

Country programme

Democratic Republic of Timor-Leste

1 February 2019





COUNTRY PROGRAMME

DEMOCRATIC REPUBLIC OF TIMOR-LESTE



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GREEN CLIMATE FUND
MARCH 2019



Republic Democratic of Timor-Leste

Optional: Include foreword by a relevant official authority on the scope and objective of the Country Programme and GCF engagement (Max one page)

1. Country Profile

Geographical location	Eastern end of Lesser Sunda archipelago, between latitude 8'15 and 10'30 south and longitudes 124'50 and 127'30 east
Land area	15,954 square kilometres
Population	1,261,407 ¹
Types of climate	Timor-Leste is a tropical country with little variability in climate throughout the year. The mean monthly temperature is 27 degrees Celsius in coastal areas and 25 degrees Celsius in highlands. December to April/May: Wet season May/June to November: Dry season
GHG emissions profile	1,483 Gg CO ₂ e ²
Key emitter sectors	Agriculture, energy, land-use change & forestry, waste ³
Key climate risks	<ul style="list-style-type: none"> • Lower and less intense rainfall • Temperature increase by around 0.3-1.2 degrees Celsius by 2030 and around 0.9-3.6 degree Celsius by 2070.⁴ • Increase in the inter-annual variability of the Asian monsoon rainfall • The sea level is predicted to rise around 18-79cm by 2095.
Vulnerable sectors	<ul style="list-style-type: none"> • Agriculture and livestock • Water
NDA/FP	National Directorate of Climate Change. Mr. Augusto Manuel Pinto, National Director of Climate Change Department and Focal Point for GCF

¹ Population and Housing Census 2018 Results, General Directorate of Statistics, accessed June 16, 2018, http://www.statistics.gov.tl/sched_announcement/population-and-housing-census-2018-results/

² Timor's State Secretariat for Environment (2014). Timor-Leste's Initial National Communication, p. 22.

³ Ibid, p. 9

⁴ Initial National Communication 2014, p. 64



National/Regional AEs	Regional – Asian Development Bank (ADB) National – None currently
International AEs	<ul style="list-style-type: none"> Food Agriculture Organization of the United Nations (FAO) United Nations Development Programme (UNDP) United Nations Environment Programme (UNEP) World Meteorological Organization (WMO) Conservation International (CI)
Potential AEs nominated	Yet to be decided

1.1 Climate change profile

- *Climate scenarios (projections from national communication for medium and long-term climate scenario, basically temperature and precipitations; if available aridity index)*

The mean temperature in Timor-Leste is expected to increase by around 0.3-1.2 degrees Celsius by 2030 and around 0.8 – 3.6 °C by 2070 as a result of climate change⁵. Rainfall in the wet season is expected to increase by 20 per cent by 2070⁶.

- *Vulnerability profile (climate drivers, risks, impacts and key vulnerabilities, including sectors, systems, ecosystems and populations at risk)*

Climate change is expected to have a range of significant impacts in Timor-Leste, including altering rainfall patterns, altering the onset of seasons, sea level rise, and increasing the intensity and the frequency of extreme climate events. These impacts are all expected to have negative impacts on agriculture, health and water resources.

- *Climate change threats for the economy, growth, productive sectors*

Timor-Leste is largely agrarian economy with over 80 per cent of the population dependent on agriculture as the main source of income. It is expected that climate change impacts such as increased air temperature, changes in rainfall pattern and intensity, etc. will decrease and degrade agriculture productivity and the livelihoods of the communities. Climate change is also expected to impact domestic water supply, increase costs of water treatment, and increase frequency of flooding. The later impact is likely to have significant health impacts, such as increasing waterborne, vector-borne diseases and other diseases and infections⁷. Climate change is also expected to impact infrastructure, including electricity and telecommunications infrastructure, roads, bridges and buildings like public buildings, schools and hospitals.

- *Key emitter sectors and related mitigation challenges*

Timor-Leste's GHG emissions are amongst the smallest in the world contributing only 0.003% of the total global emissions⁸. The graph below shows a breakdown of Timor-Leste's emissions by sector.

⁵ Initial National Communication 2014, p. 64

⁶ Ibid, p. 64

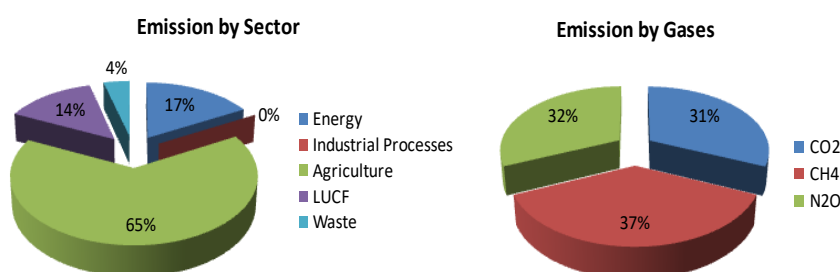
⁷ Ibid, p. 31-32

⁸ Timor-Leste's Intended Nationally Determined Contributions (2016), p. 7



Emissions by sector are as follows:⁹

1. Agriculture is responsible for 65 per cent of Timor-Leste's total GHG emissions. Emissions occur as a result of: (i) forest and grassland conversion; (ii) enteric fermentation; (iii) emissions from agricultural soils; (iv) manure management; v) other emissions from LUCF, changes in forest and other woody biomass stocks; and (vi) rice cultivation.
2. Energy is responsible for 17 per cent of total GHG emissions.
3. Land Use Change and Forestry (LUCF) is responsible for 14 per cent of total GHG emissions. Between 2003 and 2012, approximately 184,000 ha of forest were lost due to unsustainable practice such as deforestation. The loss of the forest is estimated to be continuing at a rate of 14,000 ha per year.
4. Waste is responsible for 4 per cent of the total GHG emissions. These occur primarily as a result of un-managed, open burning and wastewater treatment from municipal solid waste.



1.2 Development profile

- *Include information on GDP, growth rate, GNI/capita, HDI, domestic credit levels, ease of doing business and other relevant criteria*

Timor-Leste's GDP per capita is \$1,299 (US Dollars) and GNI per capita is \$2,244 (US Dollars)¹⁰. GDP fell in 2017 to minus 1.8% due in part to adjustment in government expenditure. This trend is expected to continue in 2018. Importantly offshore petroleum production also declined in 2017. A significant agreement relating to Timor-Leste's oil resources was recently signed between the Governments of Timor-Leste and Australia¹¹. This agreement is expected to provide increased security for future offshore petroleum production.

- *Development prospect, macro-economic and fiscal circumstances and strategies, poverty reduction strategies, low emission and clean energy policies/ strategies, infrastructure investment policies (e.g. related to urban development and transport), adaptation and risk management policies/strategies, and emerging green growth strategies (or the like)*

Since independence in 2002, Timor-Leste's social and economic policies have focused on alleviating poverty to address the immediate needs of our people, consolidating security and stability, and providing a foundation for nationhood through building institutions of State. This ongoing process of peace building and state building has been necessary to create a base from which Timor-Leste can address our people's health and education needs and work towards the elimination of extreme poverty. At the same time, climate change presents serious environmental and political challenges

⁹ Ibid, p. 10

¹⁰ Timor-Leste Economic Report, World Bank, March 2018

¹¹ Maritime boundary treaty signing press conference with Timor-Leste, New York, March 7, 2018, accessed on: June 18 2018, <http://www.gfm.tl/wp-content/uploads/2018/03/Treaty-signing-press-conference-with-Timor-Leste-Transcript-07-Mar-2018-Bishop-MP.pdf>



for Timor-Leste. The principle of sustainable development and the imperative to consider the needs of future generations is particularly relevant to the climate change threat as it is the Government's responsibility to ensure that when we make decisions today we are taking into consideration the impact of those decisions on future generations.

➤ ***Needs (financial, technology and capacity building) - (2 lines max)***

As an LDC, Timor-Leste's ability to pursue climate change adaptation and mitigation actions is dependent on the provision of capacity building, finance, and technology transfer. In particular, sufficient, predictable and sustainable finance. Funding is required to amongst other things support national research and development efforts as well as to building human and institutional capacity.

1.3 Climate change policy response

Since independence in 2002 Timor-Leste has made a number of important commitments, including ratifying the:

- United Nations Framework Convention on Climate Change (UNFCCC) (2006);
- Kyoto Protocol (2008);
- Paris Agreement (2016);
- Kigali Amendment to the Montreal Protocol;
- United Nations Convention on Combating Desertification (UNCCCD);
- United Nations Convention on Biological Diversity (UNCBD); and
- Vienna Convention and its Protocol

Timor-Leste has also produced the following documents, including the:

- Initial National Communication (INC) to the UNFCCC (2014). Timor-Leste's Second National Communication (SNC) is currently being developed;
- Intended Nationally Determined Contribution (INDC) (2016)
- National Adaptation Programme of Action (NAPA) (2010)

Table 1: Summary of actions listed in Timor-Leste's NDC		Estimated resources required
Conditional	<p>Adaptation:</p> <ul style="list-style-type: none"> • Food security: Reduce the vulnerability of the farmers and pastoralists to increased drought and flood events by improving their capacity to plan for and respond to future climate conditions and improve national food production <ul style="list-style-type: none"> ○ Develop integrated agroforestry and watershed management including climate change dimensions ○ Implement integrated, sustainable land management promoting fixed/permanent agriculture, reduced burning, reduced erosion and increase soil fertility ○ Reforestation of degraded lands to prevent landslides and provide a sustainable fuel wood source in priority areas with high vulnerability to climate-related risks 	As an LDC, Timor-Leste will be dependent on the receipt of support in the form of technology transfer, finance and capacity building.



- Improve physical infrastructure and natural vegetation to prevent landslides in hill sites, roads and river banks
- Pilot a project on sustainable agriculture and forest management that increases resilience and reduces climate related impacts of shifting cultivation on and unsustainable upland farming practice
- Water Resources: Promote integrated water resource management
 - Build climate proofed and environmental sustainable infrastructure to protect water resources in order to provide safe water access for food production, sanitary uses, ecosystems and industry development, and water supplies during climate change extreme event periods
 - Enhance government and community strategies to respond to drought exacerbated by climate change
 - Create and enhance water harvesting models, water distribution and management systems at all levels to avoid water shortages due to climate change.
 - Control water use by industry and standardize water pollution controls, including for waste management associated with coffee processing
- Human health: Enhance capacity of the health sector to anticipate and respond to changes in distribution of endemic and epidemic climate-sensitive diseases, and reduce vulnerability of the population to infection in areas at risk from expansion of climate-related diseases
 - Establish an integrated disease surveillance, response and early warning system
 - Promote evidence-based decision making, health policy formulation and program design
 - Review existing guidelines, standard operating procedures, etc. to consider climate change
 - Establish a health cluster to prepare and respond to emergency events and disasters
- Natural disasters: Improve institutional and staff capacity in the disaster sector in relation to climate change
 - Integrate climate risk information into traditional disaster risk reduction and management
- Forests, Biodiversity and Coastal Ecosystem Resilience
 - Maintain mangrove plantations and promote awareness raising to protect coastal ecosystems from sea level rise
 - Include ecosystem management in national planning
 - Enhance coastal resilience with mangrove plantation and protection
- Livestock production
 - Improve the planning and legal framework for promoting sustainable and balance food for livestock production under changing climatic conditions



	<ul style="list-style-type: none"> Physical infrastructure: Improve regulations and standards for climate resilient infrastructure <ul style="list-style-type: none"> Review existing laws, regulation and standards Pass new legislation to strength national development through improved regulation, quality of building material, adapted building codes and practices, and law enforcement. Construction of sea walls in vulnerable coastal areas to protect from sea level rise Oil and gas production: Strengthen and protect valuable offshore oil and gas infrastructure against climate change impacts <ul style="list-style-type: none"> Protect offshore infrastructure against strong wave damage that impacts the distribution of gas and oil, reduce accidents and destruction of offshore oil and gas infrastructure, including through early warning systems, improved data on frequency and intensity of events, and mechanisms to protect equipment 	
	<p>Mitigation:</p> <p>Energy</p> <ul style="list-style-type: none"> Renewable and low carbon energy <ul style="list-style-type: none"> Achieve higher efficiency and less carbon emissions from power generation through the use of hydro at different scales, biomass, biogas, solar PV, wind power at different scales, natural gas, etc. Rural electrification <ul style="list-style-type: none"> Enhance rural electrification using renewable energy Energy efficient cook stoves <ul style="list-style-type: none"> Reduce dependency on fossil fuels for cooking Reduce the average amount of fuel-wood used for cooking in private households (and thereby deforestation) by introducing fuel substitution and support the use of energy efficient cook stoves. Energy efficiency <ul style="list-style-type: none"> Promote the use of higher energy efficiency technologies in end users (efficient lamps, efficient motors, building codes and efficient energy systems. Energy efficiency in the transportation sector <ul style="list-style-type: none"> Continue to promote and implement the current Decree Law (No.30/211) on used vehicles which are imported into Timor-Leste to be less than 5 years of factory production. Public transport <ul style="list-style-type: none"> Promote use of public transport by enabling convenient and reliable access to buses or micro-buses, constructing appropriate facilities including bus stops, terminals, and establish regulations to control the transportation system. <p>Agriculture</p> <ul style="list-style-type: none"> Livestock management <ul style="list-style-type: none"> Promote biogas and composting for the reduction of GHG 	<p>As an LDC, Timor-Leste will be dependent on the receipt of support in the form of technology transfer, finance and capacity building.</p>



	<p>emissions</p> <ul style="list-style-type: none"> • Sustainable agriculture <ul style="list-style-type: none"> ◦ Reduce slash and burn practices by introducing permanent agriculture with improved management practices and sustainable, climate-smart agricultural technologies and processes <p>Forestry</p> <ul style="list-style-type: none"> • Rehabilitation of degraded lands <ul style="list-style-type: none"> ◦ Sustainable forest management and land degradation neutrality • Customary forestry <ul style="list-style-type: none"> ◦ Promote customary practices like 'tara bandu' and better management of forestry resources through natural regeneration. • Mangrove plantations <ul style="list-style-type: none"> ◦ Enhance coastal resilience and explore carbon sequestration in mangroves • REDD+ <ul style="list-style-type: none"> ◦ Explore opportunities to participate in international REDD+ programmes • Protected areas <ul style="list-style-type: none"> ◦ Sustainable management of 44 protected areas • Afforestation and Reforestation <ul style="list-style-type: none"> ◦ One million trees are expected to be planted every year based on the national strategic plan <p>Waste</p> <ul style="list-style-type: none"> • Manage landfill and landfill gas <ul style="list-style-type: none"> ◦ Reduce unspecified treatment of municipal solid waste (MSW) by increasing collection at MSW sites and develop systems for capturing gas at MSW sites. • Composting resource recovery and recycling <ul style="list-style-type: none"> ◦ Reduce open burning through composting and applying 3R • Improve incineration technology <ul style="list-style-type: none"> ◦ Improve technology of old incinerators for clinical waste from hospitals, etc. • Hydro chlorofluorocarbon phase-out and management plan 	
Unconditional	None	

2. Country Agenda and GCF Engagement

2.1 Institutional arrangements

Timor-Leste has established a GCF Focal Point as an interim arrangement while work to establish the National Designated Authority (NDA) is finalized. It is proposed that the NDA be established as an independent authority located under the



Secretary of State for Environment (SSE) to be led by a Director General position. The NDA will be supported by technical staff who will act as the secretariat for all GCF related matters. The SSE is in the process of seeking approval from the Council of Ministers for the legal establishment of NDA, with the objective of having the arrangements operational by the beginning of 2019.

A Special Committee for Climate Finance (SCCF) will also be established to serve as the mechanism for Government coordination on the GCF. The SCCF will be comprised of Directors-General, Directors and Chief of Departments of relevant ministries. The permanent membership of the Committee will comprise of the Ministries of Environment, Finance, and Foreign Affairs, while all other Ministries will have the option to participate in the Committee depending on the issues being considered.

The SCCF will be chaired by the NDA who will report on the decisions of the SCCF directly to the Vice Minister responsible for environment portfolio. The SCCF's role will extend to providing oversight of Timor-Leste's broader climate finance portfolio. Recommendations of the SCCF will be communicated by the NDA to the SSE. The SSE will brief the Council of Ministers on the decisions of the SCCF and seek their approval where necessary for the final approval and submission of projects. The Council of Ministers is required to approve any project with B risks and above.

The organizational arrangements are as per figure 1 below.



Figure1: Organizational structure for GCF



The Working Group on Climate Change (WGCC) will be the primary mechanism for consulting with stakeholders. The membership includes government Ministries, international organizations, and civil society. The WGCC is an existing body used for consultation on climate change matters. It was officially recognized by the Government in January 2017 through the issuance of a Ministerial Decree.

Table 2: Relationships with existing Accredited Entities and relevant partners		
Entity/ Partner Name	Area/s of focus	Engagement in country
Catholic Relief Services (CRS)	Coping with unpredictable weather	The CRS has an in-country presence
Conservation International (CI)	Biodiversity and ecosystem services Food and nutrition security Forest management	CI has an in-country presence and is using national implementation.
European Union	Climate-resilient technologies on food, water and energy Watershed security and Coastal Protection	The EU has an in-country presence and is partnering with international non-government organizations and UN Agencies such as FAO, GIZ and Camoes to implement climate-related projects in the country.
Food & Agriculture Organization of the United Nations (FAO)	Conservation Agriculture Forest management	FAO has an in-country presence and is using national implementation.
GiZ	Agroforestry	GIZ has an in-country presence and is using national implementation.
USAID	Agriculture and natural resource management. Food and Nutrition security	USAID has an in-country presence and is using national implementation.
United Nations Development Programme (UNDP)	UNDP is implementing a range of projects in Timor-Leste across a range of topics, including resilience building for infrastructure and communities, capacity building for national reporting, promoting bio-energy and biomass use, and using nature-based approaches to coastal protection.	UNDP has an office in Dili and works closely with government departments to implement projects.



WaterAid	Water sanitation and hygiene	WaterAid has an in-country presence and is using national implementation
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2.1 Roles and contributions of key stakeholders

The key sets of stakeholders in Timor-Leste for the Green Climate Fund are:

- Government Ministries
 - Ministry of Finance
 - Ministry of Social Solidarity
 - Ministry of Agriculture and Fisheries
 - Secretary of State for Environment
 - Ministry of Public Works
- International intergovernmental agencies
 - Asian Development Bank
 - United Nations Development Programme (UNDP), Food Agriculture Organizations (FAO), United Nations Environment Programme (UNEP) and GIZ.
- National-based non-government organisations
 - Permaculture Timor-Leste (PERMATIL)
 - Haburas Foundation
 - Raebea
 - Hiam Health

These stakeholders have been extensively consulted in the development of Timor-Leste's first country programming framework. These consultations comprised formal workshops with all stakeholders, follow up workshops and meetings with government stakeholders, and on-going informal consultation with key, senior stakeholders in the government.

Three sets of formal national consultations were conducted.

- Consultations on the role and location of the National Designated Authority. The workshop was held in August 2017.
- Consultation on the development of national climate investment priorities, coordination mechanisms within the government, and stakeholder consultation processes. The workshop was held on 26 October 2017.
- Consultation on climate mainstreaming and arrangements for monitoring and evaluation (M&E) under the GCF. The workshop was held on 16 May 2018.

In addition, a consultation process was run on 11 December 2017 to discuss climate investment priorities and a further consultation on the investment priorities with government stakeholders only was held on 16 May 2018.

2.2 Identification of country priorities for the GCF

In early-2018 the Government of Timor-Leste undertook a comprehensive, first-principles process to agree a set of national climate investment priorities. A set of adaptation priorities had previously been established in 2010 as part of the process to establish a National Adaptation Plan of Action (NAPA). This information was subsequently also used for Timor-



Leste's NDC. Mitigation actions have not previously been prioritised. The new prioritisation process was commenced with the goal of re-examining adaptation priorities and establishing mitigation priorities to ensure consistency with the Timor-Leste's current national priorities, to make use of the latest information available on the impacts of climate change, and to reflect the emergence of the Green Climate Fund as the key funding source for climate investment.

Full details of the prioritisation process are available at Annex A. The priority activities were then converted into a short list of indicative project ideas which is summarised below. See Annex B for full details.

Adaptation

1. Build climate proof and environmentally sustainable infrastructure to protect water resources, including enhancing water harvesting, distribution and management systems
2. Implement integrated sustainable land management which promote fixed/permanent agriculture, reduce crop burning, reduce erosion, and increase soil fertility.
3. a). Reforest degraded lands and provide a sustainable fuel wood source to areas with high vulnerability b). Develop integrated agroforestry and watershed management
4. Improve physical infrastructure and natural vegetation methods to prevent landslides in hill sites, roads and river banks that are made vulnerable by climate change.
5. Enhance government and community strategies to respond to drought exacerbated by climate change
6. Maintain mangrove plantations and promote awareness raising to protect coastal ecosystems from impacts of sea level rise

Mitigation

1. Reduce GHG emissions from the waste sector, including through improved management of landfill, composting, recycling and resource recovery.
2. Climate-smart agriculture

3. Country Portfolio

Table 3: Country projects/programmes pipeline				
Project Title	Description	Accredited Entity		Submission timeframe
1. Enhancing Early Warning Systems to build greater resilience to hydro and meteorolial hazards in SIDS.	To sustainably enhance early warning systems in Timor-Leste, as well as Fiji, Papua New Guinea, Solomon Islands, and Vanuatu.	World Meteorological Organization (WMO)		To be determined No objection letter issued in February 2017
Fund level strategic impacts		Total financing:		Status
		GCF: USD 48 million for 5	Other: Not known	Funding proposal completed – awaiting submission by AE



FUND			countries		
Action		Lead		Timeline	
Funding proposal completed – awaiting submission by AE		WMO		To be determined	
Project Title	Description		Accredited Entity		Submission timeframe
2. Safeguarding communities and their physical and economic assets from climate induced disasters in Timor -Leste	The objective of the project is to safeguard vulnerable communities and their physical assets from climate change induced disasters and aims to address institutional, financial and legislative barriers to create climate resilient small-scale infrastructure.		UNDP		To be determined No objection letter issued in April 2017
Total financing:			Status		
Fund level strategic impacts:			GCF: USD 35.453 million	Other: USD 20.087 million	Funding proposal completed – awaiting submission by AE
Action		Lead		Timeline	
Funding proposal completed – awaiting submission by AE		UNDP		To be determined	

There are no other projects currently being advanced. Timor-Leste is in the process of developing a GCF project development manual. It is expected that the use of the recently agreed climate investment priorities and the use of the GCF manual will lead to the development of a pipeline of well targeted GCF projects.

Table 4. Country Readiness programme pipeline			
Title	Description	Delivery Partner	Submission timeframe
GCF Readiness Project - Outcomes 1 and 2	This first request for assistance from the GCF Readiness Programme targeted two broad areas: 1) establishing and strengthening the National Designated Authority; and 2) establishing strategic frameworks for engagement with the GCF, including preparation of a country programme.	UNDP	December 2018
		Total financing:	Status
		\$300,000	To be finalized by April 2019.



Accreditation pipeline

The Government of Timor-Leste is interested in establishing a national accredited entity. Investigations into which national entities may be the most suitable are at still at an early stage. It is expected that work to establish a national accredited entity will require a request for funds from the GCF Readiness and Preparatory Programme.

4. Monitoring and Evaluation

The Government of Timor-Leste welcomes this opportunity submits this first iteration of its Country Programme. The document represents the culmination of work undertaken over a number of months, including as part of the GCF Readiness and Preparatory Support Programme. Notable amongst this work was the process to develop strategic investment priorities. The country programme is expected to be a living document and will be updated in the future based on the country's needs. The instigation of any future review and update will come from the NDA and the Special Committee on Climate Finance will be closely consulted in the process.



Annex A: Process for prioritizing adaptation and mitigation actions

The Government of Timor-Leste undertook a comprehensive, first-principles based process to develop its climate investment priorities. This process was designed to develop a complete set of priorities that could potentially be developed under the Green Climate Fund, but that would also provide a wider view of the countries climate investment priorities for other sources of funding be they multilateral and bilateral.

The first step in the process was the compilation of a comprehensive stocktake of all existing climate related projects – both adaptation and mitigation. The stocktake captured a list of 27 adaptation activities and 18 mitigation activities. The process involved gathering information from a range of sources including Timor-Leste's Nationally Determined Contribution (NDC), National Adaptation Plan (NAP), detailed Ministerial budgets, and project documents from international organisations.

Using the stocktake of activities, a basic prioritisation process was undertaken of adaptation and mitigation activities. This process was undertaken to provide decision makers with an indicative list of the types of activities that could be prioritized. The prioritisation process was undertaken using ten variables, including whether the activity aligned with Timor-Leste's Strategic Investment Priorities, the degree of climate relevance, etc. The categories and the scoring system were approved for use by the Director of the National Directorate for Climate Change (NDCC).

A comprehensive prioritisation of adaptation priorities had already been undertaken in 2010, as part of the NAPA process. This information was carried over into the adaptation section of Timor-Leste's NDC. However, it was considered necessary at this time to re-examine the priorities that adaptation and mitigation activities are assigned to ensure consistency with current national priorities, to make use of the latest information available, and to reflect the emergence of the GCF as the key funding source for climate investments. Importantly, the climate investment prioritisation process also included mitigation actions, which had previously not been prioritised.

A government consultation was held in Dili on 26 April 2018 to rank the climate investment priorities for both adaptation and mitigation. The workshop was attended by senior officials from all relevant government Ministries. Participants were presented with information on the process undertaken to date, including the stocktaking process that identified relevant climate change adaptation and mitigation actions. Participants were also informed about work to initially assess activities according to specific criteria (such as alignment of activity with Timor-Leste Strategic Development Plan, climate relevance, existing funding (government and development partners) and other key set of criteria as per GCF requirements). Finally, participants were informed about the scoring and assessment system developed in preparation for the workshop, which was suggested as an initial reference point for the workshop discussions.

A full list of documents was provided to all workshop participants five working days ahead of the workshop. Participants were also briefed ahead of the workshop of the objectives of the process. The participants were randomly divided into four groups of five people each group to review the document and decide on a ranking based on the information provided. It was decided during the workshop by the participants that that adaptation and mitigation priorities should be considered and ranked separately. It was emphasized to participants that in ranking the priorities it was important to identify climate change focused, as this is an essential first threshold applied by the GCF in assessing projects.



Each group was assigned the task of determining a priority ranking for the various activities based on the information given and their technical expertise and perspective. The activities were ranked by each group from what they considered the most to the least important. In total, there were 26 adaptation activities considered and 16 mitigation activities. Each activity was then assigned a total score from the four groups with the highest rank assigned to the activities with the combined lowest scores.

The activity descriptions used in the climate investment prioritisation process were taken from the stocktaking exercise and represent the original descriptions provided. In recognition of the fact that these descriptions provide only minimum detail it was decided to elaborate the top ten activities with simple descriptions (one or two paragraphs maximum) to provide some minor additional detail to accredited entities on the possible scope of project ideas.



Annex B: List of priority adaptation projects

Rank	Description of Activity	Project Ideas
1 & 2	Build climate proof and environmentally sustainable infrastructure to protect water resources, including enhancing water harvesting, distribution and management systems	<p>Timor-Leste's water supply is increasingly being negatively affected by changes in rainfall timing, frequency, duration and volume caused by climate change.¹² For example, the drier region on the northern coast of the country is expected to expand and areas with a water deficit are expected to increase¹³. Currently in Timor-Leste 300,000 people (2.6% of the population) do not have access to safe water and 700,000 people (6% of the population)¹⁴ do not have access to adequate sanitation.¹⁵ Access to water is especially problematic in the central highlands, eastern and southwestern part of the country.¹⁶ Impacts of climate change on water supply are being exacerbated by large increases in population throughout the country.¹⁷ The Government considers it is essential that actions be taken to climate proof the country's water supply for the current and projected future impacts of climate change.</p> <p>The Government is interested in addressing the issue of changing rainfall patterns including through increasing water storage. Dams of varying scales could be built to store rainwater during Timor-Leste's abundant rainy season, with this water used for domestic use, livestock and farming needs during dry seasons.¹⁸ Various options for establishing dams have been previously considered but not progressed.¹⁹ As well as harvesting water during the rainy season dams could be used to better utilise Timor-Leste's extensive river system. The Government also plans to increase water storage through establishing systems to create and enhance water harvesting, distribution, and management, including improved rainwater harvesting from homes and community infrastructure in local and remote communities.²⁰</p> <p><i>The top two priority activities both related to water management. They have been combined here into a single project. This is just illustrative. Two separate projects could also be</i></p>

¹² RDTL, 2018. Vulnerability and Adaptation in a Changing Climate: A Report Prepared for Timor-Leste's Second National Communication to the UNFCCC (draft)

¹³ RDTL, 2014. Initial National Communication to the UNFCCC. p. vi.

¹⁴ RDTL, 2015. Population and Housing Census 2015 Preliminary Results

¹⁵ RDTL, 2018. Vulnerability and Adaptation in a Changing Climate: A Report Prepared for Timor-Leste's Second National Communication to the UNFCCC (draft)

¹⁶ Ministry of Interior, the Ministry of Agriculture and Fisheries, the Ministry of Social Solidarity, the Ministry of State Administration, the Ministry of Commerce, Industry and Environment, the Ministry of Finance and the World Food Programme, 2016: Consolidated Livelihood Exercise for Analyzing Resilience

¹⁷ RDTL, 2018. (draft)

¹⁸ Food and Agriculture Organization of the United Nations. Timor-Leste – geography, climate and population: http://www.fao.org/nr/water/aquastat/countries_regions/TLS/

¹⁹ RDTL, 2018. Program of the IV Constitutional Government [2007-2012]: <http://timor-lesste.gov.tl/?cat=39&lang=en&bl=16>

²⁰ RDTL, 2011, Strategic Development Plan



Annex B: List of priority adaptation projects

Rank	Description of Activity	Project Ideas
		<i>developed.</i>
3	Implement integrated sustainable land management which promote fixed/permanent agriculture, reduce crop burning, reduce erosion, and increases soil fertility.	<p>The Government considers sustainable land management as an important component of building resilience to climate change impacts, especially in remote and vulnerable communities. A large proportion of Timor-Leste's population (more than 70%), especially in small local communities, is dependent on agricultural production for their nutrition needs and as a source of income.²¹ Agriculture production in Timor-Leste is being increasingly negatively affected by climate change which is leaving communities increasingly vulnerable.²² For example, 78% of households were negatively impacted by drought either through delayed plantation, crops not growing or sick and dying animals.²³</p> <p><i>Consideration could be given to incorporating mitigation components, including in relation to sequestration of soil carbon and reduction of emissions from crop burning</i></p>
4 & 6	Reforest degraded lands and provide a sustainable fuel wood source to areas with high vulnerability	<p>Climate change is leading to increasing areas of degraded land and forest areas throughout the country. For example, the impact of El Nino on the livelihood of communities, particularly in municipalities such as Baucau, Lautem, Viqueque, Covalima and Oecusse where the consequences are most severe.²⁴ It was estimated that, across these municipalities, more than 120,000 people are facing hardships and their livelihoods are at risk.²⁵</p> <p>Changing rainfall and temperatures are amongst other things leading to increased susceptibility to forest fires.²⁶ In an event that forest fire occurs may result in destruction</p>

²¹ RDTL, 2010. Timor-Leste Strategic Development Plan 2011-2030

²² RDTL, 2018.

²³ RDTL, 2018.

²⁴ Ministry of Interior, the Ministry of Agriculture and Fisheries, the Ministry of Social Solidarity, the Ministry of State Administration, the Ministry of Commerce, Industry and Environment, the Ministry of Finance and the World Food Programme, 2016: Consolidated Livelihood Exercise for Analyzing Resilience

²⁵ Ministry of Interior, the Ministry of Agriculture and Fisheries, the Ministry of Social Solidarity, the Ministry of State Administration, the Ministry of Commerce, Industry and Environment, the Ministry of Finance and the World Food Programme, 2016: Consolidated Livelihood Exercise for Analyzing Resilience

²⁶ RDTL, 2018. Vulnerability and Adaptation in a Changing Climate: A Report Prepared for Timor-Leste's Second National Communication to the UNFCCC (draft)



Annex B: List of priority adaptation projects

Rank	Description of Activity	Project Ideas
		<p>of vegetation, wildlife as well as a threat to homes of those residing nearby, and trees and plants may be gone as a result resulting in less clean air, and large amount of smoke also cause air pollution.²⁷ In Timor-Leste, a large portion of a municipalities including Aileu, Ainaro, Baucau, Ermera, Liquica and Viqueque are at high risk, while a small portion of few districts face even greater risk, especially Dili, Liquica and Manatuto.²⁸ Forest areas are currently being used by local communities for fuel wood. This is degrading forest areas and increasing emissions. The increasing population is exacerbating these impacts. Recent studies have shown that 9 out of 10 households rely on fuel wood.²⁹</p> <p><i>There may be opportunities to combine these project activities with activity 5 below as they address related issues.</i></p> <p><i>Consideration could also be given to incorporating mitigation components, including climate smart agriculture activities listed in the mitigation priorities below, or as part of a REDD+ strategy.</i></p> <p>Timor-Leste has experienced large losses of forest cover over several decades. It is estimated that around 1970s, half of the land in Timor-Leste was primary and secondary forest³⁰ but from 1972 to 1999 forest cover reduced by 30 percent.³¹ This significant reduction is attributed to unsustainable forest harvesting, forest clearing for farming as well as for fuel wood.³² Deforestation continues to be a serious concern and the issue has been highlighted in a recent vulnerability assessment.³³ Recent studies highlight widespread deforestation across a large number of municipalities, especially Lautem, Viqueque, Bobonaro, Covalima and Manufahi.³⁴</p>
	Develop integrated	Integrated agroforestry, potential projects could incorporate tree plantation into farming

²⁷ Conserve Energy Future: What are Wildfires: <https://www.conserve-energy-future.com/causes-effects-and-solutions-of-wildfires.php>

²⁸ RDTL, 2018.

²⁹ RDTL, 2018.

³⁰ With One Seed: Replenishing the planet – an Xpand Foundation initiative: www.withoneseed.org.au

³¹ RDTL, 2018.

³² RDTL, 2018.

³³ RDTL, 2018.

³⁴ RDTL, 2018.



Annex B: List of priority adaptation projects

Rank	Description of Activity	Project Ideas
	agroforestry and watershed management	<p>operations as part of forest and land conservation, increasing biodiversity on agriculture lands to restore wildlife and plant species, increasing knowledge of farmers on the impact of tree cover change on crop productivity, water, nutrients and livelihoods. In addition, current projects could be scaled up to incorporate other elements such as food security and resilient livelihood considerations.</p> <p>Conservative use and sustainable management of watershed resources to meet the needs of local population is a priority, especially for a country like Timor-Leste, where water is scarce during long dry season.³⁵ The country's groundwater is the major water resource and greatly exceeds the amount of water in springs, rivers and lakes.³⁶ Currently, the government of Timor-Leste is developing its National Water Supply Policy as part of the country's objectives to meet the targets of Sustainable Development Goal 6, which includes water, sanitation and hygiene.</p> <p>The Government of Timor-Leste, with its key stakeholders, has been investing through a number of programs for protection and rehabilitation of water resources, including water drinking, irrigation, ground and surface water. For example, an Urban Services Improvement Project, funded by the Asian Development Bank (ADB) to foster integrated water resources management and to save time spent on collecting water.³⁷ Further, WaterAid Timor-Leste and Care International are also working with the Government of Timor-Leste to build capacity of rural communities to manage finite water resource.³⁸ Future projects will need to ensure to integrate lessons learnt from these projects and others previously implemented.</p> <p>In addition, the Government is interested to examine options for establishing dams to store water from its 29 main rivers (12 in the north and 17 in the south) to be able to sustain farmers and their livelihood and daily needs during long dry season.³⁹</p>

³⁵ RDTL, 2018.

³⁶ World Bank, 2018: Community Agriculture and Watershed Management Project: <http://documents.worldbank.org/curated/en/188881475113279627/pdf/000012394-20150303133922.pdf>

³⁷ RDTL, 2018.

³⁸ WaterAid Timor-Leste: <https://www.wateraid.org/au/where-we-work/timor-leste>

³⁹ Food and Agriculture Organization of the United Nations: Timor-Leste – geography, climate and population: http://www.fao.org/nr/water/aquastat/countries_regions/TLS/



Annex B: List of priority adaptation projects

Rank	Description of Activity	Project Ideas
5	Improve physical infrastructure and natural vegetation methods to prevent landslides in hill sites, roads and river banks that are made vulnerable by climate change.	<p>Timor-Leste's infrastructure is vulnerable to the impact of climate change, in this case specifically is the infrastructure of houses, schools, health facility and roads. For example, in three municipalities such as Baucau, Ermera and Liquica are likely to be sensitive to flooding, landslides and erosion.⁴⁰ Further, number of houses in flood risk zones was high with 412 in Maubara, Liquica Municipality and 456 in Vemasse, Baucau Municipality.⁴¹</p> <p>The Government considers it is important to strengthen resilience of rural infrastructure to reduce climate risks as well as community resilience to climate induced natural disasters. This includes constructing supports for existing roads, use of natural vegetation and afforestation to support lands upper slope areas, and improved use of irrigation canals to improve drainage. A comprehensive process to map infrastructure vulnerable to current and expected future impacts of climate change is required.</p>
7.	Enhance government and community strategies to respond to drought exacerbated by climate change	<p>Rainfall patterns in Timor-Leste have changed significantly as a result of climate change.⁴² This is contributing to significant droughts affecting much of the country. Drought conditions are having a range of serious impacts on local communities, including households eating less preferred foods, skipping meals, and reduce meal portions to cope with food shortages. It was estimated almost 80% of households were negatively impacted either as a result of delayed plantation, crops not growing, or sick and dying animals due to lack of access to water and fodder.⁴³</p>
8.	Maintain mangrove plantations and promote awareness raising to protect coastal ecosystems from impacts of sea level rise	<p>Timor-Leste's coastline is being negatively impacted by the effects of climate change, including rising sea levels, erosion, salt water intrusion, inundation and flooding, especially along the northern coast such as Dili and Manatuto, and communities living in the low-lying areas such as Maliana and Suai in the southern coast.⁴⁴</p> <p>The Government of Timor-Leste considers that the maintenance and enhancement of</p>

⁴⁰ RDTL, 2018.

⁴¹ RDTL, 2018.

⁴² RDTL, 2018.

⁴³ RDTL, 2018.

⁴⁴ RDTL, 2017. Climate Change Policy – draft



Annex B: List of priority adaptation projects

Rank	Description of Activity	Project Ideas
		mangrove systems is an important element of coastline protection. Several small-scale projects are underway in this area and these could be scaled up. ⁴⁵ Possible activities could include sand dune protection, restoring wetlands and mangroves, replenishing beaches, building seawalls, rehabilitating lagoons and drainage systems, and improving watershed management will also help reduce flooding.

⁴⁵ UNDP, 2018. Climate Change Adaptation – Building Shoreline Resilience in Timor-Leste: <http://adaptation-undp.org/projects/building-shoreline-resilience-timor-leste>



Annex B: List of priority mitigation projects

Rank	Description of Activity	Project Ideas
1 & 2	Reduce GHG emissions from the waste sector, including through improved management of landfill, composting, recycling and resource recovery.	<p>Waste is an important source of greenhouse gas emissions in Timor-Leste accounting for ~4 per cent of total national emissions.⁴⁶⁴⁷ A range of unsustainable practices are contributing to the high level of national emissions, including that municipal solid waste is currently dumped in unmanaged solid waste disposal service, open burning of waste, and a lack of municipal wastewater treatment.⁴⁸ Although there is no baseline data on GHG emissions from landfill gas and composting, these areas have been identified due to undeveloped infrastructure and management of landfill and landfill gas.⁴⁹</p> <p>A range of Ministries are currently responsible for aspects of landfill management and greater coordination is necessary. It is expected that any project would address regulatory/legislative, licensing and policy issues, but also the development and operation of infrastructure. Further, in relation to composting of organic waste, the Catholic Relief Services (CRS) is one of few organizations that promotes composting of organic waste. CRS with its local partners, currently implementing composting organic fertilizer as part of the integrated agriculture program. The project is currently implemented in a number of municipalities including Baucau, Viqueque, Lautem, Dili and Liquica. This project and others provide valuable lessons learned.</p> <p><i>The top two priority activities both related to waste management. They have been combined here into a single project. This is just illustrative. Two separate projects could also be developed.</i></p>
3	Climate-smart agriculture	<p>GHG emissions from agriculture in Timor-Leste account for 65 per cent of national emissions. Agriculture production is dominated by smallholder and subsistence farming, with relatively low levels of production. Agriculture contributes approximately 19.8 percent of Timor-Leste's GDP.⁵⁰</p> <p><i>The agriculture sector is also significantly negatively impacted by climate change and several adaptation activities have been prioritised. Consideration should be given to developing projects that incorporate adaptation and mitigation elements, or at least ensure there is no conflict in the adaptation and mitigation objectives.</i></p>

⁴⁶ RDTL, 2014: Initial National Communication to the UNFCCC

⁴⁷ RDTL, 2016: Timor-Leste's Intended Nationally Determined Contributions (INDC)

⁴⁸ RDTL, 2016: Timor-Leste's Intended Nationally Determined Contributions (INDC)

⁴⁹ RDTL, 2014: Initial National Communication to the UNFCCC

⁵⁰ RDTL, 2018.