

GEF-8 REQUEST FOR MSP (1-STEP) APPROVAL

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General Project Information

Project Information

Project Title:

Rural Resilience and Livelihood Improvement Project (RRLIP)

Region:

Timor Leste

GEF Project ID:

11669

Country(ies):

Timor Leste

Type of Project:

MSP

GEF Agency(ies):

ADB

GEF Agency Project ID:

Project Executing Entity(s):

Ministry of Rural Development and Community Housing

Project Executing Type:

Government

GEF Focal Area (s):

Climate Change

Submission Date:

9/1/2024

Type of Trust Fund:

LDCF

Project Duration (Months):

60

GEF Project Grant: (a)

4,588,000.00

GEF Project Non-Grant: (b)

0.00

Agency Fee(s) Grant: (c)

412,000.00

Agency Fee(s) Non-Grant (d)

0.00

Total GEF Financing: (a+b+c+d)

5,000,000.00

Total Co-financing

22,147,000.00

PPG Amount: (e)

0.00

PPG Agency Fee(s): (f)

0.00

PPG total amount: (e+f)

0.00

Total GEF Resources: (a+b+c+d+e+f)

5,000,000.00

Project Tags

CBIT: No NGI: No SGP: No Innovation: No

Project Sector (CCM Only):

Climate Change Adaptation Sector

Taxonomy:

Focal Areas, Climate Change, Climate Change Adaptation, Livelihoods

Rio Markers

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
No Contribution 0	Principal Objective 2	No Contribution 0	No Contribution 0

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? (iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B “project description”.(max. 250 words, approximately 1/2 page)

Timor-Leste has a population of approximately 1.3 million (2020) and a land area of 14,874 km². Its complex and rugged topography means it is highly exposed to climate disasters, notably localised flooding in low-lying areas and regular land-slides across all higher areas – both due to extreme rainfall events. Drought and heatwaves are also an increasing challenge everywhere. The high variation in seasonal rainfall (i.e. the start day, the duration, the consistency) is another growing challenge. Finally, the prevalence of tropical storms and cyclones exacerbates all these hazards. Climate change is projected to increase the intensity of all these climate hazards, notably by making intensive rain events more intense, the current dry season drier, and dry/wet seasons less predictable.

Much of Timor’s rural population is highly vulnerable to these climate hazards. This vulnerability stems from (i) the high dependence on natural resources for food security, water security and livelihoods; (ii) economic and social isolation due, in part, to the extremely rugged terrain and the poor

infrastructure; and (iii) the high levels of poverty in many rural areas.

Manatuto municipality is typical of areas highly vulnerable to climate change. It stretches from the northern coast to the southern coast, encompassing low-lands, mid-lands and highlands. **The rural population of Manatuto accounts for 91% of the total population.** Most of the rural farmers are subsistence farmers and have limited livelihood and income generating opportunities. Village – or *suco* - level poverty incidence ranges between 10 to 71%. **Food insecurity incidence is very high and affects an estimated 50% of the population. 27% of children are classified as being ‘severely stunted’.** Also, notably, it was one of the municipalities the hardest hit by the Tropical Cyclone Seroja in 2021.

The Timor-Leste Rural Resilience and Livelihoods Improvement Project (RRLIP) aims to improve climate resilience, improve food security, and diversify the livelihoods in rural communities in Manatuto municipality. It will support about 37,000 people by increasing water security through locally-adapted infrastructure, improving the productivity of farms and agroforestry through climate-smart approaches, enhancing market linkages, and developing diversified livelihood opportunities. It develops and follows an inclusive and participatory approach in which the government works closely with communities.

Project Description Overview

Project Objective

Resilience and livelihoods of rural communities in Manatuto municipality improved

Project Components

Planning, capacity building and participation.

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing (\$)	Co-financing (\$)
750,000.00	2,100,000.00

Outcome:

Institutional and organizational capacity of farmer groups, communities, and government strengthened

Output:

- 1.1 Baseline village climate and disaster vulnerability assessments completed.
- 1.2 Suco development committees formed at the village level and operationalized.
- 1.3 Village landscape management regulations and community-based climate adaptation plans.
- 1.4 Completed capacity development plans.
- 1.5 Farmer groups, suco development committees, and government staff trained and capacity developed.
- 1.6 Climate adaptative farm management and market information system created.
- 1.7 Knowledge and information generated through farm management and market information system disseminated.

Rural water sector development

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing (\$)	Co-financing (\$)
2,350,000.00	13,790,000.00

Outcome:

Rural water-related infrastructure strengthened

Output:

2.1 In project areas of high rainwater runoff, water harvesting and flood protection infrastructure designed.

2.2 Water harvesting, storage, and water and flood management roles and responsibilities established.

2.3 Civil works for water harvesting and flood protection infrastructure.

2.4 Local stakeholders and water managers trained on operation and maintenance to ensure subproject sustainability

Rural agriculture development

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing (\$)	Co-financing (\$)
1,200,000.00	3,200,000.00

Outcome:

Livelihood and economic diversification for climate resilience developed

Output:

3.1 Market and supply studies in targeted municipalities (including identification of private sector partners and local service providers for training, financial services, and extension services) undertaken.

3.2 A crop suitability map and a cropping calendar developed.

3.3 Village-level activities to enhance diversified farming systems and market linkages identified through participatory processes.

3.4 Farmers and farmer groups trained to implement identified activities (from 3.3).

3.5 Activities identified in 3.3 implemented.

M&E

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing (\$)	Co-financing (\$)
70,000.00	932,000.00

Outcome:

Monitoring and Evaluation Reports (Annual, Midterm and Terminal Report)

Output:

Annual Report, Midterm Report and Terminal Evaluation Report

Component Balances

Project Components	GEF Project Financing (\$)	Co-financing (\$)
Planning, capacity building and participation.	750,000.00	2,100,000.00
Rural water sector development	2,350,000.00	13,790,000.00
Rural agriculture development	1,200,000.00	3,200,000.00
M&E	70,000.00	932,000.00
Subtotal	4,370,000.00	20,022,000.00
Project Management Cost	218,000.00	2,125,000.00
Total Project Cost (\$)	4,588,000.00	22,147,000.00

Please provide justification

Note, in addition to above: - the government and ADB have mobilized \$13.8 million in parallel co-financing (not administered by ADB) from the Government of Australia to support Phase 2 of the To'os ba Moris Di'ak (Farming for Prosperity) (TOMAK) Project; - the government and ADB are actively securing the following co-financing, to be administered by ADB, (i) \$3 million from the ADB administered Japan Fund for Prosperous and Resilient Asia and the Pacific, JFPR; and (ii) \$2.5 million from the ADB administered

Community Resilience Partnership Program Trust Fund (CRPP); - the government and ADB are also actively securing additional finance from the Adaptation Fund.

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

Timor-Leste has a population of approximately 1.3 million (2020) and a land area of 14,874 km². Timor-Leste comprises of the eastern half of Timor Island and the small enclave of Oecussi located within West Timor (a province of Indonesia). It is situated between 8°15'S – 10°30'S latitude and 125°50'E – 127°30'E longitude (see map in Figure 1.) and Annex E. [\[11\]](#)

Timor-Leste has complex and highly rugged topography. This topography is a key determinant of the natural hazards the country faces and its development challenges. Most of the country's land area has a slope of between 8-25%, and approximately 44% of the country has a slope of greater than 40%. There is significant altitudinal variation in the country, ranging from the coasts to the mountainous interior, which is dissected by steep-sided river valleys. The interior of the country is dominated by a mountain range which has several peaks rising to over 2000 meters. On the northern side, the mountains extend almost to the coast, but on the southern part the mountains taper off some distance from the coast, which provides areas of coastal plain. Timor-Leste has more than 100 rivers, but the longest is only 80 kilometers in length, and very few streams flow year-round; only 8 river courses have consistently perennial flows.

The country is vulnerable to natural hazards, at high risk of cyclones, earthquakes, tsunamis and heavy rainfall, the impacts of which are all exacerbated by limited and inadequate infrastructure and social welfare. [\[22\]](#) Coastal lands are flat and subject to flash flooding, and salinization at some points. Northern coastal lands are quite dry and experiencing droughts. Uplands are rugged and highly subject to land slides and droughts.

Despite significant development progress in its 20 years since independence, recently reduced economic growth and declining oil revenues are affecting efforts to improve and sustain health and livelihoods of the population. While the country has moved away from conflict and violence, Timor-Leste is still fragile in its economic and social development. Timor-Leste is one of the poorest countries in Asia. Poverty is particularly prevalent in rural and peri-urban areas. These and other

socio-economic factors mean Timor-Leste in general has limited adaptive capacity and socio-economic resilience.^[3]^[3]

In the preparation of this project, assessments were undertaken of the most climate exposed^[4]^[4] and most vulnerable municipalities^[5]^[5].^[6]^[6] Based on these assessments, Manatuto was identified as one of the most exposed and vulnerable Municipalities to climate change impacts on rural areas and livelihoods. Further, Manatuto (see Figure 1) was selected as the first and highest priority for support because:

- Manatuto is one of only two municipalities which borders both the north and south coast, meaning diverse demographic and socio-economic conditions can be addressed;
- Manatuto municipality covers all six agroclimatic zones of the country, which would enable the project to demonstrate rural livelihood options for the country and contribute to replicating the project approaches in other municipalities. all six climatic zones present in Timor or present in Manatuto, meaning all can be addressed, and lessons learnt disseminated;
- Food insecurity incidence is very high, affecting around 50% of the population, with about 27% of children being severely stunted;
- Poverty is a significant issue in the municipality, with 43% of households falling below the national poverty line;
- High geographical isolation and limited access to urban centers;
- The central upland areas in Manatuto have been experiencing higher rainfall and longer wet season, which, in combination with steep slopes, lead to high erosion risk, sedimentation, and changing riverine patterns and alignment;
- The coastal lowland areas in Manatuto suffer from frequent flooding during the rainy seasons;
- Extreme rainfall events, storms and cyclones have led to losses in farming, and damages to irrigation channels, housing and productive agricultural assets;
- Manatuto was one of the municipalities that was hardest hit by the Tropical Cyclone Seroja in 2021.
- Complementarity and non-overlap with ongoing or planned projects supported by other development partners.

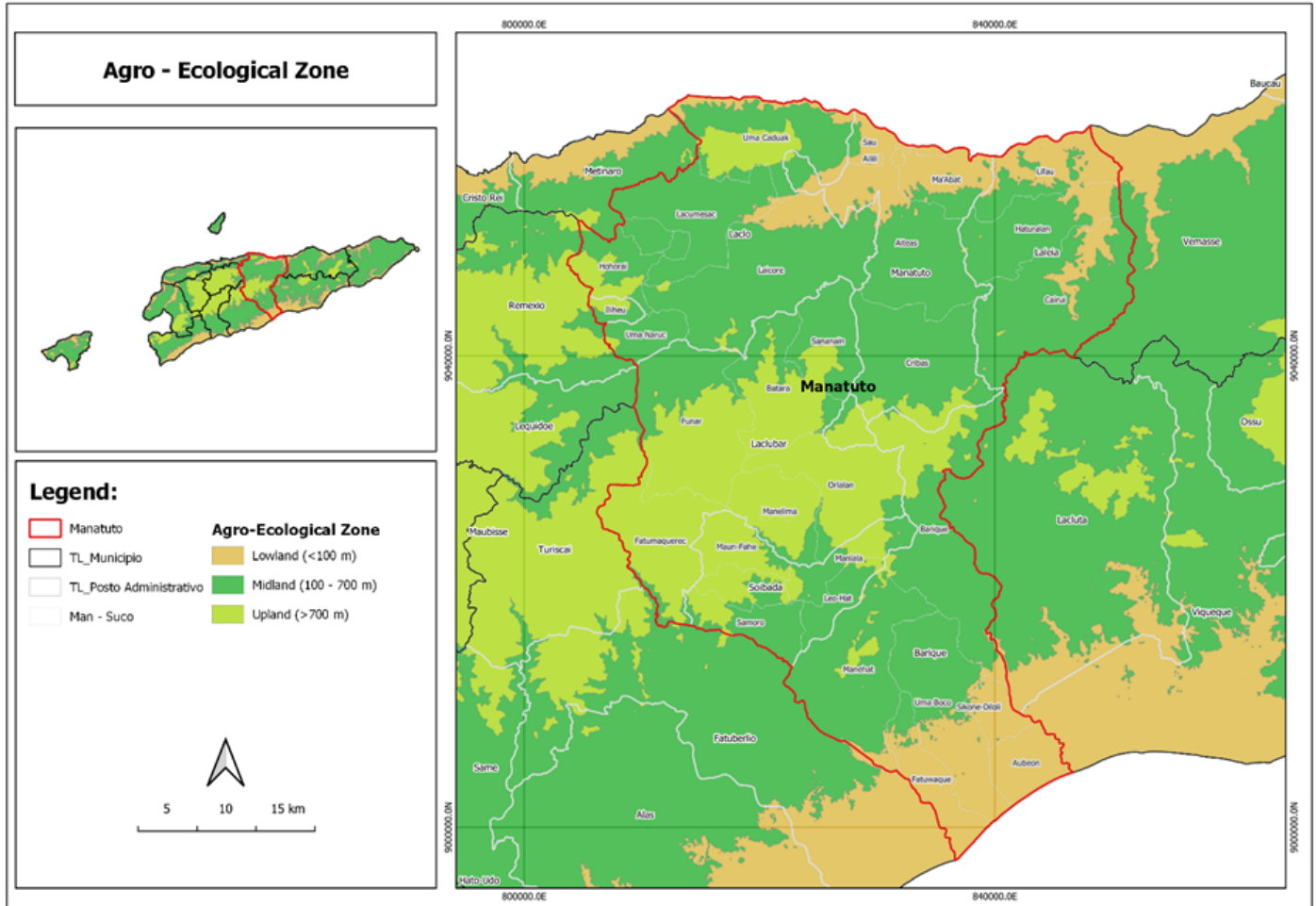


Figure 1: Map of Timor-Leste and Manatuto, showing agro-ecological zones.

Climate change is increasing the intensity and impact of all climate hazards. This particularly impacts the most vulnerable people and communities. This negative force undermines any recent development advances. Vulnerable communities are in a downward negative spiral. Notably, water insecurity and food insecurity, caused and exacerbated by climate change, are prevalent.

The Feasibility Report in Annex I includes the following documents with full details:

Table 1: Summary of Feasibility Report in Annex

Annex	Contents
I.a.) Profile of Manatuto Municipality.	A detailed description from all key aspects
I.c.) Feasibility Report – Output 2 (Rural Water-Related Infrastructure Strengthened)	A detailed assessment of the water situation, water insecurity, organizational and capacity issues, and required measures at the village level.
I.d.) Feasibility Report – Output 3 (Livelihood and Economic Diversification for Climate Resilience Enhanced)	A detailed assessment of the agricultural and socio-economic situation, food insecurity, market conditions, organizational and capacity issues, and required measures at the village level.

I.e.) Climate assessment	A detailed description of the climate, climate trends, climate change, climate hazards and climate impacts on rural communities in Manatuto
I.2.)	Terms of Reference of the proposed project consultants.

[1] Note on data: Late in the project preparation, the 2022 census data was released. This updated data was used in some assessments. However, other assessments and reports were completed prior, and based on data from the 2015 census. It is important to note that with regards to Manatuto Municipality **the figures (population, poverty levels, food insecurity levels) are almost unchanged**. The use of slightly different data bases may cause some minor inconsistency in figures throughout this proposal.

[2] Sources: “Climate risk country profile – Timor-Leste”, World bank group/ADB, 2021 and “Timor-Leste’s National Adaptation Plan, Addressing climate risks and building climate resilience”, Government of Timor-Leste, 2020.

[3] “Timor-Leste, Water Sector Assessment and Roadmap”, World Bank Group (2018)

[4] Exposure is observed as: agricultural productivity is shown to be exposed and at risk to climate conditions; climate change is shown to be a stress multiplier; increases in extreme events and changes in temperature and rainfall affect agriculture; and already stressed water resources.

[5] Vulnerability due to: having the least developed agricultural production systems; the essential nature of agriculture in the Municipality; rates of food insecurity; low public investment rates in rice; an underdeveloped fish sector and low livestock productivity.

[6] See, for example, *Sector Assessment (Summary): Agriculture, Natural Resources, And Rural Development*, prepared under WHAIP Project, ADB, 2023.

B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF’s policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

This section describes in detail the current situation at the project sites and how climate change is taking many communities into a downward development spiral. It then introduces the project’s theory of change – i.e. how the project interventions will shift or transform the trajectory of development across the project sites to one that is resilient to climate change and an upward

development spiral. The third part of this section describes in detail the project activities, strategy and logic for achieving this change.

CURRENT SITUATION

This section provides an overview of the current situation. For a detailed description of the demographic, geographic and socio-economic situation in Manatuto, see Annex I.a. For a detailed description of the climate, climate trends, climate change, climate hazards and climate impacts on rural communities in Manatuto see Annex I.e. Annex I.e. also includes a zoom-in on the climate situation in three Manatuto Sucos – Fatuwaque, Soibada and Cribas.

Manatuto Municipality

Manatuto is one of only two municipalities which borders both the north and south coast of Timor-Leste. Manatuto municipality has an area of approximately 1,780 square kilometres (km²). It is divided into six Administrative Posts (Barique, Soibada, Laclubar, Manatuto, Lacto and Lleida), with a total of 31 Suco (village) and 103 Aldea (hamlets). The total population is approximately 50,859 with 8,824 households, of which about 91% are rural. Out of 31 sucos, one, Ailili, is considered to have urban population only according to the 2022 census. The rural population of Manatuto municipality is 46,204.^{[1]⁷} Approximately 73% of the population relies on agriculture as their primary source of income. Tetun, Galoli, Idate Habun and Dadua are the main local languages. The capital, Manatuto town, is located on the north coast, 66km east of Dili^{[2]⁸}, and is linked to Dili via a National Road and to Natarbora on the south coast via a National Road.^{[3]⁹} Manatuto has good transport connectivity with 11 transportation routes linking it to other municipalities

Poverty is a significant issue across the municipality. In 2014 the poverty headcount was 43%, the seventh-highest incident rate in Timor-Leste^{[4]¹⁰}. There are significant disparities between sucos at the sub-municipality level.^{[5]¹¹} The sucos with the highest level of poverty are Aubeon, Barique, Hohrai, Lacumesac and Manelima, Cribas and Fatumacerec. Household dietary diversity remains limited in Manatuto. Chronic malnutrition is a significant issue with 27% of children suffering from severe stunting.^{[6]¹²}

For all Timor-Leste, the prevalence of geographical isolation and limited access to urban centers, combined with existing socio-economic conditions, and in most places an extremely rugged terrain, compound the acute vulnerability of most rural settlements to climate change-induced risks. According to a 2013 study by the ADB, among the 89 sucos (administrative villages) with the lowest living standards, only 3% of households have access to electricity, in stark contrast to the 66% average in the 89 sucos with the highest living standards. Furthermore, access to improved water and sanitation facilities is significantly higher in sucos with higher living standards.

Recently, the World Bank – in close collaboration with the General Directorate of Statistics (DGS) Timor-Leste – used small area estimation techniques to develop suco-level gender-sensitive poverty

maps. In Manatuto, the suco-level headcount poverty rates range from 10% to 71%. The poverty gap and poverty severity index follow similar trends although with some slight variation. These spatial level maps provide useful information regarding the substantial degree of variation in poverty amongst the sucos within a municipality.

As mentioned, approximately 73% of Manatuto's population relies on agriculture as its primary source of income, primarily engaging in small-scale farming, predominantly for household consumption with occasional surplus for sale. According to DGS (2020)^{[7]¹³}, Manatuto has 3,371 ha of agricultural holdings and the average farm size is 1.35 ha. There are also 314 households engaged in fishing and 72 households engaged in aquaculture. It has a comparatively high number of goats, pigs, and buffalo. Covering a land area of 1,785 km², it boasts 12,731 hectares suitable for rice cultivation and an additional 19,896 hectares suitable for maize production.

Analysis of 'coping' capacity – looking at ability to cope with climate shocks – has revealed that the impact of climate change is dependent on both the magnitude of change and the municipality's ability to cope. The suco level poverty indicators for Manatuto provide a means of identifying where improvements in coping capacity can be targeted in order to address the most vulnerable to climate change by for example increasing the resilience of infrastructure [\[AA2\]](#).

Climate, climate hazards and trends

Previous studies^{[8]¹⁴} define distinct agro-climatic zones across Timor-Leste into climate zones based on altitude and rainfall. This has led to a classification of six climatic zones in the country. Manatuto includes all six climatic zones (see Figure 2). Of particular note is the bi-modal rainy season in the southern half of the municipality, which allows for a short second cropping season. Mount Diatuto is the highest mountain with an elevation of 1,770 masl. The municipality also includes three watersheds (Laclo, Laleia and Tukan Sanen) and five rivers (Laclo, Laleia, Sanen, Laclo du Sol and Clere). See Annex I.e. for full details.

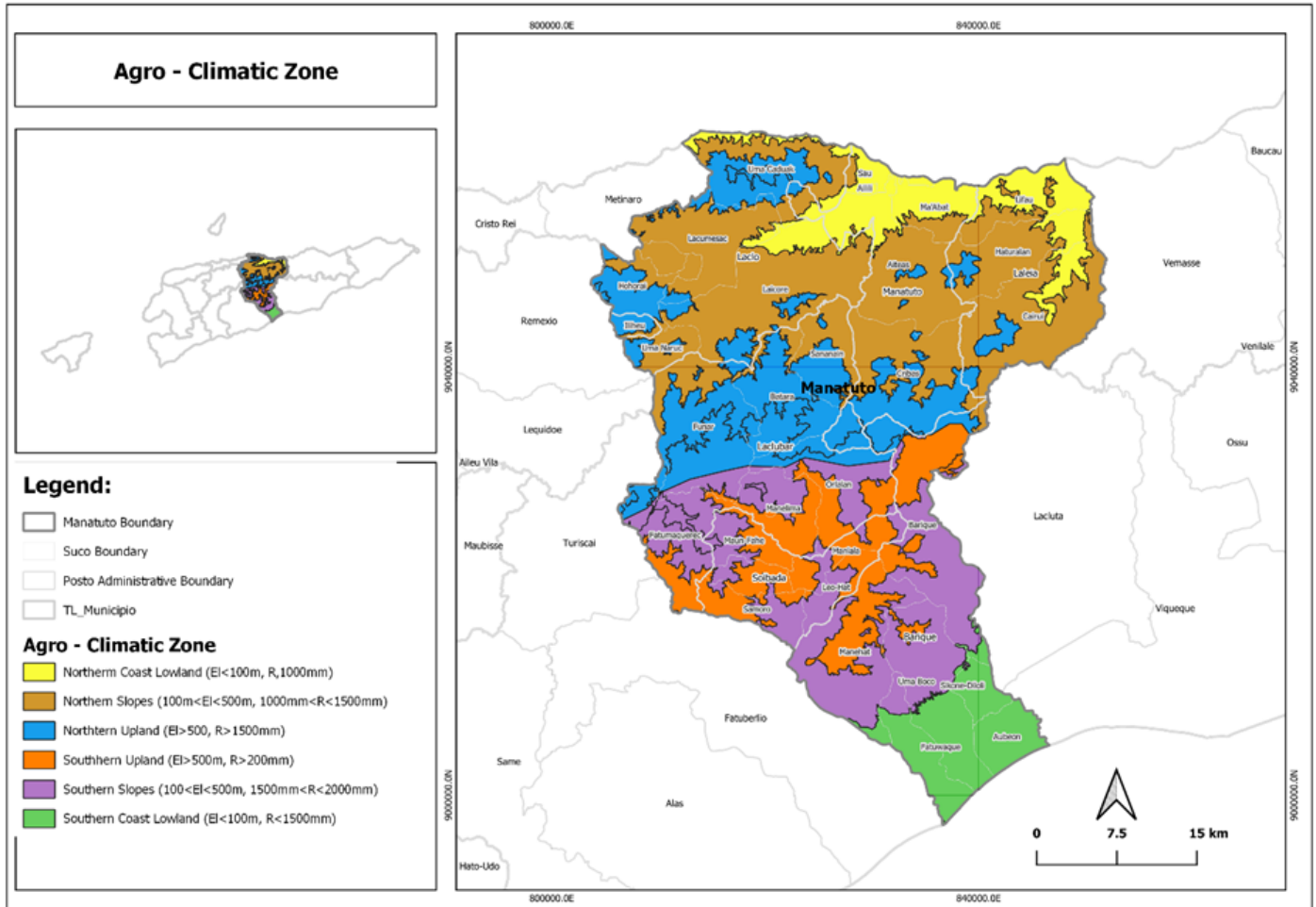


Figure 2 Agro-climatic zones of Manatuto

Source: TRTA Consultants

However, as part of project preparation, in order to develop snapshot descriptions of climatic characteristics in the municipality of Manatuto, the agro-climatic zones were simplified to create three “climate zones”. These are the North, Central and South Climate Zones (see Figure 3). The assessments and planning set out in Annex I was designed to cover all three climatic zones and to focus on the sucos with the highest levels of poverty.

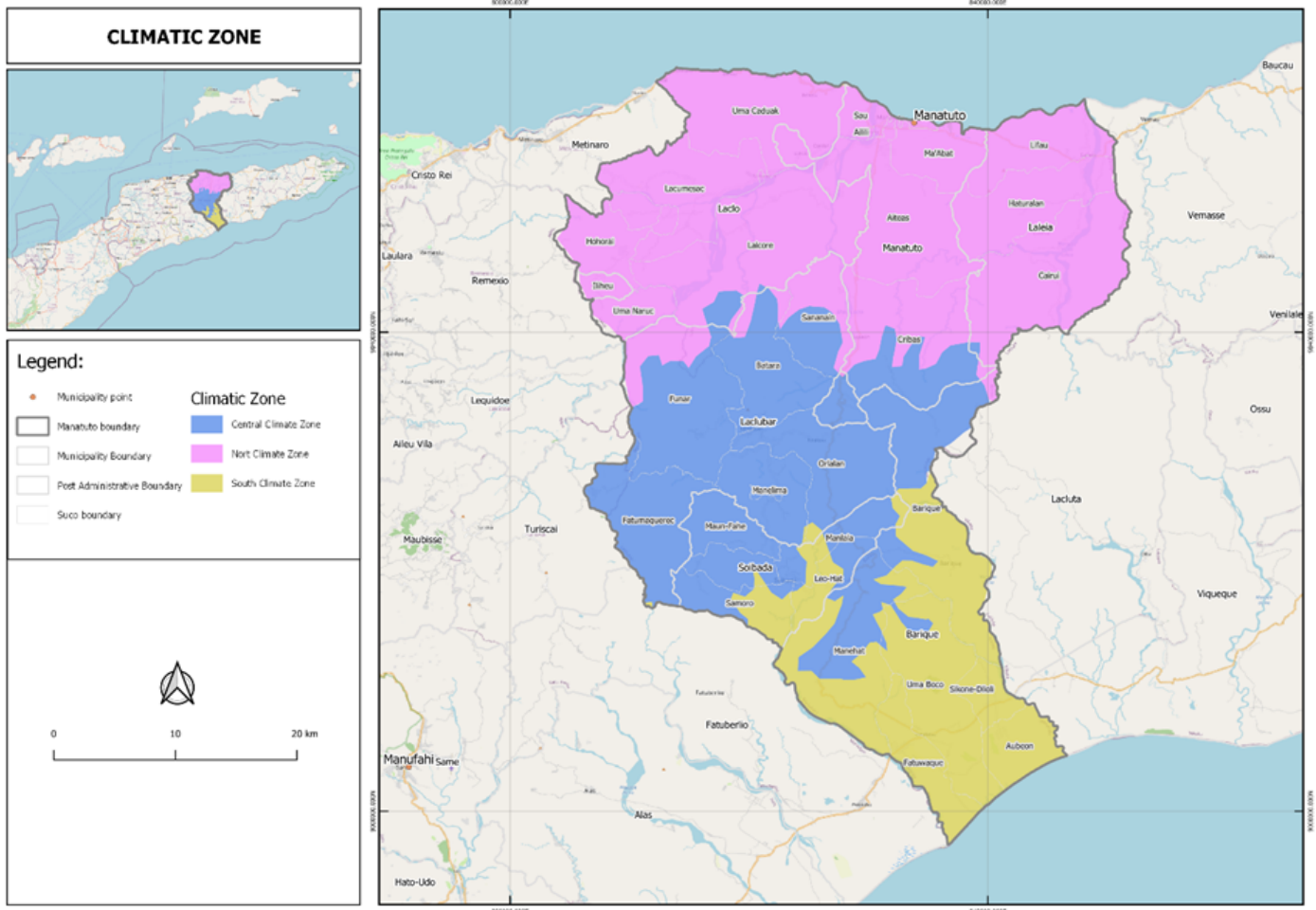


Figure 3 Simplified climate zones of Manatuto

Source: TRTA Consultants

The combination of localized weather and geographical factors influences climates across Timor-Leste. Within each year, the annual cycle of monsoons dominates overall seasonal patterns which are further influenced by local topography. Inter-annual variations of rainfall show a strong link to ENSO variations. Droughts are highly correlated with El Niño years and the La Niña phase increased the likelihood of an intense rainy season and more tropical storms.

In general, the northern coastal areas are slightly hotter and have shorter wet seasons and an annual rainfall of around 900–1,300 mm. The peak wet season months of December to March, are followed by a transitional period in April and May. Rainfall in these transitional months varies considerably from year to year, any reduction in the reliability of rainfall at this time will impact irrigation demands and crop productivity for rainfed agriculture. The dry season months from May to November consistently have low rainfall and irrigation supply will be essential at this time. The relatively dry climate, and high levels of deforestation post-independence, have led to many areas near the northern coast approach a ‘barren’ status, with drought becoming an increasing problem/

The central upland areas have a much higher rainfall and a slightly longer wet season. Steep hill slopes combined with high erosion risk are significant issues for agriculture. Landslides are a major issue, very prevalent but mostly small, ensuring that all infrastructure is regularly subject to critical damage.

The southern midland and coastal regions receive more rainfall and a longer wet season, starting earlier in November and extending through to May. Rainfall intensities are considerably higher in the zone. This is an issue in terms of

flooding, river channel stability, and landslide risk. Table 2 and Table 3 provide a summary of the climate characteristics and climate trends for each of the three zones in Manatuto

Table 2: Summary of climate characteristics for each climate zone in Manatuto

Terrain height	0–500 m	500–1,500m	0–500 m
Annual average temperature	25°C to 27°C	20°C to 23°C	24°C to 28°C
Maximum temperature	30°C to 32°C	24°C to 27°C	28°C to 33°C
Minimum temperature	20°C to 24°C	17°C to 19°C	18°C to 23°C
Annual average rainfall (max-min)	1,230 mm	Annual average rainfall (max-min)	1,230 mm
Daily maximum rainfall (1981-2021)	82 mm	140 mm	184 mm
10% AEP daily rainfall	70 mm	116 mm	134 mm
Rainfall season	Dec to Apr	Dec to Apr	Dec to May
Annual actual evapotranspiration	1,030 mm	1,390 mm	1,460 mm
Annual PET	2,260 mm	2,240 mm	2,240 mm

Table 3: Summary of Trends in climate Indices, based on rainfall and evapotranspiration data for each zone

	North Zone	Central Zone	South Zone
Annual rainfall	Slight decreasing trend (reduce 16 mm/10y)	Slight decreasing trend (reduce 15 mm/10y)	Slight increasing trend (increase 7 mm/10y)
Wet season rainfall	Slight decreasing trend	Very small decreasing trend	No significant trend
Dry season rainfall	No significant trend	No significant trend	No significant trend
Wet season start date	Slight trend for earlier start	Slight trend for earlier start	Slight trend for earlier start
Wet season end date	Slight trend for earlier end	Slight trend for earlier end	Slight trend for earlier end
Maximum 1-day rainfall	Decreasing trend	Decreasing trend	Decreasing trend
Drought index (SPI)	Droughts more frequent since 2000	Droughts more frequent since 2000	Droughts more frequent since 2000
Annual average PET	Slight increasing trend	Slight increasing trend	Slight increasing trend

Manatuto is already subject to climate extremes and natural and climate-related hazards. Farming areas are exposed to drought which occurs periodically in the country usually associated with El Niño events^{[9]15}. Tropical storms bring strong winds and heavy rains causing flooding, landslides and other damage.

Due to a combination of geographic and climatic factors, flooding induced landslides represent one of the most common disasters reported in Manatuto. The steep slopes, high clay content, and significant weathering patterns combines with high incidence of extreme rainfall events to create landslide susceptibility.^{[10]16} Figure 3 presents annual rainfall together with landslide distribution indicating the strong correlation of higher topography, rainfall >1500 mma-1 with landslide incidents particularly south of the mountainous divide.^{[11]17}

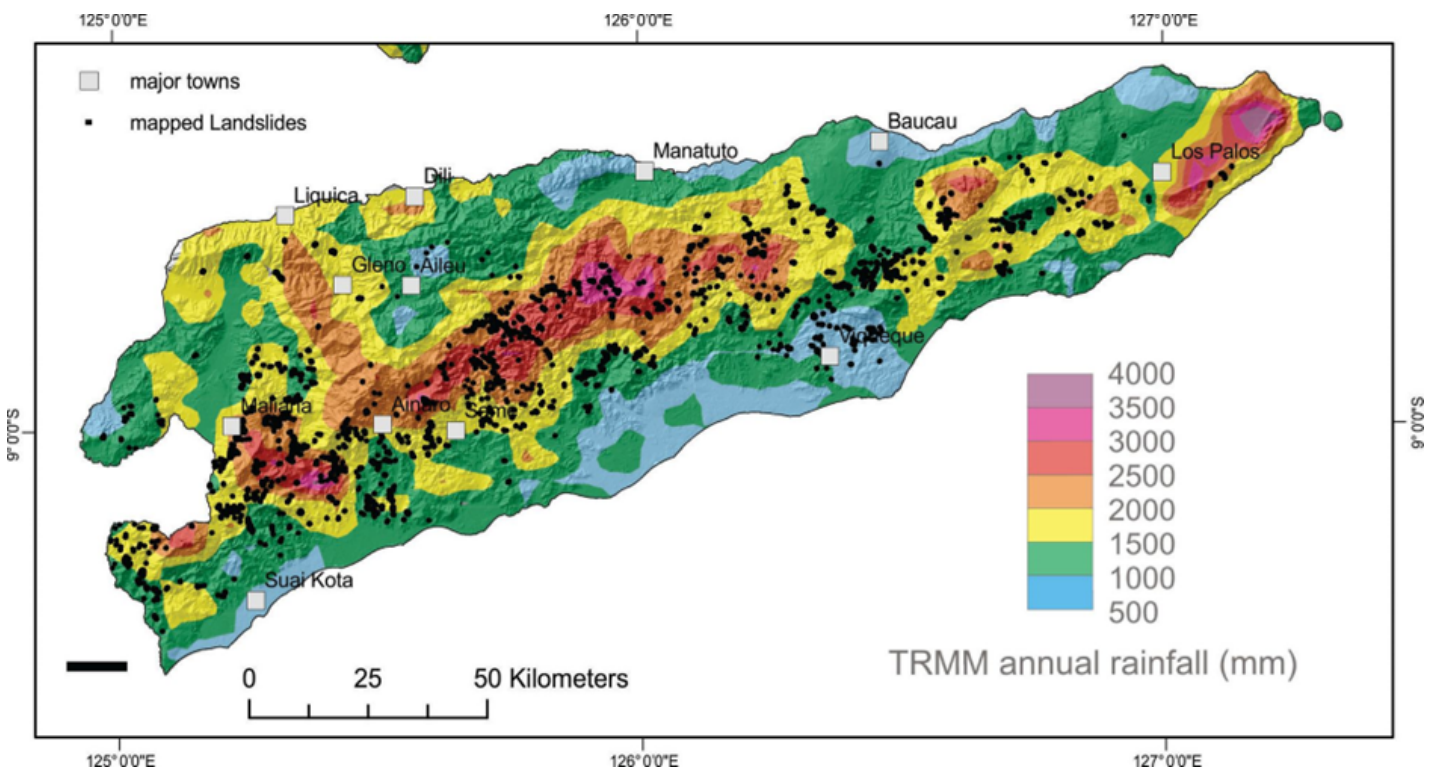


Figure 4: Tropical Rainfall Monitoring Mission (TRMM) annual rainfall data for Timor, overlain by landslide distribution. Note the strong coincidence of rainfall with high topography, and of landsliding with topography and rainfall >1500 mma-1, particularly south

Riverine and flash floods are also a frequent natural hazard in Timor-Leste's (CEDMHA 2019)^{[12]18}. Characteristically floods occur between December and march with the majority occurring in the months of January and February (UNDP 2013)^{[13]19}. The country is geographically vulnerable to flooding due to the

presence of short, fast-flowing rivers and steep and sloping terrain.^{[14]²⁰} The project area, particularly the lower watershed, is susceptible to flooding, due to high rainfall events (some due to cyclones), steep and short river and stream beds, and high runoff due to land cover degradation. Flooding impacts civil infrastructure (houses, roads and bridges) and water infrastructure (irrigation canals and intake structures), and cultivated and irrigated lands. As climate projections indicate an increase in frequency and intensity of extreme rainfall events is expected to increase the risk of flooding and related impacts such as damage to infrastructure and crops.^{[15]²¹}

There is a correlation between the natural ENSO cycle in particular the La Nina years which are associated with above average rainfall which results in increased flooding. Whilst the impact of climate change is projected to alter inter-annual ENSO-driven precipitation variability, particularly with regard to changes in intensity or location of rainfall during El Niño.

Climate change

Landslides. Extreme rainfall events which are a precursor to landslide events are projected to increase in frequency and therefore landslide risk is also likely to increase.

Riverine and flash floods are the most frequent natural hazard in Timor-Leste's. The historical return levels, return periods and the projected change in annual exceedance probability for Manatuto Municipality indicate that a 1–50-year event in 2025 will be a 1 in 29-year event by 2050. Due to a combination of geographic and climatic factors, flooding-induced landslides represent one of the most common disasters reported in Timor-Leste. Extreme rainfall events which are a precursor to landslide events are projected to increase in frequency and therefore landslide risk is also likely to increase. There are 13 villages in Manatuto within the high susceptibility zones for flooding and 24 villages within the high susceptibility zones for landslides.

Timor-Leste has a long history of droughts, with increasing duration and frequency in recent years. – they are typical of what could be expected in a changing climate where the extremes of drought and flood are amplified by climate change. Severe drought conditions occurred in 1998, 2005, 2015–2016 and 2020. In general, the frequency and severity of droughts are greater in the period after the year 2000. There is also a strong correlation between drought conditions and the El Niño periods. The SSP8.5 projections indicate decreases in the dry season rainfall – this may bring longer dry periods, mostly affecting the already drier northern part of the country. The longer-term trends indicate a drying climate with a higher likelihood of drought and an increase in severity (see Annex I.e.).

A key issue reported by farmers in the changing seasons. Wet seasons are starting later, but lasting longer. Dry seasons are experience short periods of rain. These factors make it very difficult for small holder farmers working with rainfed systems and lead to lots of losses.

Projections indicate minimum, maximum and average temperatures will all increase under all scenarios. Average temperatures are projected to increase by of 0.6°C for the 2020–2039 period, 1.3°C for the 2040–2059 period, and 2.3°C for the 2060–2079 period. Projections for rainfall anomaly are less decisive in terms of trends. For the near term there is some increase for January, February, and March which indicates higher wet season rainfall. For the period 2040–2059, the trends are similar but less pronounced. Climate projections for changes in PET for Manatuto, indicate increases in 2020–2039, 2040–2059, and 2060–2079 are about 8%, 18% and 32%

respectively. The quantity of change will have a significant impact on crop demands over the course of the century as temperatures increase.

Recent work by SPREP and CSIRO, [\[16\]22](#) in connection with Timor-Leste Department of Meteorology, led to the formulation of projected standardized scenario for the climate in 2050. The two more extreme are illustrated in the following table.

Standardised scenarios for Timor-Leste for the period 2040-2059 relative to 1986-2005	Key potential impacts
<p>Scenario 1 – Warmer and Drier (RCP2.6)</p> <ul style="list-style-type: none"> • Annual temperature: +0.9°C • Annual rainfall: -5% • More heatwaves • Less humidity • More solar radiation • Heavier rainfall events • Greater tropical cyclone impacts • Sea level rise: 16-29 cm 	<ul style="list-style-type: none"> • Infrastructure damage is projected to increase due to landslides, floods, erosion and droughts • Sea level rise will cause coastal inundation, erosion and saltwater intrusion into aquifers • Malaria, dengue fever, diarrheal diseases, and disruption to healthcare services are projected to increase due to extreme weather events • Severe coral bleaching may occur on an annual basis by 2040 under RCP8.5
<p>Scenario 4 – hotter and much wetter (RCP8.5)</p> <ul style="list-style-type: none"> • Annual temperature: +2.1°C • Annual rainfall: +25% • Many more heatwaves • More humidity • Less solar radiation • Much heavier rainfall events • Greater tropical cyclone impacts • Sea level rise: 21-36 cm 	

Rural sector and vulnerabilities

Timor-Leste is a small island developing state with a constrained production base and competitiveness, and the Asian Development Bank (ADB) classifies it as a fragile and conflict-affected situation country.

High rural poverty with increasing food insecurity and child stunting. Timor-Leste is one of the poorest countries in the Asia and Pacific region. In 2014, an estimated 41.8% of the population lived below the national poverty line and 30.7% below the international poverty line. Poverty rates are estimated to have risen by 3% since 2019. One-third of the country's 65 administrative posts have poverty rates greater than 50%, and rural administrative posts tend to be poorer.^{[17]²³} With almost 50% of the country's total cereal consumption needs being met through imports, Timor-Leste is ranked as one of the most food insecure country in the world.^{[18]²⁴} Of the total population, 75% is food insecure, with about 50% of children under 5 years old stunted.^{[19]²⁵} The country's stunting rate of 47.1% among children less than 5 years of age is one of the highest in the world.^{[20]²⁶} High prevalence of food insecurity has been exacerbated by rising global food and fuel prices because of the pandemic and severe floods in 2020 and 2021, and the Russian invasion of Ukraine in 2022.

Rural Livelihood depend on agriculture sector. About 75% of Timorese people live in rural areas. Agriculture sector is the dominant sector for the workforce especially in the rural areas, employing about 78.9% of men and 77.3% of women in rural areas. Most of the rural farmers are subsistence farmers and have limited livelihood and income generating opportunities.

Declining agricultural performance. Major crops produced include beans, coconuts, coffee, maize, peanuts, rice, yams and tubers, and vegetables. Coffee is the country's only significant agricultural export, accounting for more than 95% of non-oil merchandise exports, but is volatile from year to year.^{[21]²⁷} The agriculture sector's contribution to non-oil GDP steadily declined from 32% in 2006 to 17% in 2019.^{[22]²⁸} Key constraints to improving agricultural performance include (i) high exposure and vulnerability to climate and disaster risks; (ii) high dependence on agricultural products with limited inputs and crop diversification; (iii) limited investment in climate-resilient infrastructure, in particular community roads, and water resources management infrastructure; and (iv) low interest from the private sector to participate.

Low adoption of climate-smart agriculture practices. Although some improved cultivars of maize, rice, cassava, sweet potato, and peanuts with high yield performance have been introduced, these are not widely used and need to be augmented with better adapted cultivars and new crops, such as food and fodder legumes and new management practices. Low use of fertilizers, both organic and inorganic, restricts yield potential. Unsustainable land management and agricultural practices have resulted in severe deforestation and degradation, high soil loss, and reduced water flow in local rivers. Limited use of terracing or contour hedgerows has resulted in soil erosion, especially in steeply sloping terrain.

Inadequate investment in rural water resources management has undermined resilience. Localized impacts of climate change are hard to predict, and communities face floods and droughts in successive time periods. Most rural communities suffer from water shortages through the dry season, because of drying up of surface water sources and limited water resources development. This results in acute water shortages in

domestic, livestock, and crop use; increased costs of collection from more distant sources; and loss of earning potential from crop production. Springsheds (spring recharge zones) are poorly managed and unprotected, and in many cases degraded, reducing recharge and water quality. Degradation of watersheds because of long-standing poor land use practices is impacting yields. To adapt to the increasingly uncertain availability of water and to strengthen resilience, it is critical to improve efficiency of water collection and distribution.

Limited institutional capacity for climate-resilient rural development and natural resources

management. Technical and administrative capacity remains a challenge, especially at the municipal and village levels. The government and development partners have recognized the important role of communities in the development process and the need to invest more in strengthening the institutional capacity for the government.^{[23]²⁹} The Ninth Constitutional Government established in 2023 created the new Ministry of Rural Development and Community Housing (MRDCH), and has called for development of basic economic and social infrastructure in rural areas with planning and direct involvement of communities, and improve planning of agricultural activities and management of land and natural resources taking into account the comparative advantages of each region and access to infrastructure and market.^{[24]³⁰}

Inclusive growth opportunities in agriculture hampered by limited private sector involvement. To promote inclusive growth, the country urgently needs to diversify its economy and promote the development of agriculture value chains. Private sector investment in agriculture is needed to generate new jobs and income opportunities, but it has been limited because of lack of integrated, locally based strategies to develop market linkages and value chains. Identified constraints to private sector investment and market development include (i) generally low volume of production in the sector, making it difficult to attract the private sector;^{[25]³¹} (ii) limited access to finance, assets, and extension services; (iii) insufficient and poor-quality market-linking infrastructure; and (iv) unavailable locally based strategies for agricultural market development.

Climate change impacts

Communities in the project locations practice basic agriculture and have limited opportunities to expand their economic opportunities. Climate change will increase temperatures year-round and lead to a higher frequency of heatwave conditions. Climate model projections for seasonal rainfall indicate minimal change to annual rainfall but there is considerable uncertainty therefore both drier and minimal change to rainfall climate futures need to be considered. Rainfall intensity is likely to increase which will affect erosion risk, landslides and potential flooding. In the coastal area water logging and salinity issues will be affected by climate change and storm surge risk will increase. In addition, the year-to-year weather patterns are affected by ENSO cycles and the future frequency of such events is uncertain. As recommended in the SNC 2015 ‘improving capacity of sucos to manage climate risk in key sectors such as agriculture and water sector is a key part of the effort to reduce the vulnerability of the sucos^{[26]³²}.

Climate change represents a major challenge for agricultural production in Timor-Leste as crops are highly affected by changes to rainfall as the majority of crops are rainfed. The country holds high levels of exposure to climate risks and extreme weather events. Agricultural production is highly reliant on climate-sensitive crops with limited crop diversity and the future potential of agricultural production, food security and

livelihood security will be put under increasing stress due to the impacts of climate change. Climate change will influence food production in the country through both direct and indirect effects on crop growth processes.^{[27]³³} Direct effects include changes to rainfall regimes and temperature and the availability of carbon dioxide, and indirect effects include changes to water resource availability, seasonal variability, increased flooding, landslides and soil erosion and changes in pests and diseases.

In the future, available water resources will be subject to increasing stress due to changes to rainfall patterns, seasonal variability, and increasing temperatures alongside factors including population growth resulting in increased demand. While the projections for annual rainfall are inconsistent, a minimal change or decrease is likely. The impact of increasing temperatures and a drier dry season will result in soil moisture deficits and increased evapotranspiration. Many communities in rural areas are highly dependent on seasonal water sources which can run dry during the dry season. Changes to the seasonality of rainfall alongside the impact of higher temperatures can affect the quality and quantity of groundwater resources, and sea level rise will lead to increased salinity of coastal aquifers. Extreme rainfall and flooding and landslides may result in damage to critical infrastructure, agricultural fields and water infrastructure.

Box 1 (modified from Annex I.e.) provides a summary of climate, trends, projections and impacts relevant to the project in Manatuto province.

Existing Climate situation

Hot and humid tropical climate influenced by the Western Pacific monsoon.

Mountainous relief affects rainfall and temperatures (hotter and dryer on coastal fringe, southern slope received more rainfall than northern).

Rainfall is strongly seasonal: wet season December to March; dry season April to November.

Significant inter-annual variability in rainfall, strongly influenced by the El Niño Southern Oscillation (ENSO).

El Niño conditions bring drier conditions and shorter, delayed wet seasons, often causing droughts.

La Niña conditions cause higher rainfall and occasionally intense tropical storms and cyclones

Climate change projections (Scenario SSP5-8.5, reference period 1985–2014)

Increasing average temperature, around 1.3 °C by mid-century and by 2.5°C in late century.

Increasing sea levels, around 25cm increase mid-century and 80cm by 2100.

There is a range of possible future changes in annual and seasonal rainfall, from wetter through to drier, largely determined by how the Asia-Australian Monsoon changes.^{[28]³⁴}

Increasing average rainfall February to May (late wet season, early dry season).

Decreasing average rainfall June–August (dry season).

Clear trend towards increased frequency of intense rainfall events.

Some research indicates that El Niño events may become more frequent and more severe^{[29]³⁵, [30]³⁶}

Agriculture systems

Most agriculture is subsistence and rain-fed, therefore vulnerable to changes in rainfall variability. Changes in seasons and decreasing reliability/predictability are major issues.

Many staple crops (maize, rice) are sensitive to rising temperatures, extreme rainfall, and changes in the seasonality of rainfall.^{[31]³⁷}

In coastal areas, rising sea levels will increase salinization of aquifers and estuaries as well as increased the risk of coastal flooding during storms and extreme high-tide events.

The supply of water (particularly water scarcity during the dry season) is a significant constraint on agricultural Output.

In the many rugged areas, landslides are increasingly common, and cause regular damage to crops and local infrastructure.

Water resources and infrastructure

In the many rugged areas, landslides are increasingly common, and cause regular damage to local water infrastructure. This is a great constraint on development.

Water resources infrastructure (reservoirs and irrigation systems) are few and number and generally small in scale, hence the reliability of supply is vulnerable to changes in rainfall variability.

Many villages rely on underground sources (e.g., wells) for domestic supply, and groundwater availability will be affected by overuse and rainfall variability.

Socio-economic conditions in rural areas

Poverty rate of 22% nationally^{[32]³⁸}

 (fraction of people below \$1.90/day) and about 80% of the population are reliant on the agriculture sector.^{[33]³⁹}

Many rural areas suffer from food insecurity due to a combination of low productivity, high population growth and unpredictable rainfall coupled with extreme weather events.

Climate hazards including droughts, floods, and extreme temperatures potentially will affect agricultural systems, livelihood conditions contributing to food insecurity and loss of productivity.

Box 1: Snapshot of Climate Change Issues for Timor-Leste

The impact of climate change on water resources and agriculture was analyzed through the Climate Risk Assessment report development and is summarized in Table 4 and Table 5 below.

Table 4: Impact of climate change on Water Resources (mid-century 2040–2059, RCP 8.5)

- Warmer temperatures**
- Rivers are short, fast-flowing and intermittent so are very sensitive to increased temperatures and evaporation.
 - Lower DO and reduced water quality from upstream STW effluent.
 - Changes in watershed vegetation may alter the recharge of groundwater aquifers and change the quantity and quality of runoff into surface waters.
 - Increased evaporation in surface sources of water.
 - Increasing biological and chemical degradation of water quality.
 - Changes in watershed vegetation and increased wildfire and pest risks in watershed areas.
 - Changes in watershed agricultural practices and in the resulting pollution loads from agriculture.

	<ul style="list-style-type: none"> • Increased frequency or intensity of drought. • Decreased available water as a result of increased competition for water among water users across the river basin in multiple sectors. • Increased risk of water source development system failure as increased crop water demand and increased water requirement may exceed existing conveyance capacity. • Increased frequency of extreme heat combined with drought conditions will have significant impact at catchment scale.
<p>More frequent and/or intense extreme weather events</p>	<ul style="list-style-type: none"> • Increased flood risk along waterways • Increased rainfall intensity causes increased rates of runoff leading to reduced groundwater recharge. • Increased risk of flash flooding in upland areas. • Increased potential for surface erosion and sedimentation in waterways and dams. • Increased risk of weir and dam failure due to increased inflow to reservoir exceeding spillway capacity • Contamination of water sources from floodwater and animal faeces • Rainfall intensity may increase in the range of 29% relative change compared to the baseline to which is the equivalent of increasing the size of a current 10% AEP event to a 5% AEP event. Medium to high risk as larger seasonal rainfall will combine with increased peak rainfall intensity lead significantly increased flood risk in saturated catchments. • The risk of landslides will increase
<p>Changes in precipitation</p>	<ul style="list-style-type: none"> • Changes in rainfall patterns affecting water sources • Seasonality impacts the water sources. Rivers can have dry/low flows during dry season and flash flooding and high river flows in the wet season • Depletion of groundwater aquifers due to reduce groundwater recharge from intermittent/reduced rainfall • Shallow well systems run dry • Changes in rainfall patterns undermine the viability of critical water supply infrastructure in communities • Localised aquifers located in mountain areas have low potential yields and limited opportunities for development. • Aquifers are susceptible to rainfall changes, responding rapidly (seasonally).
<p>Sea-level rise (SLR)</p>	<ul style="list-style-type: none"> • Assets on the coasts or in floodplains may be at increased risk from flooding, storm damages, and coastal erosion. • Increased exposure to storm surge • Increased salinity of brackish surface water sources. • Increasing seawater intrusion into coastal aquifers. • The median projection for sea level rise in RCP8.5 scenario to 2050 and 2070 is 0.24m and 0.42m. • Risk level depends on land elevation. Lower areas will experience increasing water logging and salinity and greater inundation frequency during storm surge events.

Table 5: Impact of climate change on agriculture (mid-century 2040-2059, RCP 8.5)

<p>Warmer temperatures</p>	<ul style="list-style-type: none"> • Increased crop water demand as a result of more frequent or more intense heat waves and dry spells. • Adverse impact for farm workforce. • Modification in crop suitability and productivity (heat stress). • Increased in weeds, crop pests and disease outbreaks. • Increase risk of wildfire.
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- The quantity and quality of yield critically depend on the number of days that a crop is exposed to temperatures exceeding specific thresholds during critical growth stages (i.e., flowering, pollination, fruiting, or grain filling).
 - Increased yields in colder environments.
 - Reduction in the risk of frosts and subsequent crop failure.
 - Frequency of extreme hot days to increase significantly
 - Significant Maize yield losses at sites where temperatures commonly exceed 30°C (corresponding to areas where the growing season average temperatures = 23°C or maximum temperatures = 28°C).
 - 1°C increase in temperature above critical threshold (>24°C) can result in a 10% reduction in grain yield (rice)
 - PET increase and crop water demand increase
- Changes to rainfall patterns and Increased seasonal rainfall intense precipitation events
- Dependent on direction of change – potentially favorable if precipitation increases in historically water-constrained region
 - Increased crop productivity due to greater seasonal rainfall.
 - Damages to crops and erosion of arable land due to intense rainfall.
 - Increased waterlogging, inability to cultivate lands.
 - Increased pest incidence.
 - Dependent on direction of change – potentially favorable if precipitation increases in historically water-constrained region
 - Rainfall intensity may increase in the range of 29% relative change compared to the baseline to which is the equivalent of increasing the size of a current 10% AEP event to between a 5% AEP event. Medium to high risk as larger seasonal rainfall will combine with increased peak rainfall intensity lead significantly increased flood risk in saturated catchments.
 - The risk of landslides will increase
- Increases in drought conditions
- Increased water withdrawal as a result of the increased water loss at the farmland and increased crop demand due to increased evaporation.
 - Lower yields from crop damage, stress, and/or failure.
 - Loss of arable land as a result of land degradation and wind erosion.
 - Increased risk of wildfires.
 - Increased competition for water
- More frequent strong tropical storms and typhoons
- Damage to crops and rural infrastructure.
 - Damage to roads and bridges affect access to markets.
 - Higher probability of larger more intense typhoons and storms. Medium to high risk to crops, particularly tree crops. Loss of rural infrastructure, roads, and bridges will impact on the rural economy and ability to recover after storm events.
- Sea level rise and storm surge
- Damage to crops and rural infrastructure due to flooding.
 - Seawater intrusion, loss of arable land, salinization of water supply (groundwater in particular).
 - The median projection for sea level rise in RCP8.5 scenario to 2050 and 2070 is 0.24m and 0.42m. Risk level depends on land elevation. Lower areas will experience increasing water logging and salinity and greater inundation frequency during storm surge events.
- Increase in CO₂ concentration
- Increased biomass production and increased physiological efficiency of water use in crops and weeds.
 - Increased efficiency of water use by crops.
 - Potential increased weed competition with crops.
 - Possibly some marginal benefits to productivity, but it depends on whether water availability becomes the limiting factor on plant growth.

Theory of Change

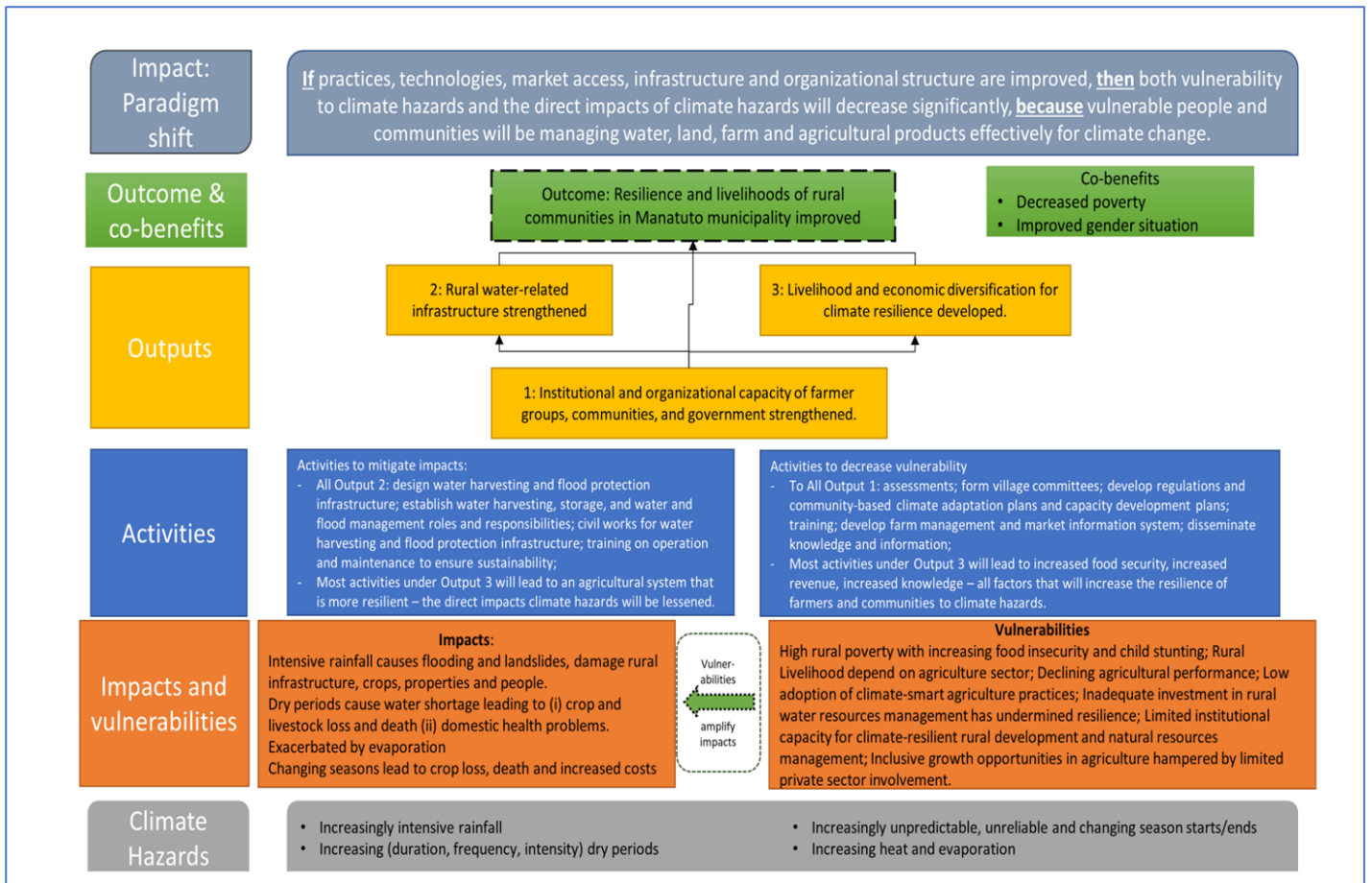
The *current* situation is that climate hazards are having increasingly negative impacts on lives and livelihoods. This is in part due to the high vulnerability levels of the concerned communities. Due to this high vulnerability:

- The impacts of climate hazards are significant, i.e.: heavy rain leads to floods and landslides leading to damage to water supply systems, agricultural infrastructure and crop loss; changes in the start dates and duration of seasons, and variable intensity of dry/wet periods, is creating many problems for farmers; and low rainfall leads to water shortage leads to crop and livestock productivity loss, etc;
- The highly vulnerable communities are not able to adapt or resist to impacts. They lack the knowledge, the technologies, the financial buffer and the access to alternative livelihoods. Hence, they lose crops, possessions, revenue and their health declines. This accelerates a downward spiral, precludes human development.

The *changed* situation, due to this project intervention, will see significantly decreased vulnerability of the target, vulnerable communities. As a result of project interventions:

- The worst impacts of climate hazards will be mitigated, i.e. heavy rainfall still occurs, but causes significantly less flood damage or landslides due to investments in watersheds, infrastructure and improved water management; impacts from unpredictability in rainy season will be mitigated by increased knowledge, skills and options; and low rain periods still occur but lead to less water shortage due to investments in water infrastructure and improved management; and fewer crops are lost due to improved species and improved practices and technologies.
- The most vulnerable individuals and communities have increased resilience and can resist. The improved organizational capacity, increased revenue, increased food production, improved water supply will all lead to improved health, time savings and improved livelihoods. The vulnerable will develop the skills, tools and resources to resist and adapt, stopping the ‘downward spiral’.

This theory of change is visualized as follows:



Project strategy, activities and outputs

The Project Strategy is to support a process of participatory assessments, participatory planning, identification of activities (or ‘sub-projects’), participatory sub-project design and participatory implementation of sub-projects.

The steps of this process are introduced in the following paragraphs. They are described in full details, including each individual sub-step, all responsibilities and criteria, in Annex I. This process has been designed based on a set of comprehensive assessments, multi-level consultations, and after undertaking the safeguarding process. It has also been developed in close consultation with development partners in order to learn lessons from previous similar exercises. As a part of the project, the activities (or sub-projects) are to be implemented through an a series of intensely consultative, organic and iterative steps.

However, in order to demonstrate this approach, and develop the necessary capacity for implementation, ‘model’ sub-projects have been developed and designed for two representative sucos (Fatuwaque and Soibada). For water activities, the model design includes full details of parameters, specifications and estimated costs. For agricultural/livelihood projects, this includes full details of current challenges, alternatives for moving forward, approach to building resilience, capacity development and developing livelihoods.

The project will provide ongoing technical support throughout this participatory process. This technical support will be *with and through* local technical agencies (governmental and non-governmental). The whole process is designed to lead to capacity development at farmer, community and local government level – a sort of ‘capacity development by doing’.

The principal planning unit is the Suco (village). During project implementation, the planning process and consultation will lead to the identification of a package of ‘sub-projects’ and other activities in each of the 30 rural sucos in Manatuto. However, where appropriate or necessary, the planning unit may be extended to groups of Aldeas (hamlets) within a village or groups of villages for water source and infrastructure development and cooperation on watershed conservation activities.

As described above, the planning process will identify priority subprojects and other activities to be supported **during Project implementation**. Therefore, details cannot be provided at this stage. However, a preliminary planning process was undertaken at two sample sites – in order to test and develop the methodology, to identify representative problematics, and to scope out typical project activities and adaptation strategies. The two sites were Soibada and Natarabora – two very different sites from a climatological, socio-economic and agricultural perspective. Annexes I.c and I.d. provide full details of the results from this process at the two sucos, including cost estimates for many typical inputs/activities.

This planning process includes:

- (i) Community consultations. This is initiated with informing and awareness raising and carries through to information collection, discussion and determination of key pathways;
- (ii) Municipal-level assessment of climate, water, land use and market, etc;

- (iii) Site/suco surveys and assessments; (in conjunction with community consultation) of water sources, water infrastructure, hazard areas (flood and landslide) and proposed demand areas (drinking water and irrigation).
- (iv) Preparation of the village (Suco) Level Landscape Management Plan (LLMP);
- (v) Preparation of the Community subproject plan (CSP) including assessment of water demand, sources and infrastructure, activities design, preparation of bill of quantities and implementation schedule, and site map(s).
- (vi) Community Endorsement.

In order to ensure a strong focus on climate change adaptation, the selection criteria will include (i) validation that the more vulnerable communities and/or the more vulnerable sections of the community are targeted and (ii) validation that the project activities respond directly to established and growing climate threats.

Outcomes and Outputs and Activities

The Project objective is “***the resilience and livelihoods of rural communities in Manatuto municipality improved***”. This objective is to be delivered through three Outcomes. Outcome 1 (Institutional and organizational capacity of farmer groups, communities, and government strengthened) will increase adaptive capacity in the most vulnerable communities, specifically to capacity to adapt to the growing climate challenges. Outcome 1 provides a basis for the following outcomes. Outcome 2 (Rural water-related infrastructure strengthened) will ensure that the most vulnerable communities have resilient water supply through the increasing climate challenges, for use in agriculture, livestock raising and in households. Outcome 3 (Livelihood and economic diversification for climate resilience developed) will develop agricultural practices and technologies that are climate smart. It will also develop the value chain, thereby increasing the adaptive capacity of the most vulnerable groups.

More details of these Outcomes are provided in the following.

Outcome 1: Institutional and organizational capacity of farmer groups, communities, and government strengthened. The project will support a cohesive, multiyear, localized climate- and disaster-resilient assessment and planning approach. Transformational measures to apply landscape management planning approaches in target municipalities include (i) development and adoption of village natural resource management regulations and climate adaptation plans; (ii) enhancement of village leaders’ capacity, at least 30% of whom will be women, for adaptive management of farms and natural resources; and (iii) improvement of access to adaptive farm management and geospatial information to enhance local stakeholders’ capacity for sustainable climate- and disaster-resilient farm and landscape management. Building community resilience will require the development of collaborative structures and arrangements between communities and the government, supported by capacity building focusing on climate-smart agriculture, agroforestry, and catchment restoration and protection to improve natural resource management.

This Outcome is primarily the participatory planning process described above. Technical support to it will develop capacity all-round. This planning process includes the municipal-level assessment of climate, water,

land use and market, followed by the preparation of the village LLMP and CSP. The CSP identifies key climate adaptation infrastructure needs. LLMP also identifies the requirements for improving agricultural production and livelihoods – e.g. improvements to farming systems and market linkages.

This process has already been initiated at two sample sites/sucos – Soibada in the wet highlands and Natarbora in the southern lowlands. This has led to sample sub-projects for water infrastructure and a generated list of potential activities to strengthen farming and agricultural livelihoods.

Outputs include:

- 1.1 Baseline village climate and disaster vulnerability assessments completed.
- 1.2 Suco development committees formed at the village level and operationalized
- 1.3 Village landscape management regulations and community-based climate adaptation plans.
- 1.4 Completed capacity development plans.
- 1.5 Farmer groups, suco development committees, and government staff trained and capacity developed.
- 1.6 Climate adaptive farm management and market information system.
- 1.7 Knowledge and information generated through farm management and market information system disseminated, this will include notably all knowledge and information related to gender mainstreaming, empowering women and succeeding from a gender perspective.

Outcome 2: Rural water-related infrastructure strengthened. The project will increase water security of target communities. It will improve the supply of year-round water for domestic and other uses and protect people, infrastructure, property, and livelihoods from frequent flooding and landslides by constructing or upgrading at least 30 infrastructures.^{[34]⁴⁰} Local flood protection and erosion control structures will be planned and implemented through participatory landscape planning. The project will increase the leadership roles of women and men in community-based resilient infrastructure planning, design, construction, and operation and maintenance (O&M). It will provide technical support to ensure that infrastructures are technically, financially, and socially and environmentally feasible, and can be easily operated and maintained by communities.

Output 2 builds on the overall project planning process described above. Under Output 2, in each Suco in Manatuto Municipality, under the CSP, sub-projects will be designed and implemented that improve water supplies and reduce the impacts of floods and landslides and design approach for the selection of activities in preparation of the subproject design.

Figure 4 illustrates the ‘typical’ community water source and system. It is an integrated system: water is collected, stored and distributed for agricultural use, for livestock, for home-gardens as well as for domestic use. The system includes spring (but may also be from well or bore or stream), transmission pipeline, storage tank and distribution network, and community tapstands. It also includes irrigation of household gardens

and/or adjacent irrigated lands. In the case of the project, it may also include areas and infrastructure prone to flooding and/or landslides.

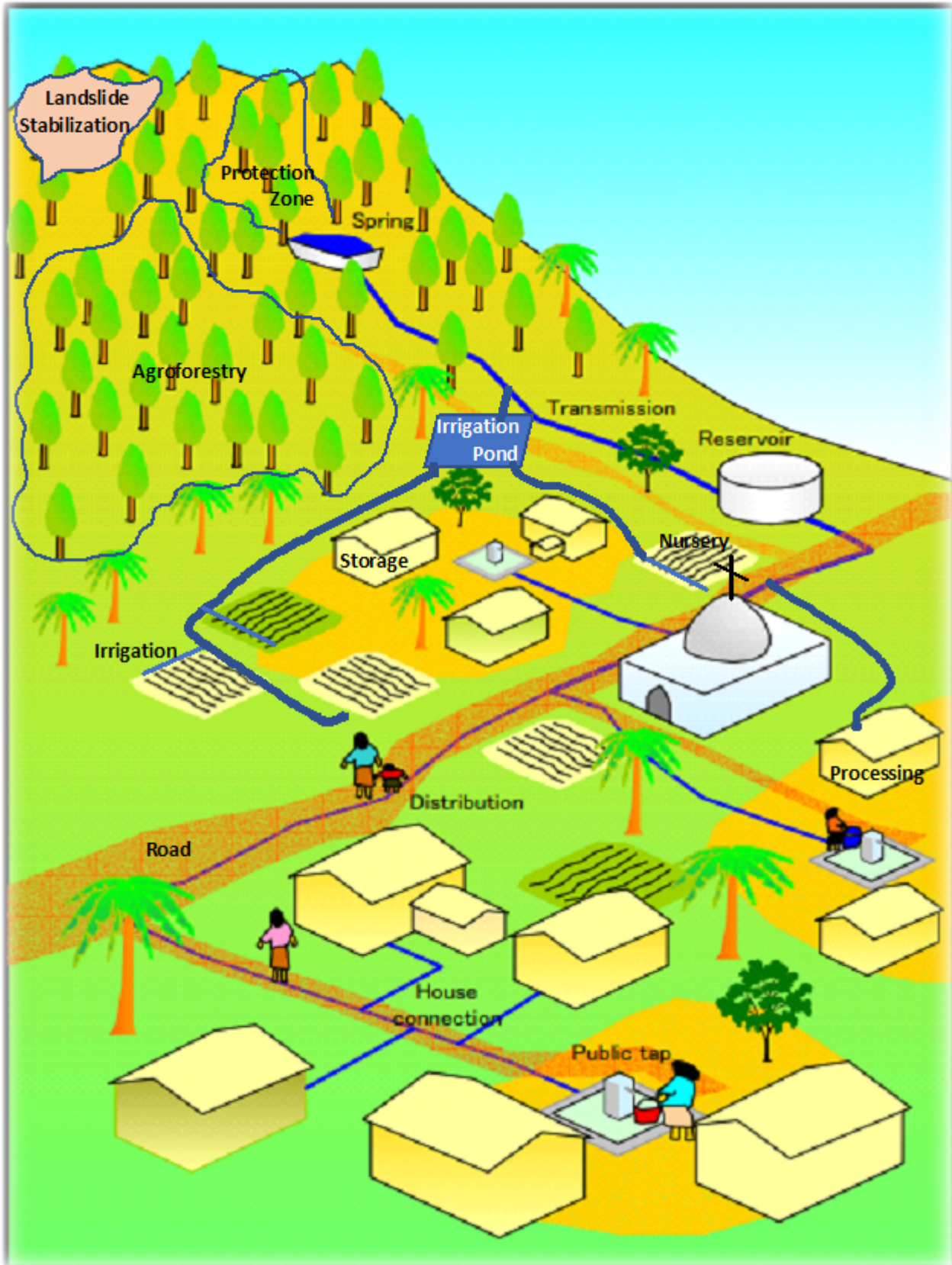


Figure 5: Typical community water system

As seen in above sections, these village integrated systems are under intense pressure from climate change. Many systems are increasingly damaged by landslides. Water shortages are leading to health and agricultural challenges. Irrigation systems are ceasing to be reliable.

Activities under Output 2 are to increase water security and reduce the risk of natural hazards in the beneficiary communities. Water security will be achieved through investment in infrastructure and nature-based activities for water source development (harvesting), transfer, storage, and distribution of water to increase and sustain water supply and reduce water losses in collection and conveyance. The key indicators being implementation of activities (number of systems constructed), increase in dry season water availability and reduced time for water collection during the dry season (particularly by women and children). The impact of flooding and landslides on village infrastructure, water sources and lands will be reduced through investment in infrastructure and nature-based activities. The key indicators being the number of activities implemented and quantity and areas of infrastructure and land protected.

After the participatory planning and capacity development process, the following types of infrastructure may be provided under Output 2:

- Water Source Development, that is the development of existing and/or new water sources including springs, groundwater (wells and boreholes), surface (streams and rivers) and rainwater harvesting (tanks) to improve and sustain dry season water supplies to meet domestic, livestock and irrigation requirements.
- Water and Flood Infrastructure, that is civil works activities for transfer, storage, and distribution of water for drinking and irrigation requirements, and flood protection structures. Watershed Conservation, that is works and activities for the protection of water sources, principally springs, and landslide stabilization.

As described above, priority subprojects will be identified and developed through the planning process during Project implementation. A preliminary planning process was undertaken at two sites - Soibada and Natarabora - in order to better understand local challenges and to scope out typical project activities. Full details of the water challenges and potential solutions, notably with initial designs for Soibada and Natarabora, are provide in annexes I.c.

Outputs are to include:

2.1 In project areas of high rainwater runoff, water harvesting and flood protection infrastructure designed.

2.2 Water harvesting, storage, and water and flood management roles and responsibilities established.

2.3 Civil works for water harvesting and flood protection infrastructure.

2.4 Local stakeholders and water managers trained on operation and maintenance to ensure subproject sustainability

1. Outcome 3: Livelihood and economic diversification for climate resilience developed. Current agricultural livelihood systems are not resilient. Agricultural practices in particular face many constraints (See Box 2); Under this Outcome, the project will support and establish climate-resilient farming systems and

adaptation measures in the Sucos of Manatuto. Proposed solutions will be based on the local context of climate and disaster risks; farming practices; consideration for gender-based stereotypes affecting decision-making by male and female farmers; and potential market opportunities to improve livelihoods and strengthen resilience of rural communities, especially for the poor and female farmers. Based on the prioritization of activities by the villagers, the project will (i) apply innovative agroforestry techniques to increase vegetative cover, water savings, and productivity of land (see Box 2); (ii) diversify farming systems through the integration of climate-resilient crops and agricultural practices that are better adapted to impacts of climate change; and (iii) enhance performance of value chains for agricultural products by supporting market development and linkage.^{[35]⁴¹} The project will provide technical support to guide the planning exercise and train villagers in the implementation of their priority activities.

Current Agricultural Constraints and Climate resilient agriculture – Example from low altitudes)

Constraints

The farming systems have some common constraints (across all climate zones) including:

- The average family “farm” is around 1.35 hectares in size and used semi-intensively.
- Fire is used for land clearing (slash and burn).
- Water is from seasonal rains, with planting occurring just before the monsoon season(s).
- Soil types vary but are all generally low fertility clays. Organic topsoil is less than 30 cm.
- Planting: broadcast seeding of small grain such as rice, sorghum, millet; individual seeding of maize, tubers, beans. Seeds are generally of original varieties unless government provides new varieties (for free). Seed stock is generally from farmer carry over, and GMO seed is generally being used only on a pilot basis under international grant projects.
- Crop rotation is commonly practiced on a seasonal and annual basis, and with some intercropping. Numerous technical assistance projects are developing and promoting various intercropping and integrated agroforestry systems (maize with velvet bean being the most prevalent).

- Labor is manual and scarce and with minimal mechanization. Some hand tractors and implements are available for rent (primarily for wetland rice) but are generally considered too expensive. Some farmers have portable power weed cutters. Most labor is provided by family members or in cooperation with other villagers.
- Minimal chemical/inorganic fertilizer is used (ex: NPK). The primary reason is cost.
- Minimal chemical pest control is used (ex: herbicide, insecticide, fungicide, nematocide) although there appears to be an increasing use of herbicide (primarily glyphosate or “Roundup”) for weed control and land clearing. Some mainstream international projects are actively encouraging the use of it.
- Livestock is maintained (“tended”) on communal lands, is confined or tethered in some cases, but is also often allowed to roam freely, posing a threat to crops, erodible soils, and water ways.
- Fencing for livestock is primarily in the form of “live” barriers of legume shrubs, spikey yucca, cactus, and other fast-growing durable plants.
- Standard soil conservation methods such terraces, swales, contour planting, grass bunds, and water canals are not commonly implemented by smallholders in Timor-Leste although some internationally funded projects have attempted to teach and facilitate them in the past and present (e.g. JICA, GIZ, Permatil).

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Way forward with the RRLIP project

Based on the detailed assessment of livelihoods and potential for economic diversification and enhanced climate resilient (see Annex I d), model approaches to farming and agriculture were developed for each of the three climatic zones in Manatuto. These contain details of crops and practices that are considered suitable to the project sites and to the anticipated climate risks.

For example, in low altitude areas in Manatuto, these can be summarized as follows:

I) Potential crops and livestock (already present but can be improved and increased)

Annuals

- Vegetables: Dietary and economic diversification.
- Sorghum and Millet: Alternative grains. Drought tolerant. Culturally appropriate
- Mung beans: Dietary and economic diversification. Culturally appropriate
- Vanilla: High value crop with minimal area requirements
- Pepper: Cash crop

Perennials and Tree Crops

- Bamboo: Soil conservation, wood replacement, supply to factory
- Palm trees (coconut, sugar, sago, betelnut): Native to the ecosystem, resilient to climate.
- Fodder trees: Protection for soils and slopes, live fences, improved livestock management.
- Fuelwood lots: Protection for soils and slopes, saleable and sustainable commodity.
- Fruit trees: Riparian area protection, dietary and economic diversification.
- Sandalwood, Teak, Mahogany, Gemelina, Rosewood: Economic diversification
- Cashew trees: Dietary and economic diversification. Soil conservation. Microclimate
- Candlenut: Dietary and economic diversification. Soil conservation. Microclimate
- Tamarind: Dietary and economic diversification. Soil conservation. Microclimate

Livestock

- Aquaculture (primarily fish but possibly freshwater shrimp or mussels)

- Honeybees

II) Agroforestry Interventions

- Nurseries for tree seedling production: crop diversification and NRM
- Community fodder banks and dry season storage for livestock, plus controlled stall feeding: improve quantity, quality and predictability of animal feed. Increase weights and health of animals making them more profitable. Reduce grazing pressure on the landscape (soil-water conservation, habitat protection, exotic weed management).
- “Live” fences and wind breaks with legume trees/shrubs: Livestock management
- Fruit trees, fuelwood trees, timber trees planted on areas where soil and water require protection: Crop and product diversification while providing NRC
- Bamboo plots established for materials and soil protection
- Improvement of coconut palm, areca palm, and sago palm stand management where appropriate (much of this area was originally a palm ecosystem): Improved production and income diversification on otherwise marginal lands.

III) Climate Resilient Agriculture Interventions and the Changes in Patterns

- Reduced burning of land and crop residues: will increase organic material and biota diversity in the soil, which will result in higher fertility and better moisture absorption and retention.
- Reduced ploughing and intense tilling of land: same as above
- Seed selection and storage improvement: use cultivars that are proven to have higher production features and or relevant climate tolerance
- Maize and tubers intercropped with velvet bean or other legumes for green manure mulch: scalable method of providing natural fertilizer while also ground cover/protection
- Alley cropping with nitrogen fixing trees and fruit trees: natural fertilizer, soil protection, diversification (animal fodder, human food, etc)
- Better planned crop rotation to encourage nutrient conservation and cycling, pest and disease control: conserve soil, improve yields, reduce costs

- Animal manure, crop residue, and natural fertilizers applied: conserve soil, improve yields, reduce costs
- Soil management engineering (contour planting, swales or terraces on sloping topography)
- Water catchment engineering and management: Improved plant health and production stability
- Non-chemical (cultural and organic) pest control: Human health, environmental health, cost reduction
- Small scale vegetable gardens: Nutritional and economic diversification

Box 2: Summary of potential innovative and alternative agricultural techniques and practices

Interventions to support an increase in agricultural production are key to improving food security and resilience, including by the creation of economic opportunities through the sale of marketable produce. The first step to achieving these objectives is increasing agricultural production volumes, including productivity gains through the adoption of new technology and practises with a focus on ensuring resilience in the face of climate change. Hence, while the growing of annual staple crops is obviously key to food security, cash crops—tree crops in particular—provide additional economic opportunities. Both are included in integrated agroforestry systems.

To improve farm gate prices for surplus produce, access to markets is key. Private sector off-takers (and other value chain actors) are present in Manatuto and provide a valuable function, but their reach is limited, largely due to the lack of aggregated quality agricultural marketable surplus, which acts as a disincentive to investment.[\[36\]](#)⁴²

Overall, investment is needed to:

- (i) Increase production to have marketable surplus of quality products through improved access to water (outcome 2), and agriculture/agro-forestry production improvements (noting that nurseries may require water supply improvements under outcome 2), coupled with quality improvements post-harvest.
- (ii) Increase the ability of farmers to aggregate produce (and aggregate purchase of inputs) through collective action (e.g., storage facilities) which will also improve buying and selling power, and allow group investments to be made into shared transport to markets and common facilities (e.g., processing to add-value).
- (iii) Decrease the cost (fuel, vehicle maintenance and time) to transport produce to market/aggregation (collection) points through upgrades to rural access roads. In some cases, roads are in such poor quality that transporting produce by truck is simply not possible and so providing road access will provide an incentive for farmers to invest in increased production.

All of the above have been identified by farmers during community consultations as priorities for investment.

Outcome 3 builds on the overall project planning process described above. [\[AA3\]](#) As with Outcome 2, the actual interventions are to be developed in a participatory manner during project implementation and cannot be defined at this stage.

See Annex I.d. for a full assessment of agriculture and the rural economy in Timor-Leste, with a particular focus on Manatuto. Annex I.d. provides an analysis of agroforestry, agricultural marketing across Manatuto, the role and opportunities for private sector, and the situation regarding rural access roads. It also provides business models for linkages between farmers/farmer groups and private sector off-takers. Annex I.d. identifies how climate presents challenges to agricultural development, and identifies sets of activities and measures and crops etc to adapt and increase resilience. These sets of activities etc. are provided for each agro-climatic zone in Manatuto.

Outputs include:

- 3.1 Market and supply studies in targeted municipalities (including identification of private sector partners and local service providers for training, financial services, and extension services) undertaken.
- 3.2 A crop suitability map and a cropping calendar developed.
- 3.3 Village-level activities to enhance diversified farming systems and market linkages identified through participatory processes.
- 3.4 Farmers and farmer groups trained to implement identified activities (from 3.3).
- 3.5 Activities identified in 3.3 implemented.3.1

Sustainability

Sustainability has to be achieved at several levels. At the national level in order to ensure that national agencies can continue to provide the necessary technical and policy support. At the local government (Municipality, suco) level, so they continue to provide necessary technical and administrative support. And, in particular, at the village/community/farmer level, so that they are enabled to maintain the functioning of water supply and agricultural systems, and continue to develop.

At the national level, it is noted that there are no significant post-implementation recurrent costs to be covered by the government. Further, the Ministry of Rural Development and Community Housing has demonstrated its commitment to this initiative by (i) contributing \$1 million of in-kind support to the project and (ii) engaging in the process to deliver the follow-up, next Phase intervention across other Municipalities (likely by taking on a loan). The existence of this follow-up loan is a major factor in ensuring the sustainability of the project outputs.

At the level of local governments, notably Municipality and suco, the Project can be considered a major capacity development exercise. All activities will be identified, developed and implemented with the support of experts (national and international) in close collaboration with local officials and experts. This will include the involvement of local and national civil society organizations. This process, over the 5 years of the project, is expected to greatly develop the skills and competencies of local governments, skills they can continue to

apply in the future. As at the national level, there are no significant post-implementation recurrent costs to be covered by local governments. The success of the project, hopefully in the majority of suco, will lead to improved livelihoods and conditions – and this should be sufficient to provide incentives to sustain project activities.

At the village/community/farmer level, sustainability needs to be ensured for both water sector and agriculture/livelihoods. The planning processes, designed to empower local communities, are a key strategy in ensuring sustainability.

- For water, this will build upon existing community-based systems of cost recovery and sharing of maintenance obligations. Where possible, a focus will be the existing Water Management Groups (GMF). These have the people and the mandate to manage water supply, transport and distribution at the village level. In connection with the GMFs, stakeholders in all villages will be trained in O&M of the water supply and flood protection schemes. It is further noted that previous financial and economic analysis of the sample water harvesting subprojects revealed a positive operating expense ratio, indicating that sufficient funds will be available for O&M, and hence financial sustainability. The training on climate-resilient design and operations will increase sustainability.
- For agriculture, the main strategy is to focus on increasing production, access to markets, and thereby generating additional revenue for individual households. This will be a key factor in developing an incentive for farmers to sustain the activities. In complement to that, significant training on the development and maintenance of the agroforestry systems is to be provided.

Adaptation Benefits

The project is aligned with the following impact: climate and disaster resilience, food security, and economic opportunities of Timorese people improved, in line with the Government's Economic Recovery Plan (2020). The project will have the following outcome: resilience and livelihoods of rural communities improved. All the rural people in Timor-Leste's Manututo Municipality engaged in agricultural activities are expected to benefit, i.e an estimated 37,127 people, of which approximately 50% or 18,500 are women.

In addition to adaptation to climate change, the project will generate other significant direct benefits for the targeted population. The principal benefits foreseen include under output 2 include the economic savings and opportunities from averted burden of disease (diarrhea, malnutrition, and enteropathy); educational benefits from higher school enrollment and attendance rates; saved travel and waiting time for water collection; improved economic opportunities from diversified farming systems both in irrigation and livestock production; and increased climate resilience and avoided damages from extreme weather events such as floods. Benefits from output 3 result from improved agronomic practices such as weed control, erosion reduction, supplement soil nutrients, improved soil structure, and conserved soil moisture. This will lead to increased household income, nutrition, and food security; increased crop yields and quality; and improved resilience to highly variable weather conditions resulting from climate change.

Gender Equality and Women's Empowerment

A gender assessment and gender action plan (GAP) have been prepared during project preparation. A summary of the assessment and the GAP are provided in Annex K.

The gender assessment included focus groups at the community level. The key issues identified included the fact that women wanted training and skills development in the following nine areas, listed in order of importance: (i) food processing, (ii) horticulture techniques, (iii) financial management, (iv) gender equality, (v) animal husbandry, (vi) sewing, (vii) machine training, (viii) pest prevention measures, and (ix) keeping animals safe from disease. The two most important project outcomes requested by women during the focus groups were (i) clean potable water and (ii) increased household income.

In addition, interviews were conducted with male and female agriculture extension workers along with a needs assessment, which revealed that overall, there was limited career advancement for women and little training for community agricultural activities. However, there was no evidence of harassment of female employees.

The GAP provides for specific activities under the three project outputs to promote gender equality and women's empowerment. Targets have been set for women's participation in farm groups and livelihood activities. Each of the three outputs has a series of gender activities that will promote gender equality. Targets for the design and monitoring framework have been discussed with CSOs, donors, and the government to confirm that they are realistic.

Notably, the project will support women by promoting their meaningful participation and building their capacity to invest sustainably in climate- and disaster-resilient infrastructure and livelihoods. A gender action plan includes measures aimed at decreasing gender gaps and empowering women, such as (i) engaging women in design and O&M activities, (ii) developing a gender-sensitive climate adaptation farm management geospatial information system in the project areas, (iii) increasing women farmers' knowledge of climate-resilient farm and landscape management, and (iv) improving women's access to markets.

As a result of the above, the project is categorized as *effective gender mainstreaming* (EGM). This is the second most effective gender categorization in ADB policy. This means that although the project outcome does not explicitly address gender equality or women's empowerment, the project

outputs contribute to addressing gender equality and/or women's empowerment by narrowing gender disparities. As it is categorized EGM, a series of requirements are placed on the project. In addition to the need for an assessment, a GAP, and several gender oriented indicators, these requirements include the need for a Gender and Social Dimensions Section of the Project administration manual (PAM); and a dedicated covenant in the loan/grant agreement is included to support implementation of the GAP.

The GAP is monitored through the Gender Action Plan Monitoring Table, which is completed and reviewed by ADB at least annually. This reviews progress and issues and challenges for each action in the GAP. In addition, the PIRs, the mid-term review and the Terminal evaluation will all include review and reporting of the GAP and relevant gender dimensions of the project.

Private Sector

The assessments undertaken during project development (see Annex I d), with the participation of local communities, identified four sets of key constraints to improving agricultural performance and therefore accelerating rural development. The fourth constraint was “*low interest from the private sector to participate.*” It identified that Timor-Leste urgently needs to diversify its economy and promote the development of agriculture value chains in order to promote inclusive growth. Private sector investment is required for this, in particular to generate new jobs and income opportunities. In the past, such investment has been limited because of lack of integrated, locally based strategies to develop market linkages and value chains. The constraints to private sector investment and market development identified through the assessments included (i) generally low volume of production in the sector, making it difficult to attract the private sector;^[37] (ii) limited access to finance, assets, and extension services; (iii) insufficient and poor-quality market-linking infrastructure; and (iv) unavailable locally based strategies for agricultural market development.

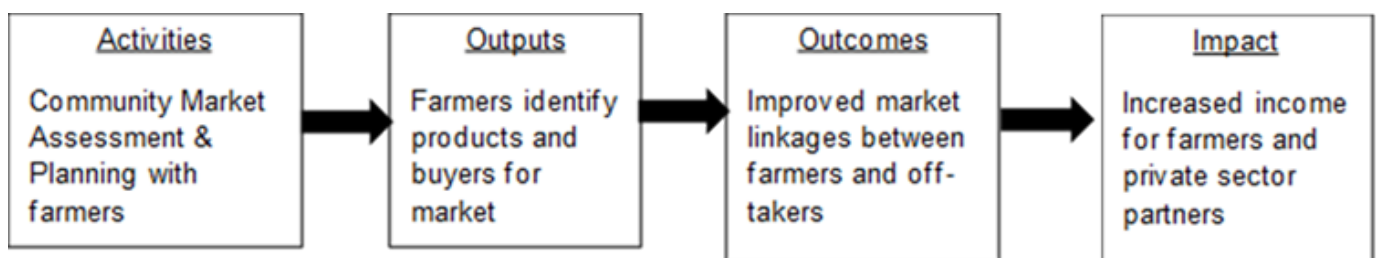
The assessments concluded that the system is one of shallow value chains with few actors. The majority of farmers consume most of the food crops they produce. Increasing agricultural production on a per holding basis is constrained by the ability to cultivate more land. Without the use of farm machinery or better technology agriculture productivity remains very low compared to other countries in the Region.

An assessment of value chain stakeholders found that there are farm input suppliers in Timor-Leste but as farmers only use inputs for crops such as rice and vegetables, demand is small and they are unable to import at wholesale rates, resulting in the inputs being expensive when compared to neighboring countries.

Likewise, there are several types of off-takers, with exporters and processors offering the most potential for establishing market linkages with farmers. The gap between producing enough agricultural produce for household food security purposes and producing the surplus volumes required for export is huge. Several private sector companies have an interest in establishing/expanding market linkages with smallholder farmers in a sustainable and climate smart way.

These companies buy produce from smallholder farmers and in addition to providing market access, some companies provide embedded services such as inputs, technical support and transport.

The project strategy is to support the communities in engaging in improved farming and value addition so as to promote more private sector engagement. The project does not intend to directly support private enterprises. The project has developed the following theory of change for developing the private sector and market system in Timor-Leste, including in Manatuto.



Specifically, through Output 3 (Livelihood and Economic Diversification for Enhanced Climate Resilience) and as identified through the community consultations, the required investments are needed to:

- **Increase production to have marketable surplus of quality products through improved access to water (output 1), and agriculture/agro-forestry production improvements (noting that nurseries may require water supply improvements under output 1), coupled with quality improvements post-harvest.**
- **Increase the ability of farmers to aggregate produce (and aggregate purchase of inputs) through collective action (e.g., storage facilities) which will also improve buying and selling power, and allow group investments to be made into shared transport to markets 2F2F^[39] and common facilities (e.g., processing to add-value) 3F3F.^[39]**
- **Decrease the cost (fuel, vehicle maintenance and time) to transport produce to market/aggregation (collection) points through upgrades to rural access roads. In some cases, roads are in such poor quality that transporting produce by truck is simply not possible.**

As described above, the sub-projects will be designed to address challenges and opportunities in each suco. A combination of the following programs is expected in each suco.

- **Develop more productive and more resilient agricultural practices;**
- **Diversify agricultural and livelihood activities;**
- **Enhance market development through private sector activities and market linkages.**

Hence the project focusses on developing the private sector framework and operations related to agriculture in rural areas of Timor-Leste, in particular for family enterprises and small-holders. This will lead to improved market conditions, improved access, increased revenue and improved livelihoods, etc. This will also connect small-holders into the market, and either directly or indirectly to larger market and private sector players (i.e. ultimately large scale national level buyers and exporters).

See Annex Id for details.

The project will closely work with ADB's Private Sector Operations Department to explore synergies. This may include determining ways to

facilitate the connection of small-holders to large-scale actors in the private sector.

Knowledge Management

ADB's Knowledge Management Action Plan (KMAP), 2021-2025^[40] aims to improve how knowledge is managed across all ADB's business processes. It emphasizes increasing collaboration, improving the quality and efficiency of knowledge services, making knowledge work more attractive, and using a country-focused approach to benefit DMCs. It has 3 outputs and 10 key actions. The most pertinent of these actions to the RRLIP in Timor-Leste are: Recruit, develop, foster, and incentivize staff members who have the needed knowledge management competencies; strengthen country knowledge programming; create a connected enterprise knowledge network; strengthen and clarify measures to guide teams in developing quality knowledge products; and strengthen the resident missions' role in advancing relationships.

In Timor-Leste, the Timor-Leste Country Knowledge Plan (CKP) 2023–2027 is an integral component of the country partnership strategy (CPS). The CKP focusses on knowledge management in order to increase effectiveness and impact in Timor-Leste. The CKP focuses on the provision of knowledge products directly supporting the preparation of pipeline projects, delivery of projects, and capacity and skills development. Further knowledge work will include sector studies, project scoping assessments, technical studies, and tool kits. It supports the implementation of targeted knowledge products through sector and thematic analyses and capacity development activities. It has two pillars that will contribute to the achievement of the following knowledge results: (i) improved access to long-term fiscal and environmentally sustainable infrastructure and services and strengthened infrastructure management through support for sector policies and capacities; and (ii) improved knowledge and capacity to develop human capital and a viable private sector and intensify Timor-Leste's regional integration efforts.

Under RRLIP, knowledge management will be guided by GEF's Knowledge Management Approach Paper ^[41]. It will notably be carried out in conjunction with the project's Stakeholder Engagement Plan and Gender Action Plan (Annex K and Annex L). Knowledge management is central to the RRLIP project and is mainstreamed throughout most of the project activities. Details of how knowledge management will be

generated through all project activities is provided in Annex J.

The approach to Monitoring and Evaluation is presented in Annex M.

[1] Figures based on 2022 census, released in 2023.

[2] DGS (2019b) *Manatuto em Numeros*, Ministerio das Finanças

[3] <https://manatuto.gov.tl/en/>

[4] DGS (2014) *Poverty in Timor-Leste*, Ministerio das Finanças

[5] Timor-Leste Poverty Gender-Sensitive Poverty Mapping for Timor-Leste Policy Note . May 2019
<https://documents1.worldbank.org/curated/en/143891560928616596/pdf/Gender-Sensitive-Poverty-Mapping-for-Timor-Leste-Policy-Note.pdf>

[6] IPC 2018 The First Ipc Analysis Report Onthe Chronic Food Insecurity Situation In Timor-Leste Evidence and Standards for Better Food Security and Nutrition Decisions 17th of January, 2019 and published by National Directorate of Food Security and Cooperation, the Ministry of Agriculture and Fisheries in collaboration with Country IPC Partners.

[7] DGS (2020) *Timor-Leste Agricultural Census*, Ministerio das Finanças

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[9] Timor-Leste 2020 Second National Communication
<https://unfccc.int/sites/default/files/resource/Second%20National%20Communication%2C%20Timor-Leste.pdf>

[10] Green Climate Fund (GCF) p7

[11] <https://www.geo-down-under.org.au/timor-leste-flood-disaster/>

[12] CEDMHA (2016) Timor-Leste Disaster Management Reference Handbook. Center for Excellence in Disaster Management & Humanitarian Assistance. Available at: <https://reliefweb.int/sites/reliefweb.int/files/resources/disaster-mgmt-ref-hdbk-TimorLeste.pdf> (Accessed: 19 January 2021).

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- [16] CSIRO and SPREP (2021). 'NextGen' Projections for the Western Tropical Pacific: Current and Future Climate for Timor-Leste.
- [17] R. Purnamasari et al. 2020. [Estimating Small Area Poverty and Welfare Indicators in Timor-Leste Using Satellite Imagery Data](#). Washington, DC: World Bank.
- [18] K. von Grebmer et al. 2021. [Global Hunger Index: Hunger and Food Systems in Conflict Settings](#). Dublin: Concern Worldwide and Bonn: Welthungerhilfe.
- [19] Integrated Food Security Phase Classification. 2019. [The First Integrated Food Security Phase Classification Analysis Report on the Chronic Food Insecurity Situation in Timor-Leste](#). Dili.
- [20] United Nations Children's Fund. 2020. [Timor-Leste Food and Nutrition Survey 2020 preliminary results: steady progress made, yet challenges remain](#). News release. 27 November.
- [21] World Bank. 2018. [Timor-Leste Economic Report, March 2018](#). Washington, DC.
- [22] Government of Timor-Leste, Ministry of Finance, General Directorate of Statistics. 2020. [National Accounts 2000–2019](#). Dili.
- [23] Japan International Cooperation Agency has been supporting MAF in developing the community-based natural resource management approach, which promotes village participation in local development. Government of Timor-Leste, MAF; and Japan International Cooperation Agency. 2015. [Community-Based Natural Resource Management Operation Manual: Operation Manual for Establishment of the Community-Based Natural Resource Management Mechanism at the Village Level](#). Dili.
- [24] Government of Timor-Leste. 2022. [Program of the 9th Constitutional Government](#). Dili.
- [25] Current agricultural production (by household) is low (e.g., 1 ton of maize per year) and the amounts for sales after home consumption are small (e.g., 500 kilograms of maize per year). This was also observed in Grotu, Manufahi and was a trend in most villages visited. Landholdings range from 0.25 hectares to 1.50 hectares.
- [26] Second National Communication (SNC 2020) United Nations Development Programme (UNDP) Secretary of State for Environment: Nelson de Jesus Madeira, Ligia Purificação, Zelia Anita Maria, Arlindo Silveira, Terezinha Vicente, Maximiano Gama, Fernanda C. Da Silva, Abrão Joaquim de Sa
- [27] Asian Development Bank (ADB) Country risk profile
- [28] <https://www.rccap.org/uploads/files/6aa66538-a8fa-4f53-b351-7f91c5574eeb/Timor-Leste%20Country%20Report%20Final.pdf>
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- [31] Government of Timor-Leste (2020) Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC)

[32] Human Development Index 2020: www.hdr.undp.org [accessed 12 April 2022]

[33] United States Agency for International Development (USAID 2017) Timor-Leste Climate Change Risk Profile. URL: <https://www.climatelinks.org/resources/climate-change-risk-profile-timor-leste>

[34] Including (i) water source development such as construction of wells, intake structures and rainwater collection; (ii) water supply infrastructure such as storage tanks, and distribution system for houses and farms, and integrated water management for household and irrigation uses (horticulture and nurseries); (iii) flood protection and landslide stabilization; and (iv) watershed conservation, including recharge ponds, springshed protection and restoration.

[35] The project will support farmers' groups with market assessment and planning to improve linkages to inputs, services, and markets, including financing of business models such as shared collection centers, storage and processing facilities, and equipment such as threshers and driers. It will also provide a range of options to establish value chain partnerships with providers of inputs (seeds, technologies, and assets) and facilitate access to information (price, weather, and extension services); market intermediation and consolidation; finance; markets with community roads; and marketing.

[36] Conventional contract farming may not be appropriate in Timor-Leste as contracts with smallholder farmers are too difficult to enforce. The World Bank 'Doing Business Report' (2020) ranked Timor-Leste ranked 190th out of 190 countries for enforcing contracts.

[37] Current agricultural production (by household) is low (e.g., 1 ton of maize per year) and the amounts for sales after home consumption are small (e.g., 500 kilograms of maize per year). This was also observed in Grotu, Manufahi and was a trend in most villages visited. Landholdings range from 0.25 hectares to 1.50 hectares.

[38] **Since buyers do not necessarily purchase from the farm-gate.**

[39] **Some processing activities such as washing may require a secure water source, which may require output 2 investment.**

[40] ADB, 2021

[41] Global Environment Facility. 2015. *GEF Knowledge Management Approach Paper*. Washington, DC.

Institutional Arrangement and Coordination with Ongoing Initiatives and Project.

Please describe the Institutional Arrangements for the execution of this project, including financial management and procurement. If possible, please summarize the flow of funds (diagram), accountabilities for project management and financial reporting (organogram), including audit, and staffing plans. (max. 500 words, approximately 1 page)

GEF funds and ADB co-financing are to be managed by ADB and Government of Timor-Leste. All works, goods, and services under the project will be procured in accordance with ADB's Procurement Policy (2017, as amended from time to time) and the Procurement Regulations for ADB Borrowers (2017, as amended from time to time).

The Implementation arrangements are summarized in Table 6 and the roles and responsibilities of key agencies in Table 7.

Table 6: Implementation arrangements

Aspects	Arrangements		
Implementation period	January 2025–December 2030		
Estimated completion date	31 December 2030		
Estimated grant closing date	30 June 2031		
Management			
(i) Oversight body	National project steering committee Minister of Rural Development and Community Housing (Chair) Directorate General of Rural Development of the Ministry of Rural Development and Community Housing; and representatives from the Ministry of Finance, the Ministry of Agriculture, Livestock, Fisheries and Forestry, the Ministry of Public Works, the Ministry of Tourism and Environment, Bee Timor-Leste, and other relevant ministries (members)		
(ii) Executing agency	Ministry of Rural Development and Community Housing (MRDCH)		
(iii) Key implementing agency (= GEF Execution)	Directorate General of Rural Development (DGRD)		
(iv) Implementation units	1 project management office (PMO) and 2 project implementation unit (PIU) in Manatuto		
Procurement	Request for Quotation (nationally advertised)	Multiple contracts	\$0.18 million
	Community participation	Multiple contracts	\$10.95 million
Consulting services	Quality- and cost-based selection	1,232 person-months	\$4.98 million
	Consultant qualification selection	Lump sum	\$0.16 million
Disbursement	Disbursement of the grant proceeds will follow ADB's <i>Loan Disbursement Handbook</i> (2022, as amended from time to time) and detailed arrangements agreed between the government and ADB.		

Table 7: Project Management Stakeholders and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
MOF	<ul style="list-style-type: none"> Signs legal agreements on behalf of the government with ADB. Oversees the advance account.

Project Implementation Organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> • Submits withdrawal applications to ADB. • Ensures compliance with all loan and grant covenants.
National project steering committee	<ul style="list-style-type: none"> • Oversees progress of project implementation and provides guidance • Ensures coordination among relevant ministries and stakeholders
EA (MRDCH)	<ul style="list-style-type: none"> • Provides guidance and policy direction to facilitate project implementation. • Ensures compliance with loan and grant covenants, as agreed with ADB. • Facilitates interagency and inter-ministerial coordination. • Supervises project management and implementation. • Manages provision of counterpart funding and loan and grant proceeds in respect of government's internal procedures. • Supports ADB project review missions.
IA (DGRD)	<ul style="list-style-type: none"> • Acts as focal agency to ADB. • Has overall responsibility for project implementation including procurement, financial management, environment and social safeguards and gender action plan monitoring and project reporting and administration. • Provides guidance to project management office and project management units. • Ensures compliance and adherence to loan and grant agreements. • Administers the advance accounts for loan and grant disbursements • Oversees the preparation and submission of audited project financial statements.
PMO at DGRD	<ul style="list-style-type: none"> • Ensures day-to-day project management, supervision and administration including programming, budgeting, financial planning, procurement, and accounting. • Supports the preparation of bidding documents and evaluation of proposals. • Monitors project performance and report progress, including GAP implementation. • Manages technical design, environment, resettlement, social safeguards and gender action plan provisions, and national legislative requirements. • Supervises the implementation of social and environmental safeguards requirements and ensure periodic safeguards monitoring and reporting. • Ensure the implementation of CPF and EGDF. • Establish, coordinates and manage implementation of the project grievance redress mechanism. • Secures ANLA environmental license for the project. • Carries out quality assurance review to ensure that subprojects meet established project standards. • Maintains records, administers, and manages the advance accounts and SOE procedures following government's financial regulations and ADB requirements.

Project Implementation Organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> • Ensures timely preparation and submission of the audited project financial statements acceptable to ADB. • Prepares progress reports required under the loan and grant agreements, including financial progress, procurement progress social and environmental safeguards, and gender. • Prepare and submit consolidated semiannual social safeguard monitoring report to ADB for review and disclosure. • Monitors, prepares disbursement projections, and request budgetary allocations
PIU at Manatuto	<ul style="list-style-type: none"> • Are responsible for project implementation at the municipality and suco levels. • Implement the CPF and EGDF in the project sites. • Manage and implement the project GRM. • Provide implementation support to facilitators and villagers. • Facilitate municipality and suco level planning. • Assist in the design, screening, implementation, and supervision of subprojects. • Facilitate annual and quarterly reviews of project performance. • Provide training and technical support to municipalities, sucos, sucos subcommittees, and villagers in reviewing and ensuring the technical quality of subproject proposals. • Coordinate landscape assessments including climate and market assessments and the planning process. • Provide financial oversight and monitoring of subprojects. • Contribute to the preparation of quarterly progress reports, semi-annual safeguard monitoring reports and gender. • Support the independent monitoring agency work • Undertake quality assurance reviews (technical, financial, safeguards, social acceptability, and resilience).
NPC (Ministry of Finance)	<ul style="list-style-type: none"> • Prepares bidding documents and manage procurement of goods, works and consulting services. • Secures prior approval of ADB for procurement actions where such prior approval is required in the procurement plan.
ADB	<ul style="list-style-type: none"> • Ensures timely release of funds from ADB to the project. • Issue no-objections as required. • Monitors project implementation arrangements, disbursement, procurement, consultant selection, financial management and reporting. • Provide timely recommendations for implementation issues. • Reviews compliance with agreed procurement procedures. • Reviews compliance with loan and grants covenants. • Monitors effectiveness of safeguard procedures and ensure full safeguards compliance.

Project Implementation Organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> • Monitors conformity with ADB anti-corruption policies. • Undertakes periodic review missions with the government (including inception, midterm and project completion).

Figure 4 provides a diagram of the project decision-making and reporting structure.

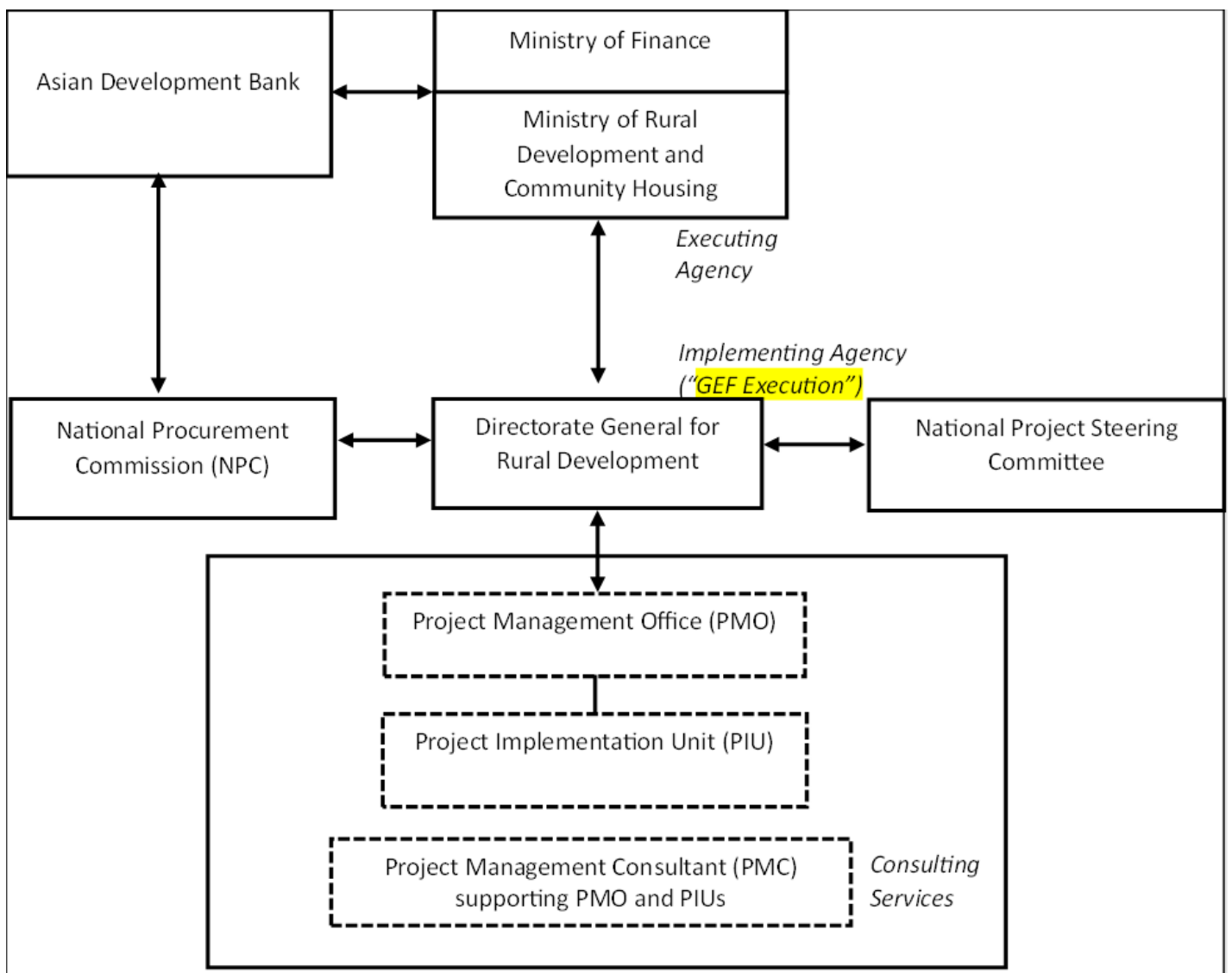


Figure 6: Project Organizational structure

Will the GEF Agency play an execution role on this project?

No

If so, please describe that role here and the justification.

Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing (max. 500 words, approximately 1 page)

ADB in the Pacific.

ADB is a multilateral development finance institution that provides loans, grants and technical assistance. ADB is composed of 68 members, 49 of which are from the Asia and Pacific region. ADB's clients are its member governments, who are also its shareholders. In addition, ADB provides direct assistance to private enterprises of developing member countries through equity investments and loans. As of end 2022, ADB's total active portfolio amounted to \$114 million, of which \$101.1 million of sovereign loans, grants guarantees and equity, and \$12.9 million non-sovereign.

ADB has been supporting Timor-Leste since its independence with a focus on removing infrastructure bottlenecks and institutional constraints to open the way for more sustainable development. ADB's expanded portfolio is now supporting the Government of Timor-Leste's efforts to foster a conducive environment for private sector development and economic diversification.

To date, ADB has committed 80 public sector loans, grants, and technical assistance totalling \$756 million to Timor-Leste. ADB's current sovereign portfolio in Timor-Leste includes 14 loans worth \$574.5 million. ADB's country partnership strategy for Timor-Leste, 2023–2027 focuses on building climate-resilient infrastructure and basic services, and strengthening the enabling environment for economic diversification. Increasing support is provided for agricultural and natural resources management.

ADB has a strong presence in Timor-Leste through its well-staffed Resident Mission. In-country, in addition to regular, multi-level meetings with government partners and counterparts, ADB regularly meets with nongovernment organizations and other stakeholders to share information. ADB notably has been collaborating with various bilateral and multilateral agencies including the Australian federal government's Department of Foreign Affairs and Trade, the European Union, Japan International Cooperation Agency, World Bank, International Financial Corporation, and the United Nations.

Across Asia and the Pacific, ADB is scaling-up of agriculture operations and placing an increased emphasis on natural resources management. ADB's strategy is based on the view that agriculture and food security should be viewed in the context of the broader economic transformation in Asia and the Pacific. In particular, the adoption of food security policies that address both immediate needs and medium- to long-term resilience requirements at national, regional, and global levels, are urgently needed in the region. To achieve better outcomes from agriculture and natural resources investments, four dimensions of efforts are emphasized: fostering public-private partnership (PPP), drawing on cross-sector synergies and complementarities, strengthening intra- and inter-institutional coordination, and improving environmental sustainability.

ADB’s actions in Timor-Leste are coordinated through the Country Partnership Strategy (CPS) for Timor-Leste, 2023–2027 – a joint Government and ADB strategy. The CPS aims to support the country’s economic recovery, in line with its long-term Strategic Development Plan 2011–2030 (SDP) and the medium-term strategy of economic diversification elaborated in the Economic Recovery Plan (ERP). The CPS is geared to helping Timor-Leste overcome critical development impediments and emerge stronger from the COVID-19 pandemic by focusing on two pillars: (i) build climate-resilient infrastructure and basic services by improving connectivity, ensuring equitable access to water and sanitation, introducing more efficient and cleaner energy, investing in liveable neighbourhoods, and improving infrastructure governance; and (ii) promote an enabling environment for economic diversification by strengthening rural development and agriculture, human development, private sector development, financial access, and regional cooperation and international trade. Crosscutting priorities across the pillars are strengthening governance and institutional capacity; accelerating gender equality; and promoting knowledge and innovation, including digitalization.

Coordination with ongoing and planned projects, including GEF projects

The project will coordinate with ADG, GEF and non-GEF projects being developed and implemented in Timor-Leste and focussed on rural development and or rural resilience. Table 8 and Table 9 list ongoing and planned projects in Timor-Leste and describe the approach to coordination.

Table 8: ADB Ongoing and Pipeline Projects

Project	Description	Status and coordination measures
The Coffee and Agroforestry Livelihood Improvement Project (CALIP)	CALIP is an innovative project to improve the livelihoods of Timor-Leste's coffee farmers. The project underpins implementation of the new Coffee Sector Development Plan and pilots a new model for delivering a range of training to 2,000 coffee farming households in the Aileu, Ainaro, Bobonaro, Ermera, Liquica, and Manufahi municipalities. The project also strengthens industry management and supports initiatives to improve coffee quality and linkages with key markets. Government and ADB are considering a follow-up investment project.	Ongoing. Within ADB, the same management and technical team support CAPIP and RRLIP. Very close multi-level already coordination established.
Towards Sustainable and Conversion-Free Aquaculture in Indonesian Seas Large Marine Ecosystem (ISLME)	With support from LDCF funds (GEF ID 10867, regional project.) The main objective of ISLME is to alter the trajectory towards more sustainable and conversion-free aquaculture production within the Indonesia Seas Large Marine Ecosystem (ISLME). The focus will be on 2 key commodities which are important in the Asia and the Pacific region. For Indonesia, on shrimp to feed value chain as part of the broader shrimp infrastructure supply chain; and in Timor-Leste on the seaweed industry.	Start-up phase. Within ADB, the same management and technical team support CAPIP and RRLIP. Very close multi-level already coordination established.
Climate Resilient Water Supply and Sanitation Systems in Secondary Cities	With support from GEF funds (GEF ID 10986, regional project.) This project aims to innovatively put climate variability and climate change at the heart of the planning and decision-	Under final development

	making processes. This is expected to lead to greater possibilities, to increased efficiency, and to more resilience to climate change. Outputs are intended to be: (1) Full understanding of climate in the three cities in the target system, including how climate change will impact WSS (both directly and indirectly), and of strategy for adaptation; (2) Details of measures for initial implementation of above strategy (3) Agreed financial package to finance establishment of a climate resilient water supply and sanitation system in AMS.	
Workforce and skills development project (Phase 2).	The project will aim to support the Government of Timor-Leste to strengthen the technical and vocational education and training (TVET) system by (i) upgrading teaching and learning environments of selected key TVET institutions, (ii) improving the access to industry-aligned training opportunities in priority sectors (agriculture, manufacturing, construction), (iii) enhancing professional development of TVET teachers, (iv) strengthening the foundations of competency-based training by harmonizing standard development and subsequent curriculum development, preparing teaching and learning aids, including textbooks.	Under development. If the project includes a component on agricultural education, and supports institutions in the RRLIP project area, strong implementation coordination will be established.

Table 9: Pertinent GEF Projects under implementation or preparation

Project	Description	Status and coordination measures
Management of Indonesian and Timor-Leste Transboundary Watersheds (ID 10679) (Conservation International, CI)	This is a two-country projects. The objective is “to ensure collaborative management of freshwater ecosystems and protect water, food and livelihood security in the Talau-Loes and Mota Masin basins straddling the border between Indonesia and Timor-Leste”. This includes activities related to water resource management in the catchments providing water to two of this proposed project’s target cities.”	Ongoing. ADB Timor Office will follow up to ensure proper coordination.
Adapting to climate change and enabling sustainable land management through productive rural communities in Timor-Leste (ID 10713) (UNEP)	The objective is to increase climate resilience and reduce land degradation in priority watersheds by strengthening collaborative SLM for increased livelihood resilience and water security of agriculture-based communities an ecosystem-based adaptation (EbA) model.	Start-up phase. ADB Timor Office will follow up to ensure proper coordination.
Nature-based Solutions for Inter-Sectoral Nature-Positive Development in Timor-Leste (ID 11256) (UNDP/FAO)	This is a multi-sectoral, multi focal area child project. The focus is on biodiversity and land management, including marine protected areas. The project’s target area is distant from the target areas of the proposed project. However, information exchange, lessons learning and collaboration at the national level may be possible and will be pursued.	Under preparation. Contact has been established with the FAO office. ADB Timor Office will follow up to ensure proper coordination
Local investment and action for climate resilient, water security and healthy farming	Proposed for support from LDCF funds.	Concept Preparation

<p>communities in Timor-Leste (FAO)</p>	<p>The proposed Objective is 'Enhancing water security and climate resilience for rural communities in Timor-Leste through innovative youth and women-led nature positive solutions leveraging on government and local civil society increased capacity to deliver and monitor climate investments.</p>	<p>Although at the very initial preparation stage, this proposed project will have strong synergies with RRLIP. Technical and discussions with the FAO team have been established.</p>
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Other

To maximize impact, the project leverages existing initiatives, particularly among key development partners that support rural agriculture-based livelihood through their respective programs. The project will work in synergy with the Government of Australia's Phase 2 of To'os ba Moris Di'ak or Farming

for Prosperity (TOMAK) which aims to support development of resilient agriculture-based livelihoods by promoting improved natural resources management at community level, as well as climate-smart agriculture practices for improved production of high value crops.²⁶ By working in synergy, the two initiatives can maximize resource utilization and ensure coordination. RRLIP will target a municipality which is not part of TOMAK to avoid duplication among the projects, but due to geographical proximity the projects will explore synergies in market development and linkages. Alignment and complementarity will be ensured on essential project delivery models and pivoting of respective workplans where possible. In addition, the project will collaborate with other development partners working in the sector, particularly through participation in development partner coordination meetings; and sharing of lessons, best practice, and knowledge developed during implementation.

Implemented through UNDP, the GCF funded “*Safeguarding rural communities and their physical and economic assets from climate induced disasters in Timor-Leste*” (FP 109) was approved in 2019 and is addressing the underlying causes of vulnerability of social and physical rural infrastructure and addressing a limited capacity to generate and use information about climate risks. This project will strengthen the capacity of institutions to assess and manage climate risks and to implement, finance and maintain local infrastructure services. Monitoring of climate risk information will be enhanced. In addition, climate resilient building measures will improve small-scale rural infrastructure in vulnerable areas. In particular, the project is providing critical, climate resilient infrastructure (e.g. roads, drainage) in many remote and rural areas across Timor-Leste.

Core Indicators

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

META INFORMATION – LDCF

LDCF true	SCCF-B (Window B) on technology transfer false	SCCF-A (Window-A) on climate Change adaptation false
Is this project LDCF SCCF challenge program? false		
This Project involves at least one small island developing State(SIDS). true		
This Project involves at least one fragile and conflict affected state. false		
This Project will provide direct adaptation benefits to the private sector. true		
This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). false		
This project will collaborate with activities begin supported by other adaptation funds. If yes, please select below		
Green Climate Fund false	Adaptation Fund false	Pilot Program for Climate Resilience (PPCR) false

This Project has an urban focus.

false

This project will directly engage local communities in project design and implementation

true

This project will support South-South knowledge exchange

false

This Project covers the following sector(s)[the total should be 100%]: *

Agriculture	40.00%
Nature-based management	10.00%
Climate information services	10.00%
Coastal zone management	0.00%
Water resources management	40.00%
Disaster risk management	0.00%
Other infrastructure	0.00%
Tourism	0.00%
Health	0.00%
Other (Please specify comments)	0.00%
Total	100.00%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise false	Change in mean temperature false	Increased climatic variability true	Natural hazards true
Land degradation false	Coastal and/or Coral reef degradation true	Groundwater quality/quantity false	

CORE INDICATORS – LDCF

	Total	Male	Female	% for Women
CORE INDICATOR 1 Total number of direct beneficiaries	43,000	21,500.00	21,500.00	50.00%
CORE INDICATOR 2 (a) Area of land managed for climate resilience (ha) (b) Coastal and marine area managed for climate resilience (ha)	3,371.00 0.00			
CORE INDICATOR 3 Number of policies/plans/ frameworks/institutions for to strengthen climate adaptation	1.00			
CORE INDICATOR 4 Number of people trained or with awareness raised	5,100	3,050.00	2,050.00	40.20%
CORE INDICATOR 5 Number of private sector enterprises engaged in climate change adaptation and resilience action	0.00			

SUB INDICATOR 1

	Total	Male	Female
1.1 Number of direct beneficiaries from more resilient physical and natural assets	21500	10,750	10,750
1.2 Number of direct beneficiaries with diversified and strengthened livelihoods and sources of income	21500	10,750	10,750
1.3 Number of direct beneficiaries from the new or improved climate information services including early warning systems	0	0	0
1.4 Number of youth (15 to 24 years of age) benefiting from the project	8600	4,300	4,300
1.5 Number of elderly (over 60 years of age) benefiting from the project	4300	2,150	2,150
1.6 Increased income, or avoided decrease in income (per capita in \$ across all relevant beneficiaries)	0		

SUB-INDICATOR 2

2.1 Hectares of agricultural land

3,371

2.2 Hectares of urban landscape

0

2.3 Hectares of rural landscape

0

2.4 Hectares of forests

0

2.5 Hectares of marine area

0

2.6 Hectares of freshwater area

0

2.7 Number of residential houses

0

2.8 Number of public buildings

0

2.9 Number of irrigation or water structures

30

2.10 Number of fishery or aquaculture ponds or cages

0

2.11 Number of ports or landing sites

0

2.12 Km of road

0

2.13 Km of riverbank

0

2.14 Km of coast

0

2.15 Km of stormwater drainage

1

2.16 Number of new adaptation technologies supported

0

SUB INDICATOR 3

3.1 Number of policies/plans developed and strengthened that will mainstream climate resilience

1

3.2 Number of systems and frameworks established for continuous monitoring, reporting and review of climate adaptation impacts

0

3.3 Number of national climate policies and plans enabled, including national adaptation planning processes

0

3.4 Number of institutional partnerships or coordination mechanisms established or strengthened

1

3.5 Number of institutions with increased capacity to plan, implement, monitor, and report for climate adaptation

2

3.6 Number of institutions with increased capacity to attract, and manage climate adaptation finance

0

3.7 Number of local community organizations benefitting from and/or engaged in institution strengthening, partnerships, or financing

30

3.8. Number of climate risk and vulnerability assessments conducted

30

SUB INDICATOR 4

4.1 Number of people trained or made aware of climate change impacts and appropriate adaptation responses	Total	Male	Female
a) National government			

	6	3	3
b) Local government	4	2	2
c) Local community organizations	5060	3,030	2,030
d) Extension services	30	15	15
e) Hydromet and disaster risk management agencies	0	0	0
f) School children, university students, and teachers	0	0	0
g) Youth	1012	606	406

SUB INDICATOR 5

	Total	Male	Female
5.1 Amount of investment mobilized (US\$) from private sector sources	0		
5.2 Number of entrepreneurs supported for climate adaptation or resilience	0	0	0
5.3 Total financial value of lines of credit and/or investment funds	0		
5.4 Number of MSMEs incubated/accelerated with technical assistance, financial matchmaking, and/or direct financing	0		

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	The project will address climate vulnerability at its core, as explained in the preceding sections.
Environmental and Social	Low	Unanticipated environmental and social safeguards issues arise during implementation. Mitigation Measures: The PMO will establish a grievance redress mechanism during implementation to address unforeseen problems and issues and to help resolve concerns, complaints, and grievances.

Political and Governance	Moderate	There is a new government in place in Timor-Leste as result of recent elections. Although one never knows or is able to predict how the political pendulum will swing, ADB has assurance based on recent consultation at the Vice-Prime Minister level that this project is a priority and government support will be strong.
INNOVATION		
Institutional and Policy	Moderate	Prolonged government process for decision making and approval may delay project implementation. Mitigation Measure: The government shall ensure timely approval of release of funds, including counterpart funds (in kind), as per the grant covenant, and ADB will engage in continuous dialogue with the government during regular missions and country portfolio review missions.
Technological	Low	Rural water infrastructure constructed or upgraded do not deliver the intended level of service because of poor construction quality and unsustainable management. Mitigation Measures: PMO and PIUs will ensure that (i) technical standards are applied in design and management of the infrastructure (including provisions for potential impacts of climate change) and (ii) training for planning, design, and O&M of infrastructure is provided to communities. The project management consultant team will provide technical and management support to the PMO and PIUs. Structural interventions interfere with or duplicate ongoing or planned projects. Mitigation Measures: Coordination with relevant agencies and programs will be ensured during project implementation at the national, municipal, and village levels.
Financial and Business Model	Low	The project's benefits are not sustained over the long term because of inadequate O&M/ Mitigation Measures; The project will provide training on O&M of water supply, flood protection, and farm and market linkages infrastructure. The process will build upon existing systems of cost recovery and sharing of maintenance obligations. The project has a multilayered structure for financial management involving central and municipal level offices. Mitigation Measures: The roles of the central- and municipal-level offices and their involvement will be clearly defined and agreed prior to effectiveness.
EXECUTION		
Capacity	Substantial	Limited government and community capacity and technical expertise at the national, municipal, and village levels. Mitigation Measures: The PMO and PIUs will be fully staffed by experienced staff supplemented by qualified international and national consultants (the project management consultant) to support project implementation at all levels. Shortage of experienced in-country personnel with formal training in accountancy and finance, and competition for limited resources from ongoing projects may result in delays in preparation and submission of project financial statements. Mitigation measure: The PMO is formed before grant signing with properly qualified

		and trained finance staff. Relevant staff are trained on (i) ADB disbursement procedures, (ii) ADB financial management requirements, (iii) project accounting methods (IPSAS cash), and (iv) commercial accounting software used for the project. The PMO is formed before grant signing with properly qualified and trained finance staff. Relevant staff are trained on (i) ADB disbursement procedures, (ii) ADB financial management requirements, (iii) project accounting methods (IPSAS cash), and (iv) commercial accounting software used for the project.
Fiduciary	Low	Internal audit is not conducted as a regular process. Mitigation Measures: This high-level issue will be addressed at the country level through PFM reform and continuous dialogue between ADB and the government. Capacity constraints in external auditing by the CdC. Mitigation Measures: The project will engage a private sector audit firm to conduct annual project audits. Non-compliance with ADB regulations because of inconsistencies between national procurement regulations and ADB-espoused principles of procurement. Mitigation Measures: The team undertook a strategic procurement planning to review and address inconsistencies between the national and ADB procurement frameworks. Hands-on training on the ADB Procurement Policy (2017, as amended from time to time) will be provided at an early stage of project implementation to enable the adoption of up-to-date procurement practices and updated bidding documents. Limited understanding of the executing and implementing agencies on ADB's procurement policy and contract management and administration. Mitigation Measures: An experienced procurement specialist will be engaged as part of the project management consultant to support the PMO and PIUs.
Stakeholder	Low	Farmers are reluctant to apply climate-resilient farming practices. Mitigation Measures: The project interventions will be identified through a participatory planning mechanism to ensure ownership and continuous technical support will be provided to farmers through facilitators and extension workers.
Other		
Overall Risk Rating	Moderate	Based on the full risk assessment as summarized above, the composite overall risk rating is Medium. Each of the risks in Table 10 (and Annex N) contributes to the overall risk. The measures to address each individual risk are also set out in Table 10 (and Annex N). Collectively, these measures will reduce the composite overall risk rating.

A. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Explain how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this. (max. 500 words, approximately 1 page)

The project is aligned with, and supportive of, GEF/LDCF programming strategies as follows.

Alignment with GEF/LDCF.SCCF.25/Inf.05^{[1]⁴³} is described in Table 13:

Table 13: Alignment to GEF Focal Area Results

GEF CCA Focal Area Result	Project contribution
Objective 1 Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation	
Outcome 1.1 Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/or enhance resilience	
Output 1.1.1 Physical assets made more resilient to climate variability and change	Under Output 2, the project will invest in more resilient water supply infrastructure. Under Output 3, The project will invest in more resilient agricultural infrastructure. Under Output 1, The project will develop local capacity for operations and maintenance of above.
Output 1.1.2 Livelihoods and sources of income of vulnerable populations diversified and strengthened	<p>The areas targeted are remote and the communities highly vulnerable to climate change (as described in above sections).</p> <p>Notably under Output 3, the project strategy is: (i) to increase the production of marketable, quality products; (ii) increase the ability of farmers to aggregate produce, and; (iii) decrease the costs of access and transport to market.</p> <p>It is noted that the remote areas of Timor-Leste currently are only lightly integrated into the sub-national or national economy, for diverse set of reasons. RRLIP aims to explore, test and establish investment models that are effective in remote, rural areas of Timor-Leste. The strategies are by increasing overall resilience, developing agricultural practices and techniques that lead to more surplus and less perishable goods, and developing understanding of markets.</p>

OBJECTIVE 3: Foster enabling conditions for effective and integrated climate change adaptation	
Outcome 3.2 Institutional and human capacities strengthened to identify and implement adaptation measures	
Output 3.2.1 Capacities strengthened to identify, implement and/or monitor adaptation measures	Output 1 will focus on building the capacity of farmers, communities and local governments to understand climate change, to understand response strategies, and to implement technical and economic solutions to the challenges.

In line with GEF/LDCF.SCCF.32/04/Rev.01^{[2]44}:

- The project is clearly and directly supportive of the following themes: 1- Agriculture, Food Security, and Health; 2 – Water; and, 3 – Nature-Based Solutions.
- The project intervenes in at least two of the intervention scales:
 - (b) landscape and value-chain based approaches – the project adopts a land-scale approach through each sub-project, as explained above, and focusses to an extent on value chains; and
 - (c) regional approaches focusing on rural, urban and coastal areas – the project targets all remote, rural regions, initially in Manatuto, then in other municipalities in later phases.
- In line with the Theory of Change for Climate Change Adaptation Strategy, the project notably contributes to the following two Outcomes: climate resilient communities, ecosystems, value chains and regions, and; improved capacity and access to adaptation solutions and finance.

Country Alignment.

The project is aligned to the Timor-Leste Agriculture Strategy^{[3]45} and its Economic Recovery Plan^{[4]46} of August 2020, as these aim to make the economy and society more resilient to future shocks with agriculture, including the small agri-food industry, as a priority area. The project contributes directly to these.

The project also is aligned with, and contributes to, Timor-Leste’s climate change policies, plans and priorities, as follows:

- 2021. *National Adaptation Plan: Addressing Climate Risks and Building Climate Resilience* (NAP). The RRLIP project is aligned to all the NAP’s *principles*, notably: national ownership; nationally appropriate climate actions; integration of climate, resilience and livelihood approaches; community-based adaptation approaches; and ecosystem-based adaptation approaches. The NAP identifies seven priority areas, the fourth is agriculture and the

fifth is water. This RRLIP project contributes to the following underlying programs “implement community-centric, climate smart agriculture and resilient land management” and “empower communities to utilize climate-smart water management techniques and build new/retrofit existing water infrastructure for climate resilience.”

- 2022. *Nationally Determined Contribution: Timor-Leste, 2022–2030* (NDC). The NDC prioritizes nature positive growth and transition, and climate adaptation and resilient building. The identifies agriculture and the water sector as priorities for adaptation. This includes the following activities that this RRLIP project contributes to: diversifying food production, and integrated water resource management.
- 2022. *National Climate Change Policy*. Based on the NAP and the NDC, the NCCP notes that the “agricultural sector is likely to be the most negatively affected by climate change”, It sets out six adaptation policies for this section, of which this project contributes to the following three: Adjust crop management systems and intensification practices to changing rainfall and temperature, including through conservation agriculture, improved water management, and integrated approaches to agriculture; develop crop species (in particular maize and rice) that are more resilient to changing conditions in Timor-Leste, including greater resistance to drought, greater resilience to variations in rainfall patterns and intensity, and increased yields under less stable conditions; diversify food crop species to improve food security.

[1] Updated Results Architecture For Adaptation To Climate Change Under The Least Developed Countries Fund And The Special Climate Change Fund (2018-2022), GEF, 2018

[2] GEF Programming Strategy On Adaptation To Climate Change For The Least Developed Countries Fund And The Special Climate Change Fund For The GEF-8 Period, GEF, 2022

[3] Government of Timor-Leste. 2020. *Ministry of Agriculture and Fisheries Strategic Plan, 2021–2025*. Dili; and Government of Timor-Leste. 2017. [Agriculture Policy and Strategic Framework: Towards Nutrition-Sensitive, Climate Smart Agriculture and Food Systems](#). Dili.

[4] Government of Timor-Leste. 2020. [Economic Recovery Plan](#). Dili.

B. POLICY REQUIREMENTS

Gender Equality and Women’s Empowerment:

We confirm that gender dimensions relevant to the project have been addressed during Project Preparation as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

1) Does the project expect to include any gender-responsive-measures to address gender gaps or promote gender equality and women's empowerment?

Yes

If the project expects to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment, please indicate in which results area(s) the project is expected to contribute to gender equality:

Closing gender gaps in access to and control over natural resources;

Yes

Improving women's participation and decision-making; and/or

Yes

Generating socio-economic benefits or services for women.

Yes

2) Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during Project Preparation as required per GEF policy, their relevant roles to project outcomes has been clearly articulated in the Project Description (Section B) and that a Stakeholder Engagement Plan has been developed before CEO endorsement.

Yes

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor; Yes

Co-financier;

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor;

Other (Please explain) Yes

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided information regarding Environmental and Social risks associated with the proposed project or program, including risk screenings/ assessments and, if applicable, management plans or other measures to address identified risks and impacts (this information should be presented in Annex E).

Yes

Please provide overall Project/Program Risk Classification

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
	Low		

C. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described during Project Preparation in the Project Description and that these activities have been budgeted.

Yes

Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate and these benefits translate in supporting the achievement of global environmental benefits (GEF Trust Fund) or adaptation benefits (LDCF, SCCF). This section identifies the direct beneficiaries from the project.

The prevalence of geographical isolation and limited access to urban centers across Timor-Leste, combined with existing socio-economic conditions, compound the acute vulnerability of most rural Timorese settlements to climate change-induced risks. According to a 2013 study by the ADB^{[1]⁴⁷}, among the 89 sucos (administrative villages) with the lowest living standards, only 3% of households had access to electricity, in stark contrast to the 66% average in the 89 sucos with the highest living standards. Furthermore, access to improved water and sanitation facilities is significantly higher in sucos with higher living standards.

In Manatuto, poverty is a significant issue, with 43% of households falling below the national poverty line^{[2]⁴⁸}. The data indicates that there is significant variation in poverty rates within sucos - in Manatuto the suco-level headcount poverty rates range from 10% to 71%. The poverty gap and poverty severity index follow similar trends although with some slight variation. The sucos with the highest level of poverty are Aubeon, Barique, Hohrai, Lacumesac and Manelima, Cribas and Fatumacerec Figure 5 illustrates both the diversity of poverty between areas, and the intensity of poverty in much of Timor-Leste.

Poverty Headcount Rate

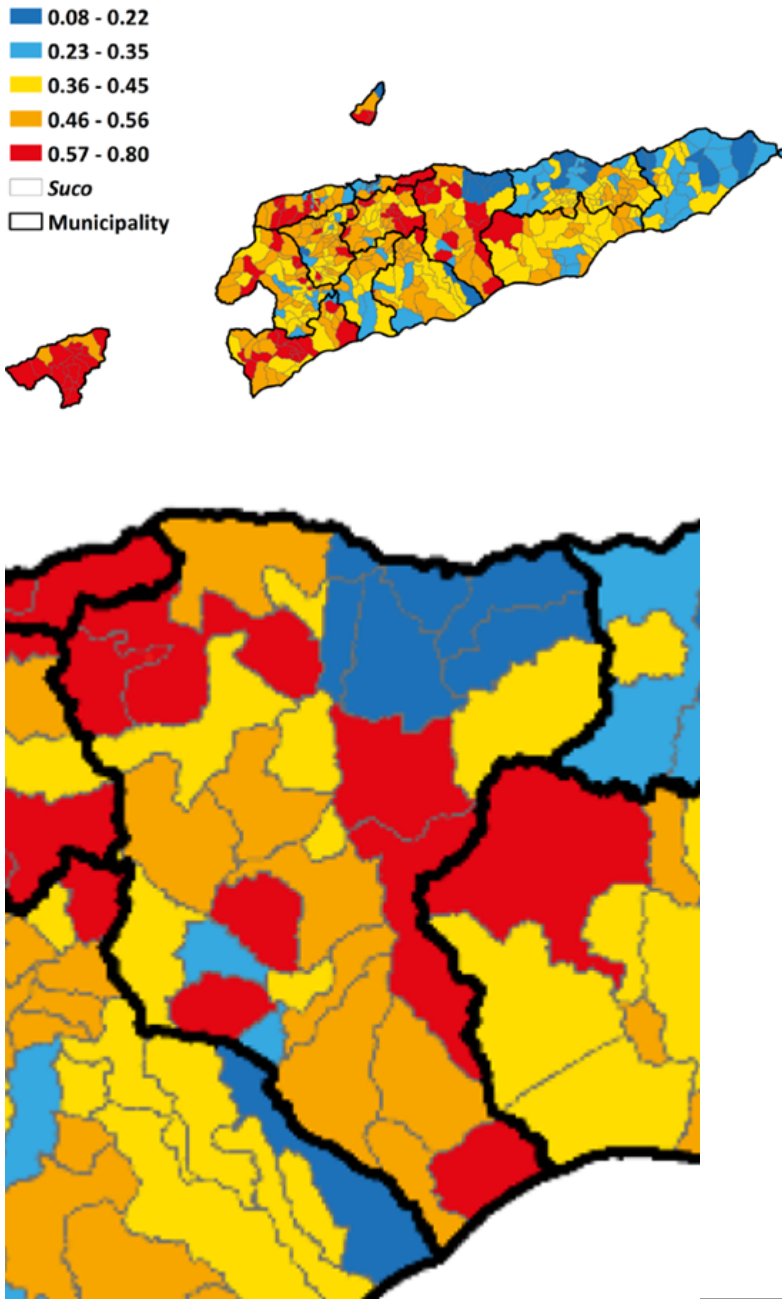


Figure 7 Poverty Headcount rate, left (Timor-Leste), right (Manatuto)

Source: World Bank. 2019. Developing Timor-Leste Gender Disaggregated Poverty Small Area Estimates – Technical Report.

The RRLIP project will support about 60,000 people by enhancing resilience of rural communities that are predominantly agriculture-based, improving the productivity of farms and agroforestry through climate-smart approaches, enhancing market linkages, and developing diversified livelihood opportunities. The project addresses the twin, inter-related challenges of Rural Livelihoods being highly dependent on the agriculture sector and declining agricultural performance. For example, the agriculture sector’s contribution to non-oil GDP steadily declined from 32% in 2006 to 17% in 2019.

The project will generate significant direct benefits for the targeted population. Under Output 2, the principal benefits foreseen include: the economic savings and opportunities from averted burden of disease (diarrhea, malnutrition, and enteropathy); educational benefits from higher school enrolment and attendance rates; saved travel and waiting time for

water collection; improved economic opportunities from diversified farming systems both in irrigation and livestock production; and increased climate resilience and avoided damages from extreme weather events such as floods. From Output 3, the benefits will result from improved agronomic practices such as weed control, erosion reduction, supplement soil nutrients, improved soil structure, and conserved soil moisture. This will lead to increased household income, nutrition, and food security; increased crop yields and quality; and improved resilience to highly variable weather conditions resulting from climate change.

In order to more successfully address poverty, the project is classified as *geographic targeting*. That is, it will increase the standard of living of targeted communities and raise their resilience. This will be achieved by strengthening the availability and resilience of community infrastructure, improving access to markets, raising household incomes through integrated farming systems investments, and building skills and knowledge. Infrastructure construction will provide on-the-job skills training, and skilled and unskilled work opportunities for communities. Groups of poor households, particularly households headed by women, will be enabled to improve their livelihoods through access to training and economic opportunities.

Finally, as described above, the project delivers benefits in terms of gender. The project will notably support women by promoting their meaningful participation and building their capacity to invest sustainably in climate- and disaster-resilient infrastructure and livelihoods.

[1] Asian Development Bank, 2013. ‘Least Developed Sucos Timor-Leste’
<https://www.adb.org/publications/least-developed-sucos-timor-leste>

[2] World Bank 2019 Developing Timor-Leste Genderdisaggregated Poverty Small Area Estimates – Technical Report.

ANNEX A: FINANCING TABLES

GEF Financing Table

Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional / Global	Focal Area	Programm ing of Funds	Grant / Non- Grant	GEF Project Grant(\$)	Agency Fee(\$)	Total GEF Financing (\$)
ADB	LDCF	Timor Leste	Climate Change	LDCF Country allocation	Grant	4,588,000.0 0	412,000 .00	5,000,000.00
Total GEF Resources (\$)						4,588,000.0 0	412,000 .00	5,000,000.00

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

false

PPG Amount (\$)

PPG Agency Fee (\$)

GEF Agency	Trust Fund	Country/ Regional / Global	Focal Area	Programming of Funds	PPG(\$)	Agency Fee(\$)	Total PPG Funding(\$)
Total PPG Amount (\$)					0.00	0.00	0.00

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
Total GEF Resources (\$)					0.00

Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing(\$)	Co-financing(\$)
CCA-1-1	LDCF	4,588,000.00	22,147,000.00
Total Project Cost (\$)		4,588,000.00	22,147,000.00

Confirmed Co-financing for the project, by name and type

Please include evidence for each co-financing source for this project in the tab of the portal

Sources of Co-financing	Name of Co- financier	Type of Co- financing	Investment Mobilized	Amount(\$)
GEF Agency	ADB (COL loan, WHAIP)	Loans	Investment mobilized	18,000,000.00
GEF Agency	ADB (ITF)	Grant	Investment mobilized	500,000.00

GEF Agency	ADB (ADF 13 thematic)	Grant	Investment mobilized	2,647,000.00
Recipient Country Government	Ministry of Rural Development and Community Housing	In-kind	Recurrent expenditures	1,000,000.00
Total Co-financing (\$)				22,147,000.00

Please describe the investment mobilized portion of the co-financing

The vast majority of co-financing is mobilized investment. This consists of ADB core grant funds available for Timor-Leste, and several ADB managed grant funds for addressing climate change and resilience, and a pipeline loan. The investments were identified through the ADB and Government of Timor-Leste engagement under the joint Country Partnership Strategy.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	8/30/2024	Yoko Watanabe		yokowatanabe@adb.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Name of GEF OFP	Position	Ministry	Date (Month, day, year)
Joao Carlos Soares	Director for National Directorate of Climate Change	National Directorate for Environmental Affairs Edificio de Fomento, Mandarin	8/5/2024

ANNEX C: PROJECT RESULTS FRAMEWORK

Please indicate the page number in the Project Document where the project results and M&E frameworks can be found. Please also paste below the Project Results Framework from the Agency document.

As described in the main text, the RRLIP project aims to develop a sustainable rural development model for Timor-Leste which can be scaled up and replicated as a larger project covering more municipalities in the future. RRLIP is considered the first phase of such larger initiative. The future project, WHAIP, will draw on the lessons from the RRLIP and replicate its successful models of increasing climate resilience and promoting agriculture value chains. The Project Results Framework reflects this two-stepped approach. It sets indicators and targets for RRLIP, and it sets indicative indicators and targets for the entire WHAIP.

It is noted that the two-step approach allows for lesson learning during RRLIP to be applied to later phases of WHAIP. Hence, it is possible that, after some time implementing RRLIP, it will be possible to update and refine the results framework for WHAIP.

Note: the pertinent GEF/LDCF indicators are included at the bottom of the following table.

Impact	the Project is Aligned with			
Results Chain	Performance Indicators		Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
Outcome	RRLIP - with LDCF support	WHAIP (including RRLIP)		
Livelihoods and resilience of rural communities improved	By 2032: a. Livelihood capital ^b of 70% of households in Manatuto project areas increased by 10% (2024 baseline: 0) b. Number of villages in Manatuto with high climate and disaster risk profile reduced by 15% (2024 baseline: To be determined)	By 2035: a. Livelihood capital ^b of 80% of households in project areas increased by 10% (2024 baseline: 0) b. Number of villages with high climate and disaster risk profile reduced by 15% (2024 baseline: To be determined)	a. Project progress reports and project completion report (outcome and end-term surveys under monitoring and evaluation system). b. Climate vulnerability assessments based on project-generated reports and project completion report	A: Extreme weather events exceeding those forecasted under current models do not occur.
Outputs 1. Institutional and organizational capacity of farmer groups, communities, and government strengthened	1a. 50% of target <i>sucu</i> (village) development committees in Manatuto have adopted gender- and socially inclusive village landscape management regulations and climate adaptation plans ^e (2022 baseline: 0 committees have landscape management regulations completed)	1a. 50% of target <i>sucu</i> (village) development committees have adopted gender- and socially inclusive village landscape management regulations and climate adaptation plans ^e (2022 baseline: 0 committees have landscape management regulations completed)	1a.–c. Progress reports produced by the PMO	A: Increased variability in seasonal rainfall does not exceed the current forecast

	<p>1b. A gender-sensitive climate adaptation landscape management geospatial information system^f designed for Manatuto and operational in project areas (2022 baseline: 0)</p> <p>1c. At least 40% of farmers (including at least 30% of women farmers) in Manatuto demonstrate increased knowledge of climate-resilient farm and landscape management (2022 baseline: 0)</p>	<p>1b. A gender-sensitive climate adaptation landscape management geospatial information system^f designed and operational in project areas (2022 baseline: 0)</p> <p>1c. At least 40% of farmers (including at least 30% of women farmers) demonstrate increased knowledge of climate-resilient farm and landscape management (2022 baseline: 0)</p>		
<p>2. Water harvesting and flood protection infrastructure constructed</p>	<p>By 2031:</p> <p>2a. Water facilities and flood protection infrastructure constructed or upgraded in 30 villages in Manatuto (2024 baseline: 0)</p> <p>2b. Gender-responsive and inclusive water infrastructure plans^c prepared by 30 villages in Manatuto based on participatory landscape management planning, with at least 40% participation of women and at least one women-only focus group discussion per village (2024 baseline: 0 villages) (</p> <p>2c. Women represented 30% of unskilled labor employed in building infrastructure in Manatuto (2024 baseline: 0)</p>	<p>By 2034:</p> <p>2a. Water facilities and flood protection infrastructure constructed or upgraded in at least 120 villages (2024 baseline: 0)</p> <p>2b. Gender-responsive and inclusive water infrastructure plans^c prepared by at least 120 villages based on participatory landscape management planning, with at least 40% participation of women and at least one women-only focus group discussion per village (2024 baseline: 0 villages) (</p> <p>2c. Women represented 30% of unskilled labor employed in building infrastructure (2024 baseline: 0)</p>	<p>2a.–d. Progress reports produced by the PMO</p>	

<p>3. Farming systems and market linkages for climate resilience developed</p>	<p>2d. 5,000 m³ of additional water storage developed for domestic and agricultural water supply (2024 baseline: 0 m³)</p> <p>3a. Climate-resilient farming techniques applied by 50% of agriculture-based households target villages^d (2024 baseline: 0)</p> <p>3b. At least 20% farming households (of which 10% are households headed by women) in Manatuto reported improved access to markets (2024 baseline: 0)</p>	<p>2d. At least 20,000 m³ of additional water storage developed for domestic and agricultural water supply (2024 baseline: 0 m³)</p> <p>3a. Agroforestry and climate-resilient farming techniques applied by 50% of agriculture-based households in target municipalities (2024 baseline: 0)</p> <p>3b. At least 20% farming households (of which 10% are households headed by women) reported improved access to markets (2024 baseline: 0)</p>	<p>3a.–b. Progress reports produced by the PMO</p>	<p>A: Currently available models for climate-smart agriculture are adopted at scale</p> <p>A: Frequency and severity of exogenous shocks do not increase beyond current estimates</p>
<p>GEF CORE INDICATORS</p>				
<p>GEF/LDCF Objective: Reduce Vulnerability and increase resilience through innovation and technology transfer for climate change adaptation (Objective 1)</p>				
<p>GEF/LDCF Outcome: Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/or enhance resilience (Outcome 1.1)</p>				
<p>Output 1.1.1: Physical and natural assets made more resilient to climate variability and change</p>	<p>I. Total no. of direct beneficiaries in Manatuto from more resilient physical and natural assets. Gender disaggregated. (baseline 0, target 37,130)</p> <p>II. Area of agricultural land in Manatuto benefitting from project interventions. (baseline 0, target 3,371 has)</p>	<p>I. Total no. of direct beneficiaries from more resilient physical and natural assets. Gender disaggregated. (baseline 0, target TBD)</p> <p>II. Area of agricultural land benefitting from project interventions. (baseline 0, target TBD)</p>	<p>Project progress reports and project completion report (outcome and end-term surveys under monitoring and evaluation system).</p>	
<p>Output 1.1.2: Livelihoods and sources of income of vulnerable populations diversified and strengthened.</p>	<p>III. Total no. of direct beneficiaries in Manatuto with diversified and strengthened livelihoods and sources of income. Gender disaggregated. (baseline 0, target 37,130)</p> <p>IV. Livelihood capital of 70% of households in Manatuto project areas increased by 10% (2024 baseline: 0)</p>	<p>III. Total no. of direct beneficiaries with diversified and strengthened livelihoods and sources of income. Gender disaggregated. (baseline 0, target TBD)</p>	<p>Project progress reports and project completion report (outcome and end-term surveys under monitoring and evaluation system).</p>	

	V. At least 20% farming households (of which 10% are households headed by women) in Manatuto reported improved access to markets (2024 baseline: 0)			
OBJECTIVE 3: Foster enabling conditions for effective and integrated climate change adaptation				
Outcome 3.2 Institutional and human capacities strengthened to identify and implement adaptation measures				
Output 3.2.1 Capacities strengthened to identify, implement and/or monitor adaptation measures	VI. Number of people trained or made aware of climate change impacts and appropriate adaptation responses. (baseline 0, target 5,000) (40% women)	IV. Number of people trained or made aware of climate change impacts and appropriate adaptation responses. (baseline 0, target TBD) (40% women)	Project progress reports and project completion report (outcome and end-term surveys under monitoring and evaluation system).	

A = assumption, m³ = cubic meter, PMO = project management office, Q = quarter.

- ^b Livelihood capital will be measured based on a composite asset index that will comprise a valuation of household mobile and immobile assets and net income.
- ^c The gender-responsive and inclusive water infrastructure plans will take into account different needs of men and women.
- ^d The 2019 agriculture census estimated that 28,000 (80%) of the 35,000 households in the target municipalities were engaged in agriculture and agroforestry.
- ^e Gender- and socially inclusive village landscape management regulations will provide for (i) equitable access to credit information, productive assets, and training; (ii) participation in decision-making at all levels of agricultural production and value chains; and (iii) direct benefits from income-generating opportunities stemming from the Community-Based Natural Resource Management Project and project activities for women and other marginalized farmer groups.
- ^f Information will be gender disaggregated and take into account different needs of men and women.

ANNEX D: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)

Provide detailed funding amount of the PPG activities financing status in the table below:

Project Preparation Activities Implemented	GETF/LDCF/SCCF Amount (\$)		
	Budgeted Amount	Amount Spent To date	Amount Committed
Total	0.00	0.00	0.00

ANNEX E: PROJECT MAP AND COORDINATES

Please provide geo-referenced information and map where the project interventions will take place

Location Name	Latitude	Longitude	GeoName ID
Dili	-8.553681	125.578409	

Location Description:

Dili, Timor Leste

Activity Description:

Project Area

Location Name	Latitude	Longitude	GeoName ID
Manatuto	-8.76725	125.934066	

Location Description:

Manatuto, Timor Leste

Activity Description:

Project Area

Please provide any further geo-referenced information and map where project interventions are taking place as appropriate.

1: Showing location of Timor-Leste ('East Timor') within the Asia-Pacific region. The capital, Dili, is located at:
Coordinates: 08°33'13"S 125°34'42"E.

Information on Dili is provided as the nation's capital. No 'on-the-ground' activities will take place in Dili.

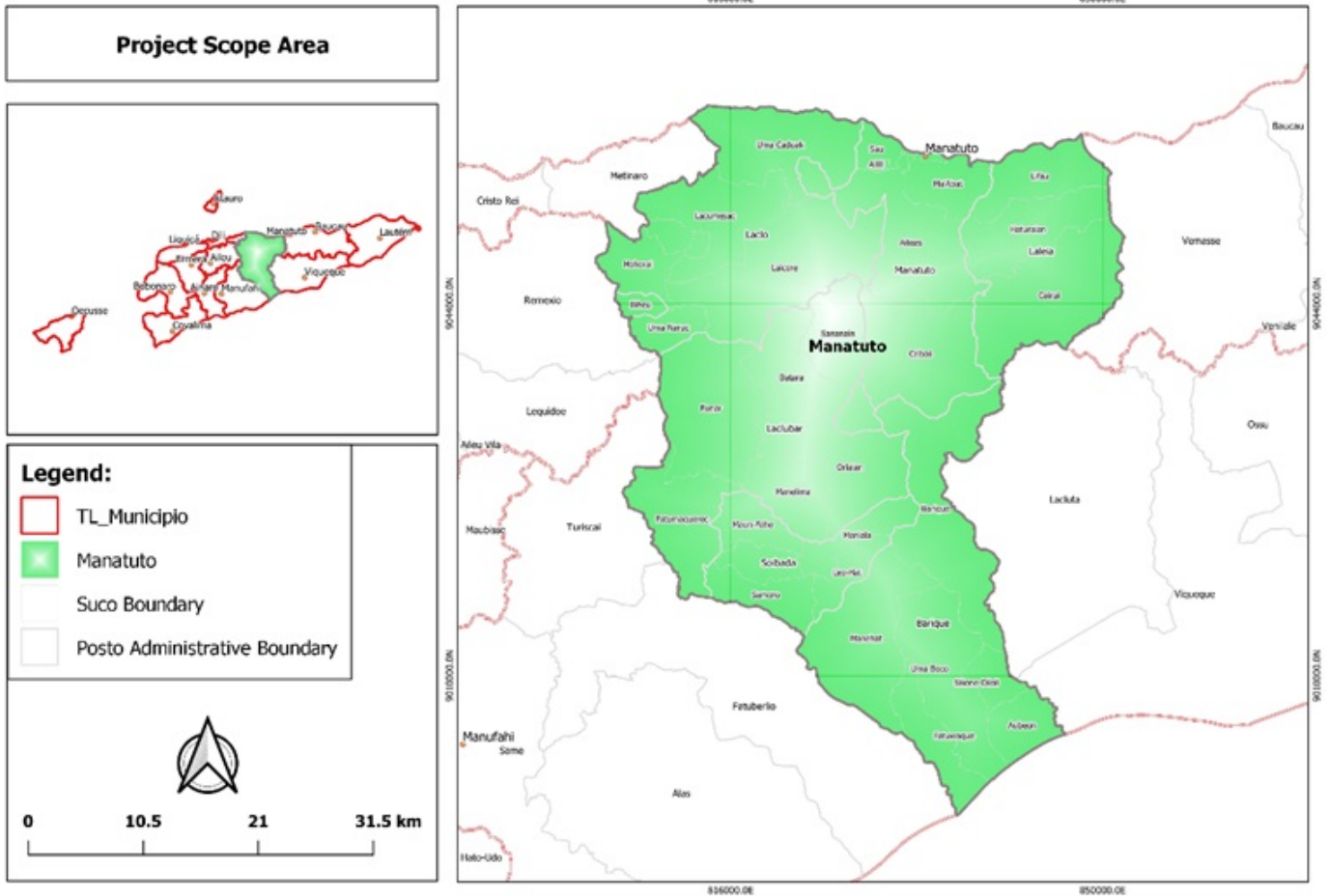
The capacity development under Project Outputs (1.6) Climate adaptive farm management and market information system) and 1.7 (Knowledge and information generated through farm management and market information system disseminated) has a nationwide focus. This capacity will be established in Dili, and available for use for replication, dissemination and sustainability nationwide.

Also, as in future, under WHAIP (ADB financed), activities will take place in several municipalities across Timor-Leste, and the Project Management Office should be situated in Dili.



Source: BBC website (<https://www.bbc.com/news/world-asia-pacific-14919009>) accessed 19 August 2024

2. Showing Manatuto Municipality – the intervention Municipality for the first, RRLIP, phase. In this Phase, all on-the-ground activities will take place in Manatuto. Activities will be in all Sucos across the Municipality. Manatuto town, the administrative center of the Municipality, is located at the following coordinates: 8°30'44"S 126°00'57"E



Source: ADB Technical Assistance Team (TA Project no.: 55139-001)

ANNEX F: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

Attach agency safeguard screening/assessment report(s), including ratings of risk types and overall project/program risk classification as well as any management plans or measures to address identified risks and impacts.

Title

24-08-30 Annex F - TIM RRLIP Environmental Screening Procedure

24-08-30 Environmental and Social Safeguards

ANNEX G: BUDGET TABLE

Please explain any aspects of the budget as needed here

Indicative Project Budget Template

Expenditure Category	Detailed Description	Component (USD thousands)						Total (USD thousands)	Responsible Entity (Executing Entity receiving funds from the GEF Agency)[1]
		Component 1	Component 2	Component 3	Sub-Total	M&E	PMC		
		Outcome 1	Outcome 2	Outcome 3					
Works					0	0	0	0	
Goods					0	0	0	0	
Vehicles	LDCF makes no contribution, covered by co-financing				0	0	0	0	
Grants/ Sub-grants					0	0	0	0	
Revolving funds/ Seed funds / Equity					0	0	0	0	
Sub-contract to executing partner/ entity					0	0	0	0	
Contractual Services – Individual					0	0	0	0	
Contractual Services – Company								0	
GEF/LDCF will contribute to the contracts listed to the right. All other costs of these contracts are covered by co-financing. For details of activities to be supported, see Annex I.c and Annex I.d	Water Harvesting and Flood Protection Infrastructure Average contract size is \$50,000 – \$100,000 based on the village household population and structure design Total number of contracts 25-30		2050		2050	0	0	2050	Ministry of Rural Development and Community Housing (MRDCH)
	Climate-Resilient Agroforestry and Farming Systems and Farm Linkage related development Average contract size: between \$2,000 – \$50,000 based on the village household population and type of activity Total number of contracts ~ 25			900	900	0	0	900	MRDCH
International Consultants		350	200	200	750			750	MRDCH
GEF/LDCF will contribute to costs of the technical expertise listed to the right. All other costs of these experts are covered by co-financing. For details of activities to be supported see Annex I.f.	Agriculture & Rural Livelihood Specialist				0			0	
	Rural Water and Infrastructure Engineer				0			0	
	Social Safeguards & Gender Specialist				0			0	
	Climate & DRM Specialist /d				0			0	
International Consultants	LDCF Contribution to Project Manager Team Leader						218	218	MRDCH

Local Consultants		250	100	100	450			450	MRDCH
GEF/LDCF will contribute to costs of the technical expertise listed to the right. All other costs of these experts are covered by co-financing. For details of activities to be supported, See Annex I.f.	Agriculture & Rural Livelihood Specialist				0			0	
	Rural Water and Infrastructure Engineer				0			0	
	Implementation Support Coordinator /f				0			0	
	Training Facilitators				0			0	
	Social Safeguards & Gender Specialist				0			0	
	Environment Safeguard Specialist				0			0	
	GIS Specialist				0			0	
	Climate & DRM Specialist				0			0	
	GIS & Autocad Specialist				0			0	
		0	0	0	0			0	
					0			0	
Local Consultants	LDCF Contribution to M+E specialist					70		70	
Salary and benefits / Staff costs	LDCF makes no contribution, covered by co-financing				0			0	
Trainings, Workshops, Meetings	Includes Start-Up Workshop, Annual project review & planning workshops, Baseline surveys, Final impact survey, output surveys, and training	150	0	0	150			150	MRDCH
Travel	Incorporated into costs of consultants above	0	0	0	0			0	
Office Supplies	LDCF makes no contribution, covered by co-financing	0	0	0	0			0	
Other Operating Costs	LDCF makes no contribution, covered by co-financing	0	0	0	0			0	
								0	
Grand Total		750	2350	1200	4293	70	218	4588	