAPIP PMU. A facilitation team recruited as an NGO/consulting service will assist the PMU and MIUs in the training and outreach to farmer groups. Responsibility for compliance and grievance handling will rest with the Project Manager. The PMU will be responsible for: (i) annual planning and budgeting in compliance with Government's requirements and guidelines, and with SAPIP's final design; (ii) coordination across components and other projects/program to drive complementarity; (iii) support for field-level technical and natural resource planning staff; (iv) support for a governance framework to manage the disbursement of grants to farmer groups; (v) communications, knowledge management and dissemination; (vi) maintenance of a mapping and planning database in ALGIS to record WADPs and SCADPs; (vii) a special focus on gender, youth and vulnerable group inclusiveness in Project-supported activities; and (viii) monitoring of and reporting on the SAPIP results framework.

35. ***Baseline, mid-term and program evaluation.*** An independent firm will be hired to conduct the surveys required for project evaluation, including establishing a baseline of household characteristics, agriculture and nutrition status at start-up, conducting a mid-term evaluation, and designing the end-of-project evaluation. An evaluation will also be conducted to measure the project impact on aspects of household income, food security and nutrition. The use of the Food Insecurity Experience Scale (FIES³⁸) will be supported in this survey. If possible, additional resources will be secured to support a broader impact evaluation of the program.

36. **Component 6: Contingency for Disaster Risk Response** (Total Cost: US\$0): Carrying out a program of activities designed to provide rapid response to disaster, emergency or catastrophic events, as needed to ensure continued achievement of the project development objective. This component will be used in the event that an emergency response is required.

³⁸ The FIES is also a Sustainable Development Goal indicator. The approach documents respondents' first-hand experiences of accessing adequate food. The survey questions reflect a continuum of food insecurity severity as follows: worrying about how to procure food; eating poorer quality food; reducing food quantity, and finally experiencing hunger due to a lack of food all together.

Annex 3: Implementation Arrangements

REPUBLIC OF TIMOR LESTE: Sustainable Agriculture Productivity Improvement Project

Project Institutional and Implementation Arrangements

1. The Secretary General of MAF will be responsible for inter-Project coordination through the DPSMU. A SAPIP Project Manager will be appointed for managing SAPIP and will report to the Secretary General. In the event that inter-ministerial coordination is required to facilitate linkages and complementarity, SAPIP will work through MAF. In addition, because of the importance of high-level coordination with Government, SAPIP will develop a working relationship with Parliamentary Committee D which is responsible for providing oversight to the development of Timor-Leste's agriculture sector.

2. **Implementation:** Implementation risk which is considered high in the context of the current situation in Timor-Leste where the country is undergoing considerable administrative changes with implications for project implementation. To address this, strong coordination between the Ministry and the municipalities will be required. At the central level, SAPIP will be coordinated by a Project Steering Committee (PSC) chaired by the Secretary General and comprised of all relevant Director Generals from MAF, representatives from related Ministries, such as Health, representatives from the municipal governments for the target municipalities, civil society, and farmer group representatives. The SAPIP PMU, with support staff financed by the project, will act as the Secretariat to the PSC. At the municipality level and in Oecusse, Agriculture Officers will coordinate with the Municipality Implementation Unit. Municipal agriculture extension officers will provide support to project activities together with supporting services provided by CSOs and NGOs in the project areas. The SAPIP PMU and the MIUs will be responsible for the day to day implementation of the project activities. The PSC will meet every six months to receive monitoring updates, and share information across the related Ministries and within MAF to guide the project's activities. Additional observers may be invited to the PSC meetings as needed.

3. For **Component 1**, to set up the Watershed/Sub-Watershed Management Councils, a methodology similar to that used for the Watershed Council for Raumoco will be adopted. This includes hiring consultants to assist with the training, planning and institutional structure of the WSMCs. Extension workers and MAF municipal level staff will be involved in mobilization and training. WADPs will be prepared by groups of planners who have been trained by other Projects. These teams will include staff from ALGIS, municipal-level agro-technicians (to be trained under Component 4), Suco Extension Officers (SEOs), and local NGOs. SCADPs will be facilitated by the same groups but with the involvement of the WSMCs.

4. For **Component 2**, MAF's Municipal office, working with the Watershed/Sub-Watershed Management Councils (WSMCs) will be responsible for the coordination of the Project's activities at the field level. As their capacity is currently limited, SAPIP Municipality Implementation Units (MIUs) will be established within MAF's local Municipal Offices. Integrating MAF's Municipal staff and a small core of supporting facilitators, MIUs will initially be responsible for initiating field-level Project implementation in their areas in close coordination with the SAPIP PMU. As capacity builds up, the MIUs will gradually be absorbed into the Municipality local planning and programming structures. For training activities, consultants (firms/NGOs) would be contracted and

paid on the basis of groups formed and training provided. To the extent possible, existing modules and materials from projects supported by Development Partners will be used to ensure quality.

5. **For Component 3**, the implementation arrangements will follow, as much as possible, established procedures within MAF, with increased oversight, monitoring and technical support. A single grant per farmer group will be provided, with a ceiling of USD 15,000. Identifying farmer demand, verification of proposals and provision of agriculture related grants will follow established participatory approaches with additional support to be provided by NGOs and facilitation firms.

6. Sub-Components 3.1 and 3.2 will follow the implementation arrangements of the Timor-Leste Maize Support Program (TLMSP), which has established procurement, co-payment and financial management procedures that can be adapted to SAPIP. MAF will identify a menu of appropriate post-harvest and processing technologies to be provided.

7. **Co-financing arrangements:** Almost all productive investments supported under the Project will need co-financing by the participants or through the farmer groups. The main principle is that the Project will finance publicly or community-owned investments, while the financing of private investments will be the responsibility of the Project participants with financial contributions by households or the farmer groups. The co-financing requirement for private investments will be based on past experience of on-going programs in order to maintain parity and will be detailed in the PIM.

8. **Project Implementation Manual:** MAF will develop a PIM that contains: (i) a project description, including geographical reach; (ii) institutional framework and inter-institutional relationships; (iii) implementation arrangements including participant eligibility criteria; (iv) safeguard requirements; (v) financial management and audit arrangements; (vi) procurement procedures; (vii) monitoring and evaluation key indicators and arrangements; and (viii) a consultation and communications strategy including gender outreach and complaints management. The PIM will include templates for progress reports as well as a section on safeguards and grievances. A draft PIM is being prepared and will include detailed standard operating procedures for key aspects of project implementation, such as community engagement, sub-project implementation under farmer sub-grants, procedures and monitoring related to the disbursement linked indicator, and project monitoring. The PIM will be periodically updated as experience is gained during implementation.

Sustainability

9. **The overall SAPIP program prioritizes post-project sustainability by building on successful programs and approaches.** Given the severe erosion and degradation on many agriculture lands (especially the steeper and more-heavily grazed land) and the relatively high availability of water resources (rainfall and rivers), the project design aims to create opportunities for farmers to use water and soil resources more efficiently while improving environmental sustainability. Good environmental practices, such as climate-smart conservation agriculture, reduced open grazing and efficient water management will be supported by the Project. Furthermore, the Project will promote participatory approaches in planning and strengthening the capacity of stakeholders to identify priorities and work towards solutions both collectively and

through private investments. By identifying and building on approaches used by programs which have shown results, such as the Seeds of Life, conservation agriculture and maize storage programs, the economic and financial profitability of project activities is expected to be positive. The implementation of the project design is through the Ministry of Agriculture and Fisheries, thereby continuing to build institutional capacity in a fragile state.

Financial Management, Disbursements and Procurement

10. *Institutional arrangements.* Project accounting and payment arrangements will be integrated in the MAF National Directorate for Finance and Administration (NDFFA). The NDFFA conducts financial management (FM) for the entire Ministry, although each Directorate has its own finance unit. The NDFFA has experience in the implementation of World Bank and other donor projects, including the current World-Bank funded MAF Institutional Reform and Transformation Project (P148698) and the recent IFAD-financed Timor-Leste Maize Support Program. A dedicated project Financial Management Officer will be identified to oversee the project financial management function within the PMU. Additional staff will be assigned for the day-to-day project financial administration and control tasks. FM consultants will be engaged where needed to provide support to the project unit and to assist in the training and outreach to farmer groups, including technical assistance on financial management at community level. Training on Financial Management at farmer group level should be provided to the MAF extension agents, project facilitators, and municipal coordination team.

11. *Risks and Mitigation Strategies.* The FM assessment was carried out in accordance with Bank's policy OP/BP 10.00 (Investment Project Financing) and the guidance contained in the "Principles Based Financial Management Practice Manual" issued on March 1, 2010. The assessment concluded that the proposed project FM arrangements are adequate to satisfy the requirements as stipulated in OP/BP 10.00, subject to implementation of the agreed actions and mitigation measures. The project's overall FM risk is rated as **Substantial**. The main FM risks are: potential delays in processing and approval; funds may be used for ineligible expenditures due to lack of awareness of requirements; and provision of rural infrastructure grants may create risks in FM aspects of implementation due to lack of capacity of the recipients. To mitigate the risks, clear FM instructions, including a section on the mechanism for rural infrastructure grants will be established (as part of the PIM), supplemented by ongoing training & capacity building.

12. *Budgeting arrangements.* The budget for the project will be prepared and maintained by the project PMU and uploaded into the Freebalance system (see below) annually. The approved budget will be forwarded to the NDFFA who will monitor budget execution. The budget will be maintained on a spreadsheet-based record which presents a risk due to errors in formulae or data inputs. Guidance for the preparation of an annual work plan and budget schedule will be included in the PIM.

13. *Accounting arrangements.* A strength of the project FM arrangements is that the accounts and payments will be maintained and integrated within the government's existing accounting system (Freebalance). MOF will allocate a project code ('fund source' code) specifically for the project. The project Chart of Accounts (COA) will align with the Government COA. Copies of contracts

will be held in NDFA for payment verification and tracking (manual spreadsheet-based record), which presents a moderate risk due to potential errors in the recording of contractual commitments.

14. *Internal controls.* Adequate segregation of functions between authorization, payment, and recording will be maintained by the project, and complemented by the accounting and systems controls available in Freebalance. To mitigate the risk of mis-coding or ‘double-accounting’, the project documentation will be in a format that distinguishes it from MAF’s own transactions, together with reconciliation controls and segregated roles for data entry. The project will adopt as far as possible the existing FM Manuals for internal control over government budget funds issued by MAF and the Ministry of Finance. As mentioned above, this is a strength as the project uses the internal controls of the government accounting system and regulations, and MAF management and staff are familiar with these procedures. Additional FM instructions will be prepared (as part of the PIM) to detail project specific roles and procedures. Government cost norms or regulations will be followed e.g. per diems, travel arrangements, etc. The NDFA will prepare monthly financial reports generated from the Freebalance system, and send them to project unit to check with their own records; any issues or differences that arise from the report will be discussed with NDFA and adjustments made if needed. The payment verification process at the PMU and MAF municipal offices will align with the government system. Verification systems have been traditionally weak in the public sector and subject to delays. Where possible to avoid delays, approvals should be delegated within the implementing agency – subject to adequate segregation of duties and observance of the prevailing legal requirements – and Direct Payments will be utilized (see below). Support for the operating budget of the WSMCs (Sub-Component 1.1) and the initial operating costs of TLAAC and TLARDI (Sub-Component 4.1) will be transferred as advances to the respective organisations. These advances may only be used for eligible expenditures, which are to be acquitted with adequate supporting documentation, to the PMU as per instructions to be detailed in the PIM.

15. *Sub-grants.* Under sub-component 3.3, for the rural infrastructure grants for sustainable watershed management, funds will be transferred to the farmer groups established at the suco level. The release of funds will be carried out in tranches. The first payment will be made upon signing of the MOU between the project and the farmer group, and subsequent payments made upon satisfactory progress reports that consist of financial and activities progress reports as certified by the project. There is a substantial risk that funds may be misused due to errors or a lack of understanding of requirements, or inadequate documentation, as farmer groups are required to maintain accounting records, credit records and financial reports for the funds received. Training will be provided to the farmer groups prior receiving the first tranche of the fund. Procedures drawing on the experience of CDD projects³⁹ will be developed by the project, subject to the Bank approval, and included as a section in the PIM.

16. *Financial reporting.* Interim financial reports (IFRs) will be submitted quarterly to the Bank. The IFR format will be agreed with the WBG prior to submission of the first IFR. The IFRs will be forwarded to the WBG within 45 days of the end of each calendar quarter. A strength of the project will be that IFRs are based on reports downloaded from the Freebalance system.

³⁹ Such as PNDS or the CDFFA - Community Development Fund of Agriculture (*Comunidade Agrikola Desenvolvimento Fundus*)

17. *External audit.* An annual audit of the project's financial statements will be required in a format acceptable to the Bank. The audits of these statements are carried out by an external auditor based on audit Terms of Reference (TOR) acceptable to Bank. The annual audit report will be furnished to the Bank no later than six months after the end of the government's fiscal year and shall be made publicly available in accordance with the Bank's Access to Information Policy.

Disbursements

18. *Flow of funds.* A separate designated account (DA) will be opened at a commercial bank acceptable to the World Bank and subject to MOF approval. The DA will be used to receive funds from the World Bank via advance or replenishment (see below) and to make payments for eligible expenditures and sub-grants under the projects. For sub-grants under Sub-Component 3.3, funds will flow by direct transfer from the project DA to farmer groups' bank account. Disbursements will be in tranches, with dual bank signatories; there will be requirements to maintain adequate supporting documentation; and regular project implementation reports countersigned by MAF extension staff and Heads of Sucos will be produced with public disclosure – as described in a separate section of the PIM.

19. *Disbursement Methods.* The applicable disbursement methods will be (1) Advance, (2) Direct payment, and (3) Reimbursement. A DA will be denominated in US dollars and will be opened by the Director General Treasury (MOF). The DA will be solely used to finance eligible project expenditures. Direct payments to suppliers and consultants will be utilized where feasible for eligible expenditures incurred under the project. The minimum value of applications level for direct payment and reimbursement is set out in the Disbursement Letter. The documentation required for the replenishment of the fund to the advance designated account will be by Statement of Expenditure and documentation will not be required to be sent, except for those contracts subject to prior review records for contracts that exceed the thresholds established in the Disbursement Letter. The project will be expected to retain all documentation after the closing date for independent audit and for review by World Bank staff. To satisfy replenishment requirements, evidence will need to be provided that the advanced funds have been expended.

20. Eligible expenditures will be funded 100% from project finances (inclusive of taxes) and must be productive and reasonable to achieve the project development outcomes. The eligible expenditures envisaged under the project include (but are not limited to): costs of consultants (fees and reimbursables) and limited goods and civil works (in accordance with the procurement plan); training and workshop costs (including meetings, training materials, travel and per diem); operating costs; and community grants. Civil servant salaries, salary supplements, or allowances are not allowable. Retroactive financing in an amount not to exceed \$100,000 will be provided for expenditures to be incurred on or after September 1, 2016 under disbursement category 1, provided that relevant Bank procurement rules are followed. Allocation of grant proceeds under the project is shown in the table below.

21. For Sub-component 3.1, the World Bank will transfer a stipulated amount of funds directly to MAF subject to the satisfactory achievement of an agreed target for the disbursement linked indicator (DLI) aligned with the Results Framework. A lesser, pro-rated sum may be disbursed in circumstances where the DLI is not fully achieved. Disbursement will be subject to independent

verification of the results, together with satisfactory evidence that an equivalent amount of DLI Expenditures have been incurred under Sub-Component 3.1. DLI Expenditures consist of recurrent costs, i.e. reasonable costs of salaries, as defined in the Recipient’s IV Government Decree-Law no. 27-2008 of 11 August 2008 titled ‘Regime for Management and Leadership Careers and Offices in the Public Administration’, as amended, and other costs for MAF staff and extension staff connected with the carrying out of Component 3.1 of the Project.

| Category | Amount of the Grant Allocated (expressed in USD) | Percentage of Expenditures to be Financed (inclusive of Taxes) |
|--|---|--|
| (1) Goods, works, non-consulting services, consultants’ services, Training, Operating Costs, and Sub-Grants. | 19,845,000 | 100% of the amount disbursed for the Sub-Grants; and 100% of all other Eligible Expenditures |
| (2) DLI Expenditures under Component 3.1 of the Project | 1,155,000 | 100% |
| (3) Emergency Expenditures under Component 6 of the Project | 0 | 100% |

Procurement

22. Procurement for the proposed project will be carried out in accordance with the WB’s “Guidelines: Procurement under IBRD Loans and IDA Credits,” dated January 2011 revised in July 2014 (Procurement Guidelines); and “Guidelines: Selection and Employment of Consultants by WB Borrowers,” dated January 2011 revised in July 2014 (Consultant Guidelines); and the provisions stipulated in the Grant Agreement. For each contract to be financed under the Grant, the different procurement methods or consultant selection methods, estimated costs, prior review requirements, and timeframe will be discussed and agreed upon between the Recipient and the World Bank in the Procurement Plan.

23. **Civil Works.** There are civil works anticipated for implementation of Sub-component 3.3 (sustainable watershed management) and under the community driven initiatives to implement Component 3: small-scale community infrastructure and technology support (minor works or repair of existing community facilities in the targeted project locations). Funds will be channeled through a type of Community Driven Development (CDD) grant mechanism which is to be

developed as part of the conditions for the disbursement category of the grants, and managed according to criteria established in the PIM agreed by the MAF and the World Bank, including incentives to economize resources and collaborate with existing institutions and service providers.

24. Procurement of Goods and Non-consultant Services. Goods required under the project would include goods and non-consultant services such as office supplies, community awareness supplies, consumables, community center rentals, etc. Based on the thresholds, procurement of goods and non-consulting services may be done through International Competitive Bidding (ICB), National Competitive Bidding, or Shopping procedures. Direct contracting may be used in the circumstances set out in paragraph 3.7 of the Procurement Guidelines, subject to the World Bank's prior review.

25. Selection of Consultants. Consulting firms may be selected through the Quality and Cost Based Selection (QCBS), Quality Based Selection (QBS), Selection Based on Consultants Qualifications (CQS), or the Least-Cost Selection (LCS) in conformity with the Consultants Guidelines. Consulting services estimated under US\$300,000 equivalent per contract would follow the Selection Based on Consultants Qualifications (CQS). The Least-Cost Selection (LCS) would be used for assignment of auditor services. Under the circumstances described in paragraph 3.9 of the Consultants Guidelines, consultants may be selected and awarded on a Single-Source Selection (SSS), subject to the World Bank's prior approval. Individual consultants would be selected and contracts awarded in accordance with the provisions of paragraphs 5.1 through 5.5 of the Consultants Guidelines. Under the circumstances described in paragraph 5.6 of the Consultants Guidelines, individual consultants may be selected and awarded on a SSS basis, subject to the World Bank's prior approval.

26. Selection of United Nations Agencies. Project sub-component 4.2 (Development of MAF's M&E system) will be implemented through the FAO on the basis of single source selection, due to their unique and exceptional expertise in agriculture M&E systems. FAO will sign an agreement with MAF to develop a results-based M&E system and strengthen the capacity of MAF to maintain this system. MAF shall submit a complete justification and the draft form of this Agreement (based on the World Bank standard form of agreement between borrowers and UN agencies) before signing.

27. Community participation in procurement: Project component 3.2 will finance community sub-projects including works such as small works and equipment for social infrastructure, activities and materials. MAF has the experience from similar implementation arrangements under Government and donor programs. However, this will be the first time for MAF to implement a project combined with community driven initiatives under the World Bank support. The detailed implementation procedures of community-level procurement will be specified in the PIM. Simplified procurement methods may be included, including local shopping for goods; local shopping for works; Direct Contracting/Off the shelf purchases; etc.

28. Procurement Risks and Mitigation Measures. The SAPIP PMU will be responsible for project procurement activities. An updated assessment (based on the IDF/MIRT experience) of MAF's procurement capacity to carry out project procurement identified the following risks:

| Perceived Risk | Proposed Mitigation action | Timeframe | Action by |
|--|--|--|---|
| Weak procurement capacity | Project will finance Procurement Specialist to supplement the current capacity of the MAF-Procurement. | Soon after project effectiveness | MAF |
| Delay in procurement due to unfamiliarity with the WB procurement procedures | Conduct training/workshop on applicable project procurement procedures and trimester project operations clinic. The task team will provide intensive implementation support to the MAF project team to closely monitor procurement progress during project implementation. | During implementation | WB & MAF/PMU |
| Local market access constraint and limited local capacity | Simplified procurement procedures allowed for fragile and small states will be adopted, along with simplified procurement templates provided in the Procurement Guidance Note <i>Making Procurement Work for Fragile and Small States in the Pacific</i> , issued on January 2013. | During implementation | WB & MAF |
| Delay in project implementation due to the delays in adopting project procurement plan | Preparation of the project procurement plan, updates, utilizing it as a monitoring tool for project implementation Provide technical support during the selection process of farmer groups and closely monitor the implementation of project activities Conduct training on FM, community level Procurement, record keeping etc. for the targeted farmer groups. | Draft procurement plan prepared during project design After project effectiveness | MAF and WB task team MAF/PMU MAF/PMU and WB task team |

29. Procurement Thresholds and Prior Review Thresholds. The Procurement Plan shall set forth those contracts which shall be subject to the World Bank’s Prior Review. All other contracts shall be subject to Post Review by the World Bank.

30. Procurement Plan. MAF will prepare a Procurement Plan for at least the first 18 months. The set procurement plan will be discussed and agreed with the Bank. The procurement plan will be published in the Project’s database and on the WB’s external website. MAF/PMU will update the procurement plan in agreement with the WB annually or as required to reflect project implementation needs and improvements in institutional capacity.

31. Procurement Support Plan. Procurement supervision will be part of the overall supervision effort for this Project. In addition to the prior review supervision, the World Bank procurement team will carry out post review when necessary. The PMU is recommended to do monthly supervisory field visits (to the targeted area of project activities by each community) and to do review and monitoring of procurement activities by the community.

Institutional Arrangements

32. Within MAF, the National Directorate of Policy and Planning (NDPP) houses a Development Partners Support Management Unit (DPSMU) to ensure integration between MAF functions and donor project activities. The DPSMU was established under the World Bank's Institutional Development Fund (IDF) 'MAF Institutional Reform and Transition Project' (MIRT) to reorganize its service delivery to better align to the needs of farming and fishing communities. The DG Coordination Mechanism (Agriculture and Fisheries Working Group) also helps to improve coordination with NGOs and implementing agencies. A separate SAPIP PMU will be established comprising a multidisciplinary team combining MAF staff, consultants and administrators. This includes a Project Manager, a Program Officer, a Policy, Planning and M&E Officer, a Financial Management Officer, a Procurement Officer, a Grants Officer and an Administrative Officer. Short-term consultants including a Planner and Community-based Natural Resource Management Specialist (CBNRM) may also be recruited to support specific functions.

33. Overall, the PMU will be responsible for: (i) annual planning and budgeting in compliance with Government's requirements and guidelines, and with SAPIP's final design; (ii) coordination across Components and other Donor-funded projects/programs; (iii) support for field-level technical and natural resource planning staff; (iv) support for a governance framework to manage the disbursement of grants through current transfer system of the MAF; (v) communications, knowledge management and dissemination; (vi) maintenance of a mapping and planning database in ALGIS to record district-level plans; (vii) a special focus on gender, youth and vulnerable group inclusiveness in Project-supported activities; and (viii) progress reporting to MAF and cooperating Development Partners using a SAPIP-specific M&E system. An annual work plan will be developed by the SAPIP PMU and will include District level planning and activities to be financed by the SAPIP. The annual work plan will include the list of subprojects to be implemented under SAPIP for each district/watershed/sub-watershed, for review and clearance by the Bank.

34. MAF staff in Municipal Offices will be responsible for coordinating the activities to support implementation at the local level. SAPIP Municipality Implementation Units (MIUs) will be established and supported by consultants contracted to the PMU. District Agriculture Officers, as part of the MIUs, will work with the PMU for sector coordination at the district level and for the preparation of the SAPIP annual work plan.

35. Farmer groups supported and formed under the project will be responsible for the identification, planning and management of subprojects, including procurement and financial management. Sufficient technical guidance would need to be provided to communities to ensure that project activities are implemented in line with the PIM and applicable legal agreements. Sub-grant procurement and financial management guidelines will be part of the overall PIM and will be made available to all farmer groups receiving support.

Environmental and Social (including safeguards, citizen engagement and social accountability)

36. *Social*: The project will engage with communities through farmer groups, ensuing participation by women farmers and youth as well. The planning processes will strengthen community participation in rural development planning processes. The PMU is responsible for applying the ESMF guidelines to the project overall and will use the templates and checklists in the ESMF to review sub-projects, at proposal stage, during and after implementation.

37. No physical relocation is expected due to the project and the project will monitor that any and all impacts will be addressed as voluntary donations in line with the Resettlement Policy Framework.

38. *Gender*: A Gender Action Plan is expected to be developed under the project and, in addition to the targets for women farmer groups, will be used to guide project activities. Capacity development for women farmers and participation of women and ethnic groups in planning, decision making and monitoring processes will be part of the project work plan, and gender and disaggregated data will be continuously collected by the PMU.

39. *Social Accountability and Citizen Engagement*: The PMU will develop and adopt a number of measures to strengthen citizen engagement and accountability. In particular, features such as a free hotline may be introduced for grievance redressal. The project will also have information disclosure and transparency measures such as timely disclosure of key information through the project website include progress reports, sub-grant information etc. The PMU will also actively use community radio and other media platforms to showcase project achievements.

40. *Environment*. Most civil works to be financed under the project will be small scale but technical oversight will need to be provided and will be the responsibility of the PMU. Such works will require the use of screening and monitoring tools, provided for in the ESMF. The PMU's safeguards officer will be responsible to ensure that training on environmental impacts and management is imparted to farmer groups and to district/municipality extension officers.

41. Consultations for the GAFSP proposal were conducted during the preparation of the proposal. Additional consultations on the ESMF have been carried out in one district and in Dili, with plans to carry out more consultations in all districts as part of project preparation and start up activities.

Monitoring & Evaluation

42. The M&E implementation plan for the project will include: (i) organizational arrangements, (ii) monitoring of progress in the implementation of activities, (iii) M&E staffing and cost estimates, and (iv) M&E of outcomes/results. The M&E function is envisioned as part of the overall institutional development and capacity building of the project implementing units at the MAF and Municipality levels. The PMU will have the overall responsibility for M&E operations and dissemination of results. Formal M&E mechanisms and structures will be established at all levels of project implementation, while still maintaining the supervisory function of the PMU. The PMU will be responsible for monitoring implementation progress (physical and financial), and verifying and consolidating data. It will also be responsible for monitoring of overall project implementation progress, outcomes/results, evaluations, data entry/import MIS, commissioning and supervision of baseline, satisfaction, impact evaluation and other surveys.

43. A baseline study will be carried out/completed in year 1. Data on results and output indicators will be obtained through the PMU management information system and through specific surveys. Monitoring activities and providing regular feedback is an important part of the empowerment agenda and a key to the success of the project. MAF will provide inputs to the PMU on a quarterly basis as to how the various services and activities are proceeding, and whether or not project activities are responding to MAF's needs. Baseline surveys, mid-term evaluations, and beneficiary assessments will be carried out throughout the project life. Technical assistance will be provided to the PMU to enable the implementation and supervision of an independent monitoring system and to help strengthen the links between the project and MAF.

Role of Partners (if applicable)

44. FAO will be a technical partner in the implementation of the project for the MAF-wide M&E activities (sub-component 4.2). The project will also coordinate with other development partners active in the agriculture sector in Timor-Leste, including the European Union, the International Fund for Agricultural Development, USAID, the Australian Department of Foreign Affairs and Trade, and UNWomen.

Annex 4: Economic and Financial Analysis

1. The project will directly benefit about 16,500 smallholder farm households in four watersheds through capacity building activities, small-scale investments in sustainable agricultural production, environmental protection and post-harvest infrastructure, and improved access to extension services. These investments are expected to result in increased agricultural productivity and marketability, and contribute to improved food security and nutrition status in the project watersheds. Additionally, the project investments in improved agriculture resources management capability and extension services at the national level will indirectly benefit farm households located outside of the selected project watershed boundaries.

2. The main quantifiable agricultural benefits to the selected watersheds will derive from: (i) an average 20 percent increase in yields and in cropping intensity on rainfed lands as a result of improved farm practices; (ii) an average 20 percent crop yield increase and 25 percent increase in cropping intensity on irrigated lands due to adoption of improved farm practices; (iii) an average 20 percent yield increase for all crops except maize and 50 percent yield increase for maize, and a 25 percent increase in cropping intensity on irrigated lands as a result of improved farm practices and adoption of new agricultural technologies; (iv) a 20 percent reduction in agricultural production losses due to improved storage facilities; (v) about 20 percent increases in marketable surpluses due to increased productivity and reduced production losses; (vi) an incremental income from fish production through investments in fish ponds or adoption of rice-fish farming technology; and (vii) a 10-15 percent increase in poultry and pig productivity as a result of improved feeding and fodder management and animal husbandry practices.

3. Other quantifiable potential benefits to the project investments that were not estimated in the current analysis include: (i) nutrition and food security benefits resulting from improved availability (and consumption) of nutritious food including fish, legumes and vegetables and improved access to nutritious food by raising farm incomes; (ii) increased value addition as a result of investments in grain drying and processing equipment; (iii) environmental benefits from adoption of climate-smart agriculture practices and integrated agriculture watershed planning; and (iv) agricultural productivity increases in areas outside the target project areas as a result of improved national agriculture resources management capability and improved research and extension services.

4. The overall project impact is calculated by aggregating agricultural, fish and livestock benefits. These benefits are assessed for a period of 20 years, a period which corresponds to the potential technical life of the small-scale farm and community investments if adequately operated and maintained, at 2016 financial prices and using an opportunity cost of capital of 5.0 percent.

Financial Analysis

5. The project investments generate incremental financial returns to smallholder farmers with an average farm size of 0.50 ha, the level of which varies depending on the type of agricultural land operated (rainfed or irrigated) and on the range and types of project activities they benefit from. The highest incremental benefits at USD 253 per ha are expected for the farmers who manage rainfed lands and adopt improved farm practices. Incremental benefits to those farmers

who manage irrigated lands and adopt improved farm practices and also new technologies are estimated at USD 200 per ha. The lowest incremental benefits, at USD185 per ha, are expected for farmers who manage irrigated lands and adopt improved farm practices but not new agricultural technologies. Around 30 percent of direct beneficiaries are expected to receive an incremental income at USD 70 per household from improved poultry and pig productivity, while another one percent of the project beneficiaries are expected to generate an incremental benefit at USD180 per household from investments in fish production.

6. Based on these estimates, project investments are expected to support the incremental production of 853 tons of paddy, 1,212 tons of maize, 100 tons of legumes and 267 tons of vegetables at the project's full maturity or in project year 7 onwards. When the financial benefits to only direct beneficiaries and associated costs of the project investments are accounted for, the estimated financial rate of return for the whole project is 11.5 percent with a financial net present value of USD 7.8 million and benefit to cost ratio of 3.6.

Economic Analysis

7. The economic internal rate of return (ERR) to the whole project, when benefits to the direct beneficiaries and associated investment costs are accounted for, is estimated at 13.0 percent, with the economic net present value at USD 9.5 million and benefit to cost ratio of 4.0.

8. Sensitivity analysis tested the robustness of the project for three sensitivity variables: an increase in the project cost, a benefits decline, and a two-year delay in benefit accumulation. The project is moderately sensitive to changes in all three variables. A 20 percent project cost increase reduces the base ERR to 10.0 percent, while a 20 percent decline in benefits reduces it to 9.5 percent. A two-year delay in the benefit accumulation results in an ERR of 9.3 percent. The project, therefore, is considered robust.

Annex 5: Greenhouse Gas Accounting

REPUBLIC OF TIMOR LESTE: Sustainable Agriculture Productivity Improvement Project

Background and Methodology

1. In its 2012 Environment Strategy, the World Bank adopted a corporate mandate to conduct greenhouse gas (GHG) emissions accounting for investment lending. The quantification of GHG emission is an important step in managing and ultimately reducing GHG emissions, and is becoming a common practice for many international financial institutions.

2. To estimate the impact of agricultural investment lending on GHG emission and carbon sequestration, the World Bank uses the Ex-Ante Carbon-balance Tool (EX-ACT), developed by the Food and Agriculture Organization of the United Nations (FAO) in 2010. EX-ACT allows the assessment of a project's net carbon-balance, defined as the net balance of CO₂ equivalent GHG that were emitted or sequestered as a result of project implementation compared to a without project scenario. EX-ACT estimates the carbon stock changes (emissions or sinks), expressed in equivalent tons of CO₂ per hectare and year.

Application of EX-ACT

3. **Data source.** The Ministry of Agriculture and Fisheries provided data for the GHG accounting analysis.

4. **Basic assumptions.** Timor-Leste has a tropical climate with a moist moisture regime. The dominant soil type is High Activity Clay (HAC). Project implementation phase is 6 years and the capitalization phase is assumed to be 14 years. A 20 year implementation period is standard in the use of EX-ACT. The “without project scenario” is assumed not to differ from the “initial scenario”. The analysis assumes the dynamics of change to be linear over the duration of the project.

5. **Land use change.** The project assumes that with the project, 2,475 ha of degraded land will be restored to forested land, while 2,996 ha of degraded land will be converted to crops such as coffee and fruit trees.

6. **Crop production.** 11,200 ha of cultivated land is under annual crops and 2,996 ha of land is assumed be under crops such as coffee and fruit trees following land use change. The adoption of “improved water management” systems is assumed to be through simple technologies such as sprinklers. With the introduction of sprinklers, a change in cropping patterns and an increase in cropping intensity is possible. In addition, “manure application” and “residue management” will be applied to improve maize, cassava, vegetables and other crops. Residue burning is assumed to stop after project implementation. Lastly, the project assumes that a 120-day (double cropping) flooded rice system will replace a 130-day (single cropping) system if the project is implemented. The new system will use compost as organic amendment and intermittently flooded irrigated water regime during the cultivation period.

7. **Grassland.** 11,300 ha of extensively grazed grassland will be improved from a severely degraded state to a moderately degraded state with improved management including improved species and grazing management – e.g. cut and carry.

8. **Livestock.** Livestock management (including dairy cattle, buffalo, sheep, swine, poultry, and goats) will be improved with project. Technical mitigation options of the project include improved feeding and breeding practices for cattle and buffalo.

9. **Land degradation.** 26,027 ha of the forest area is degraded. Within this degraded area, around 7% is extremely degraded (bare land), around 44% is largely degraded, and 49% is moderately degraded (sparse or very sparse forest). The project will rehabilitate the degraded forest area through decreasing fuelwood collection, eradicating forest fires, and reducing the rate of vegetation destroyed from 80% to 25% after five years.

10. **Energy inputs.** 49,336 MWh electricity and 2,388 m³ gasoil will be used per year with project. Permanent sprinklers will be installed with 12,381 ha for irrigated rice and annuals.

Results

11. **Net carbon balance.** The net carbon balance quantifies GHGs emitted or sequestered as a result of the project compared to the without project scenario. Over the project duration of 20 years, the project constitutes a carbon sink of 9,666,486 tCO₂-eq. The carbon sink is largely due to reduced emissions and rehabilitation of degraded land. The project provides a sink of 175 tCO₂-eq per ha, equivalent to 8.8 tCO₂-eq per ha per year.

Table 1: Results of the ex-ante GHG analysis in tCO₂-eq

| Components of the project | Gross fluxes | | Balance |
|-----------------------------|-------------------------------------|-------------------|-------------------|
| | Without | With | |
| | All GHG in tCO ₂ eq | | |
| | Positive = source / negative = sink | | |
| Land use changes | | | |
| Afforestation | 0 | -1,317,105 | -1,317,105 |
| Other Land use change | 0 | -424,226 | -424,226 |
| Agriculture | | | |
| Annual | 0 | -531,216 | -531,216 |
| Perennial | 0 | -506,923 | -506,923 |
| Rice | 23,539 | 32,437 | 8,898 |
| Grassland & Livestock | | | |
| Grassland | 24,470 | -1,345,129 | -1,369,599 |
| Livestock | 1,303,039 | 1,349,436 | 46,397 |
| Management of degraded land | 2,565,776 | -3,548,379 | -6,114,155 |
| Energy use | 0 | 539,831 | 539,831 |
| Irrigation installation | 0 | 1,612 | 1,612 |
| Total | 3,916,823 | -5,749,663 | -9,666,486 |
| Per hectare | 71 | -104 | -175 |
| Per hectare per year | 3.5 | -5.2 | -8.8 |

Annex 6: Implementation Support Plan

REPUBLIC OF TIMOR LESTE: Sustainable Agriculture Productivity Improvement Project

1. The strategy for Project Implementation Support (IS) by the Bank reflects the nature of the Project and its risk profile, particularly for implementation risk which is considered high in the context of the current situation in Timor-Leste where the country is undergoing considerable administrative changes with implications for project implementation. The strategy is an indicative and flexible instrument which will be revisited during implementation and as part of the Implementation Status and Results Report (ISR) reviews, and adjusted based on emerging challenges and field conditions.

2. **Overall project management.** Support to the overall project supervision will focus on the following areas: (a) fiduciary capacity to promote the establishment of adequate internal control systems and overall governance; (b) overall strategic planning and coordination across development partner programs and decentralization to municipalities, and (c) technical capacity, alignment with project objectives; (d) monitoring of project implementation, including results indicators, social accountability and independent verification.

3. **Fiduciary aspects.** The Bank will: (a) provide implementation support and training as necessary; (b) follow up on the Project's financial management system and its adherence to the Operational Manual, including but not limited to accounting, reporting and internal controls; (c) provide guidance on the Bank's Procurement Guidelines to the PMU/MAF; (d) review procurement documents and provide timely feedback; and (e) help monitor procurement progress against the Procurement Plan.

4. **Environmental and Social Aspects.** The Bank will emphasize opportunities for social inclusion and environmental sustainability provided by the Project, as well as on delivering commitments to gender equity issues. The Bank will support and carry out close monitoring of the ESMF application and Bank social and environmental specialists will be available to provide timely guidance to MAF. Under the on-going IDF grant, the Bank has supported training in both environment and social safeguards at MAF. However training at the district level and below will need to be built. In the first 12 months of implementation, capacity development support will be provided by environmental and social specialists.

5. **Information and Communication.** An outreach and communication strategy will support the implementation of the Project in its different areas of intervention. The strategy will also seek to support implementation of consultative and accountability processes, including information on a grievance redress mechanism.

Implementation Support Plan

6. In coordination with the PMU/MAF and development partners, the Bank team (Task team leadership, safeguards, procurement, financial management, and technical support) will draw on resources from within the country and the region to support the project. International and national consultants will be hired to provide advisory services in specialized issues.

7. The PIM, matching grants manual, financial management procedures manual and procurement plan will be prepared and finalized prior to project negotiations and/or as dated covenants and effectiveness conditions. Key PMU staff will be appointed prior to effectiveness. Supervision will also start immediately after effectiveness and the project will be launched in all target areas, as well as in Dili, to inform all stakeholders. Frequency of formal supervision is expected to be two missions per year but more frequent technical supervision is also expected, including by country based colleagues. Fiduciary and safeguards will be key components of the initial workshops, and Bank staff in addition to missions will continue to mentor and provide guidance to project staff throughout the implementation period.

8. A mid-term review will determine needs for restructuring and other changes in the project design and/or implementation arrangements. The Implementation Plan will be revised regularly on the basis of project progress and continuous risk assessment.

9. During implementation support missions, the task team will thoroughly review overall implementation progress, confirming that plans for implementation and the necessary institutional mechanisms are in place and in accordance with the agreed design of the project. To assess this the team will (i) undertake a detailed review of each project component; (ii) engage in detailed dialogue at the PMU, Municipal, Suco and farmer group levels to identify key issues and agreed upon actions to achieve the outcomes envisaged for the following 6 months and/or project period; (iii) conduct a review of fiduciary aspects including disbursements and procurement and; (iv) verify compliance of project activities with the Bank's environmental and social safeguard policies.

Detailed Implementation Support required:

| <i>Time</i> | <i>Focus</i> | <i>Skills Needed</i> | <i>Resource Estimate</i> | <i>Partner Role</i> |
|----------------------------|--|---|--------------------------------------|--|
| <i>First twelve months</i> | Establishment of implementation capacity | Procurement and FM | 4 SWs | |
| | Planning and watershed development process | Rural Development Spec. | 4 SWs | EU TA to MAF to participate in process |
| | Project Management and Communication | Task Team Leader Operations Analyst | 12 SWs 10 SWs | |
| | Monitoring and Evaluation | M&E Specialist | 4 SWs | FAO specialists provide direct TA to MAF |
| | Social Development and community engagement/gender and Environmental Specialists | Social Development Specialist Environment Specialist | 3 SW (Social Dev and Gender) 2 SW | |
| | Nutrition | Health/Nutrition Specialist | 1 SW | |

| <i>Time</i> | <i>Focus</i> | <i>Skills Needed</i> | <i>Resource Estimate</i> | <i>Partner Role</i> |
|---------------------|---|--|----------------------------|--|
| <i>12-48 months</i> | Procurement Implementation support | Procurement specialist | 8 SWs | |
| | FM implementation support | FM specialist | 8 SWs | |
| | Environmental sustainability and safeguards supervision | Environmental Specialist | 8 SWs | |
| | Social Development and community engagement/gender | Social Development Specialist/Gender Spec. | 8 SWs | UN Women may provide advisory services |
| | Post-harvest storage, processing, technologies | Rural Development Spec. | 3 SWs | |
| | Watershed management /small scale irrigation | NRM specialist | 3 SWs | |
| | Nutrition | Health/Nutrition Specialist | 4 SWs | |
| | Project Management, M&E | Task Team Leader Operations Analyst M&E Specialist | 36 SWs 42 SWs 12 SWs | |

Annex 7: Project Map

