

Annex 6a

Environmental and Social Safeguards Report

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List of Acronyms

AWOS – Automated Weather Observing System
CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS – Convention on the Conservation of Migratory Species of Wild Animals
DIA – Certificate of Environmental Impact
EIA – Environmental Impact Assessment
ESS Screening – Environmental and Social Safeguard Screening
ESES Framework – Social, and Economic Sustainability Framework
EWS – Early Warning Systems
FPIC – Free, Prior, and Informed Consent
GCF – Green Climate Fund
IPPC – International Plant Protection Convention
MARPOL Convention – International Convention for the Prevention of Pollution from Ships
PMU – Project Management Unit
SRM – Stakeholder Response Mechanism
UNEP – United Nations Environment Programme

1.0 Overview

1.1 Introduction

The Environmental and Social Safeguard Screening (the “ESS Screening”) has been conducted as part of the Green Climate Fund (GCF) project: *Enhancing Early Warning Systems to Build Resilience to Hydro-meteorological Hazards in Timor-Leste* (the “Project”). The principal objective of this Project is to support increased resilience to climate variability and change through strengthening Early Warning Systems (EWS) for hydrometeorological hazards.¹ GCF, as the Funding Agency, and the United Nations Environment Programme (UNEP) as the Accredited Entity (AE), require that this ESS Screening is undertaken prior to project approval.

The GCF was created in order to support the Paris Agreement, which calls for strengthening scientific knowledge about climate variability, “including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making”.² This Project specifically aims to strengthen two aspects of EWS:

1. The infrastructural, institutional, and human resources capacity of the National Meteorological and Hydrological Services and Disaster Management Services to generate and deliver warnings;
2. The work of public and private sector agencies that help communities to access, understand, and use warnings of impending hydrometeorological hazards.

1.1.1 Background on Climate Variability and Natural Hazards in Timor-Leste

Timor-Leste experiences extreme weather and climate variability, and is subject to severe and recurrent floods, droughts and landslides.³ The country is one of the world’s most vulnerable to natural disasters such as tropical cyclones, earthquakes and tsunamis.⁴ The 2017 World Risk Index states that in a 5-year comparison of disaster risk in 171 countries, risk is at its highest in Oceania.⁵ The socio-economic characteristics and lack of coping and adaptive strategies of Timor-Leste further contribute to its vulnerability. The Human Development Index 2017, a composite statistic of life expectancy, education, and income per capita, ranks Timor-Leste at 132 of the 189 countries surveyed.⁶ Moreover, many Timorese live close to coasts, which subjects them to storm

¹ In this document, hydrometeorological hazards are defined as tropical cyclones, drought, storm wind, heavy rain, hail, flood, storm surge and some landslides, and are generally associated with short, time-scale weather events.

² Paris Agreement, Article 7, paragraph 7 (c), available at https://unfccc.int/sites/default/files/english_paris_agreement.pdf, accessed 15 October 2019.

³ Center for Excellence in Disaster Management & Humanitarian Assistance, 2016. Timor-Leste. Disaster Management Reference Handbook 2016

⁴ USAID, 2017. Climate Risk Profile – Timor-Leste

⁵ Bündis Entwicklung Hilft website, available at <https://weltrisikobericht.de>, accessed 15 October 2019. Disaster risk is defined as: “the risk that an extreme natural event will lead to a disaster”.

⁶ UNDP, 2018. Human Development Indices and Indicators: 2018 Statistical Update. Timor-Leste. Available from: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/TLS.pdf

surges, river flooding, and saltwater intrusion of freshwater resources and agricultural land. As such, developing comprehensive early warning systems should have a significant impact on both social and economic outcomes in Timor-Leste.

1.2 Project Results

The Project has four Results, which are as follows:

- **Result 1:** Strengthened delivery model and legislation for climate information and multi-hazard early warning services
- **Result 2:** Strengthened observations, monitoring, analysis and forecasting of climate and its impacts
- **Result 3:** Improved dissemination and communication of risk information and early warning
- **Result 4:** Enhanced climate risk management capacity

Results 1 and 4 are data collection and capacity-building activities, and thus will likely have no anticipated environmental or social impacts. Results 2 and 3 include activities that require the installation and implementation of equipment such as Automated Weather Observing Systems (AWOS)/Automatic Weather Stations (AWS) and communications infrastructure. Whilst there are no anticipated impacts regarding these activities, a discussion of how the Project can avoid potential risks related to the installation and implementation of this equipment is essential for this ESS Screening. In addition, an analysis of GCF and UNEP Environmental and Social Safeguard Guidelines, and demonstrating that the Project is adhering to them, is essential to ensure that the Project achieves its stated goals.⁷

1.3 Purpose of Assessment

The objectives of the ESS Screening as per GCF policy are to determine:

1. The depth and extent of environmental and social assessment that will need to be conducted;
2. The measures that will be developed and implemented to address, manage and monitor the risks and impacts;
3. The appropriate stakeholder engagement; and
4. The disclosure of relevant environmental and social information.

The GCF Environmental and Social Screening Guidelines are closely aligned with UNEP's ESES Framework, which seeks to:

⁷ As per UNEP's Environmental, Social, and Economic Sustainability Framework, ESES Assessments must also consider the economic sustainability of a project. This ESS Screening will not do so, however, because a dedicated economic analysis is set forth in Annexes 2 and 3.

1. Enhance UNEP preparedness for the implementation of the Post-2015 Development Agenda through closer engagement with UN entities and partners to strengthen development aid by routinely integrating the environmental, social, and economic dimensions related to its activities.
2. Set standards of sustainability for the operations UNEP implements itself and for those that are implemented by UNEP's partners, thereby confirming UNEP's accountability to its member states, and to the GEF, GCF and other funders.
3. Improve the quality of UNEP outcomes.
4. Enable UNEP to work in a safer and smarter manner, thereby minimizing potential risks and harm while enhancing UNEP's capabilities and credibility.
5. Allow UNEP to identify the full life-cycle costs of its operational choices and thus to operate more sustainably and improve efficiency over time.
6. Enable UNEP to respond more promptly and effectively to emerging environmental, social, and economic issues as an attractive and trusted implementing/executing partner.

Both GCF and UNEP use three risk categories. GCF labels them: Category A, B, and C, while UNEP: High, Medium, and Low. They are defined as follows:

Category A: Activities with potential significant adverse environmental and/or social risks and impacts that, individually or cumulatively, are diverse, irreversible, or unprecedented.

High Risk: Potential for significant negative impacts, possibly irreversible; requires full impact assessment or comparable study to develop an effective safeguard management plan. For example, projects that involve significant quantities of hazardous substances are normally considered a priori as high risk. Every safeguard management plan should be carefully monitored and reported to the stakeholders during project implementation.

Category B: Activities with potential limited adverse environmental and/or social risks and impacts that individually or cumulatively, are few, generally site-specific, largely reversible, and readily addressed through mitigation measures.

Moderate Risk: Potential for negative impacts, but those that are less significant in scale; some potential risks manageable through standard "good practice" during project implementation without a separate management plan; other potential risks requiring limited environmental, social or economic analysis to determine the potential impacts identified through the screening. These projects may need to develop a safeguard management plan to monitor and manage the identified risks. However, for many cases in this category, a straightforward application of "good practice" may be sufficient.

Category C: Activities with minimal or no adverse environmental and/or social risks and/or impacts.

Low risk: Potential for negative impacts negligible; requires no further study or impact management.⁸

As per GCF Guidelines, risk categories will be assessed in a manner that is proportional to:

1. The nature, scale and location of the activity;
2. The likely environmental and social risks and impacts; and
3. The vulnerability of the receiving environments and communities.⁹

Furthermore, UNEP's ESES Framework states that: "Screening is inevitably based on imperfect and incomplete information. Estimating the degree of "significance" of potential negative impacts is central to determining the level of risk. It depends considerably on an informed professional judgment regarding the significance and complexity of potential impacts. Significance and complexity are functions of magnitude or intensity, geographic extent, duration of the potential risk, reversibility, probability and manageability."¹⁰

As per the Screening Assessment, this project has been assessed as **Category C: Activities with minimal or no adverse environmental and/or social risks and/or impacts**. Notwithstanding the fact that this Project has been assessed as Category C, there are activities that require further analysis pertaining to how the Project will avoid or mitigate any potential risks and impacts. These measures are set forth in the below analysis.¹¹

2.0 Background

2.1 Policy, Legal and Administrative Framework

While both GCF and UNEP policies are essential for the ESS Screening, so too are national and international laws and policies. The Constitution of the Democratic Republic of Timor-Leste (Constitution) is the primary source of law in Timor-Leste. On 22 March 2002 a plenary session

⁸ Green Climate Fund, *Sustainability guidance note: screening and categorizing GCF-financed activities*, available at <https://www.greenclimate.fund/documents/screening-categorizing-activities>. Accessed 29 November 2019.

⁹ Ibid.

¹⁰ United Nations Environment Programme, Social, Environmental, and Economic Sustainability Framework, available at <http://wedocs.unep.org/handle/20.500.11822/8718>. Accessed 24 November 2019.

¹¹ This Environmental and Social Screening notes that as per GCF policy: "[T]he highest risk category of the component subprojects or activities will be considered as the overall category of the programme or project." See Green Climate Fund, *Sustainability guidance note: screening and categorizing GCF-financed activities*, available at <https://www.greenclimate.fund/documents/screening-categorizing-activities>. Accessed 29 November 2019.

of the members of the Constituent Assembly approved and decreed the Constitution,¹² and Article 67 of the Constitution established four organs of sovereignty:

1. The President of the Republic;
2. The National Parliament;
3. The Government; and
4. The Courts.

Under the Constitution, the President is the Head of State (Article 74.1) and the Prime Minister is the Head of the Government (Articles 105.2 and 106.2). Article 69 sets forth the principle of separation of powers, as follows: “Organs of sovereignty, in their reciprocal relationship and exercise of their functions, shall observe the principle of separation and interdependence of powers established in the Constitution.”

For purposes of this ESS Screening, the following Constitutional Provisions and laws are applicable:

- Constitution of the Democratic Republic of Timor-Leste, Section 61:
 - Everyone has the right to a humane, healthy, and ecologically balanced environment and the duty to protect it and improve it for the benefit of the future generations.
 - The State shall recognise the need to preserve and rationalise natural resources.
 - The State should promote actions aimed at protecting the environment and safeguarding the sustainable development of the economy.
- Decree-Law No.5/2011 on the Environmental Licensing System:¹³
 - This Decree-Law created the environmental licensing system for public or private projects. Environmental licensing is based on environmental assessments that provide a Certificate of Environmental Impact (DIA) and an Environmental Management Plan.
- Law No. 6/2017 on Basic Law of Land Use Planning:¹⁴
 - Land use planning is subject to the following general principles:
 - Coordination of the various public interventions with a territorial impact and a fair balance between public and private interests;

¹² Constitution of the Democratic Republic of Timor-Leste, 22 March 2002, available at http://timor-leste.gov.tl/wp-content/uploads/2010/03/Constitution_RDTL_ENG.pdf.

¹³ Decree-Law No.5/2011 on the Environmental Licensing System, available at <http://mj.gov.tl/jornal/lawsTL/RDTL-Law/RDTL-Decree-Laws/Decree%20Law%20%205-2011.pdf>.

¹⁴ Law No. 6/2017 on Basic Law of Land Use Planning, see <https://www.ecolex.org/details/legislation/law-no-62017-on-basic-law-of-land-use-planning-lex-faoc167517/>.

- Sustainability of the solutions contained in the instruments of territorial planning, with due attention given to the economic, social, cultural, and environmental dimensions.
- Governmental Decree No. 14/2017 Establishing the Procedures for Submitting a Proposal for the Classification of Protected Area:¹⁵
 - This Decree Law established the applicable procedures for submitting a proposal for the classification of protected areas.
- Law No. 8/2017 on Land Expropriation for Public Utility:¹⁶
 - This Law established the regime applicable to the expropriation of immovable property.
- Decree Law No.5/2016 creating the National System of Protected Areas:¹⁷
 - This Decree-Law established the legal regime applicable to the creation and management of the National System of Protected Areas.
- Law No. 3/2012 on the legal authorization for Environmental Basic Legislation:¹⁸
 - This Law established the legal authorization for the production of the Environmental Basic Legislation.
- Decree-Law No. 26/2012 establishing the Environmental Basic Legislation:¹⁹
 - This Decree-Law established the Environmental Basic Legislation in conjunction with 3/2012.

2.1.1 Timor-Leste's Environmental Impact Assessment - Decree Law 5/2011

Environmental Impact Assessments are required under Decree Law 5/2011, the Environmental Licensing Law.²⁰ The Environmental Impact Assessment (EIA) is a procedure used for deciding the: “environmental feasibility of executing certain projects based on the environmental

¹⁵ Decree No. 14/2017 Establishing the Procedures for Submitting a Proposal for the Classification of Protected Area, see <https://www.ecolex.org/details/legislation/governmental-decree-no-142017-establishing-the-procedures-for-submitting-a-proposal-for-the-classification-of-protected-area-lex-faoc167524/>.

¹⁶ Law No. 8/2017 on Land Expropriation for Public Utility, see <https://www.informea.org/en/legislation/law-no-82017-land-expropriation-public-utility>.

¹⁷ Decree Law No.5/2016 creating the National System of Protected Areas, see <https://www.informea.org/en/legislation/decree-law-no-52016-creating-national-system-protected-areas>

¹⁸ Law No. 3/2012 on the legal authorization for Environmental Basic Legislation, see <https://www.ecolex.org/details/legislation/law-no-32012-on-the-legal-authorization-for-environmental-basic-legislation-lex-faoc122940/>.

¹⁹ Decree-Law No. 26/2012 establishing the Environmental Basic Legislation, available at <https://www.laohamutuk.org/Agri/EnvLaw/2012/DL26EnvBasicLaw4Jul2012en.pdf>.

²⁰ Decree-Law No.5/2011 on the Environmental Licensing System, available at <http://mj.gov.tl/jornal/lawsTL/RDTL-Law/RDTL-Decree-Laws/Decree%20Law%20%205-2011.pdf>.

assessment and management tools defined” in Decree Law 5/2011. The EIA is used to determine the category of the project: A, B, or C, based on the severity of the potential environmental impact. A Certificate of Environmental Impact is prepared by the Applicant and is based on technical studies and consultations with stakeholders.

2.1.2 Multilateral Agreements and International Protocols

Timor-Leste is a signatory to the following relevant agreements and conventions:

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- Convention on the Conservation of Migratory Species of Wild Animals (CMS);
- International Plant Protection Convention (IPPC);
- International Convention for the Prevention of Pollution from Ships (MARPOL Convention);
- International Treaty on Plant Genetic Resources for Food and Agriculture (Plant Treaty);
- Convention on Wetlands of International Importance (Ramsar Convention);
- World Heritage Convention;
- Paris Agreement under the United Nations Framework Convention on Climate Change;
- Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer;
- Vienna Convention for the Protection of the Ozone Layer;
- 1956 Plant Protection Agreement for the Asia and Pacific Region;
- 1976 Agreement establishing the International Fund for Agricultural Development;
- 1992 Convention on Biological Diversity;
- 1994 Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa;
- 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change.

2.2 Summary of Proposed Interventions

Sub-Activity	Risk	Mitigation
Result 1: Strengthened delivery model and legislation for climate information and multi-hazard early warning services		
1.1.1 Establish a National Framework for Climate Services	This sub-activity is capacity building and support for creating a National Framework for Climate Services. The sub-activities include training, workshops, developing a national strategic plan and costed action plan, monitoring and evaluation, conferences, and travel. No risks are	N/A

	anticipated; however, travel should be avoided where possible to decrease carbon emissions.	
1.1.2 Establish a User Interface Platform	This sub-activity is the implementation of a user interface platform. No risks are anticipated.	N/A
1.1.3 Enhance climate data management and governance	This sub-activity is capacity building and meteorological training. No risks are anticipated; however, international travel should be limited, if possible, and travel into the field should use low-emission vehicles, where possible.	N/A
1.1.4 Mainstream climate risk knowledge into health, agriculture, DRR and other sectors	This sub-activity is capacity building and support for mainstreaming Climate Services. The sub-activities include training, workshops, conferences, and travel. No risks are anticipated; however, travel should be avoided where possible to decrease carbon emissions.	N/A
1.1.5 Establish a financial framework and business model for sustainable climate services	This sub-activity is the development of a financial framework for funding climate services. This includes the following sub-activities: developing programmatic strategies for climate resilience, fund capitalization, management of public/private academic partnerships, fund climate services project support mechanisms, supply policy insurance, and monitoring the performance. The activity will also implement a value chain approach to climate services delivery, including identification of opportunities for NMHSs to provide specialised value-added services to government agencies and individual businesses. No risks are anticipated; however, <i>proper oversight must be taken to ensure that any service delivery to the private sector does not adversely impact service delivery to the public sector.</i>	<ul style="list-style-type: none"> • Proper oversight must be implemented to ensure that any service delivery to the private sector does not adversely impact service delivery to the public sector.
Result 2: Strengthened observations, monitoring, analysis and forecasting of climate and its impacts		
2.1.1 Expand and upgrade the meteorological observation network to GBON standards	This sub-activity involves the procurement and installation of a small network of dual-polarization X-band Doppler Radar systems, 1 Buoy (including accessories and insurance), tide gauge, depth sonar, drone and software, handheld GPS, high-capacity laptops, on-shore station facilities (computing facilities,) workstations, and a server for ocean modelling. This activity also involves	<ul style="list-style-type: none"> • Latitude and longitude coordinates of proposed equipment have been provided in Annex 21. The specific GPS locations of the radars, buoy and AWOS/AWS systems and sensors must be validated prior to the commencement of this activity. • The Government of Timor-Leste (through the Director of DNMG)

	the procurement and installation of AWOS/AWS and sensors (rainfall, air temperature, barometric pressure, wind speed/direction, radiation, soil temp, soil moisture top soil). <i>There are low-level risks inherent in this sub-activity that must be managed. These risks include ensuring land ownership is confirmed for the areas that are used for this activity, and that if private or customary land is being used FPIC has been implemented and compensation has been paid, as agreed by the Government and the owner. As well, any use of the radars, buoys and AWOS/AWS must not adversely impact the environment. (See section 2.2.3 and 2.2.4 for further analysis).</i>	<p>has provided a formal letter indicating that all equipment will be operated, installed and maintained on government-owned land. The specific model and specifications of the Buoy/AWOS/AWS and sensors, must be determined prior to commencing this activity as part of the procurement exercise.</p> <ul style="list-style-type: none"> • Precaution must be taken during the implementation phase to ensure that there are no adverse environmental impacts. • Provide safety equipment to technicians including PPE where appropriate.
2.1.2 Implement a robust program of training and capacity building including QMS	This sub-activity involves training. No risks are anticipated; however, international travel should be limited, if possible.	N/A
2.1.3 Initiate Internet of Things (IoT) approaches	This sub-activity involves training and capacity building on IoT applications, and implementation of a pilot study. This will include the procurement and installation of 20 LoRaWAN ²¹ -enabled weather stations, infrastructure to enable remote data collection and a local server to collect data from TTN ²² . <i>There are low-level risks inherent in this sub-activity that must be managed. These risks include ensuring land ownership is confirmed for the areas that are used for this activity, and that if private or customary land is being used FPIC has been implemented and compensation has been paid, as agreed by the Government and the owner. Any use of the IoT weather system must not adversely impact the environment. In addition, international travel should be limited where possible to decrease carbon emissions. (See section 2.2.4 for further analysis)</i>	<ul style="list-style-type: none"> • The specific GPS locations of the LoRaWAN-enabled weather stations must be determined prior to the commencement of this activity. • The Government of Timor-Leste (through the Director of DNMG) has provided a formal letter indicating that all equipment will be operated, installed and maintained on government-owned land. • The specific model and specifications of the LoRaWAN-enabled weather stations must be determined prior to commencing this activity. • Precaution must be taken during the implementation phase to ensure that there are no adverse environmental impacts. Provide safety equipment to technicians including PPE where appropriate.
2.2.1 Establish a National Forecasting Centre	This sub-activity involves capacity building and training towards a National Forecasting Centre which will be housed at premises supplied	N/A

²¹ The LoRaWAN specification is a Low Power, Wide Area (LPWA) networking protocol designed to wirelessly connect battery operated 'things' to the internet in regional, national and global networks.

²² The Things Network (TTN) is a global community building an open-source and decentralised LoRaWAN network

	by the Government of Timor-Leste. No risks are anticipated; however, international travel should be avoided where possible to decrease carbon emissions, and national travel should use low emission vehicles, where possible. Additionally, there will be minimal impacts on biodiversity conservation and land acquisition as an existing government building has already been identified to house the National Forecasting Centre.	
2.2.2 Enhance climate change risk modelling and prediction	This sub-activity involves training and workshops related to risk modelling. No risks are anticipated; however, international travel should be avoided where possible to decrease carbon emissions, and national travel should use low emission vehicles, where possible.	N/A
2.2.3 Establish impact-based forecasting and decision-support systems for agriculture, disaster risk reduction and marine sectors	This sub-activity is implementing training, workshops, and capacity building for impact-based forecasting. No risks are anticipated; however, international travel should be avoided where possible to decrease carbon emissions, and national travel should use low emission vehicles, where possible.	N/A
2.3.1 Establish a national Climate and Health Working Group	This sub-activity is capacity building and support for mainstreaming climate services in the health sector. No risks are anticipated; however, travel should be avoided where possible to decrease carbon emissions.	N/A
2.3.2 Establish an air quality monitoring framework	<p>This sub-activity involves training and capacity building on air quality monitoring, and establishment of an air quality monitoring system. This will include the procurement and installation of low-cost sensors for fine particulate matter and nitrogen dioxide diffusion tubes.</p> <p><i>There are low-level risks inherent in this sub-activity that must be managed. These risks include ensuring land ownership is confirmed for the areas that are used for this activity, and that if private or customary land is being used FPIC has been implemented and compensation has been paid, as agreed by the Government and the owner. Any use of the air quality monitoring system</i></p>	<ul style="list-style-type: none"> • The specific GPS locations of the low-cost sensors and nitrogen dioxide diffusion tubes must be determined prior to the commencement of this activity. • The Government of Timor-Leste (through the Director of DNMG) has provided a formal letter indicating that all equipment will be operated, installed and maintained on government-owned land. The specific model and specifications of the low-cost sensors and nitrogen dioxide diffusion tubes must be determined prior to commencing this activity. • Precaution must be taken during the implementation phase to ensure that there are

	<p><i>must not adversely impact the environment. In addition, international travel should be limited where possible to decrease carbon emissions.</i></p> <p>(See section 2.2.4 for further analysis)</p>	no adverse environmental impacts. Provide safety equipment to technicians including PPE where appropriate.
2.3.3 Co-develop tailored forecasting and decision support for health	This sub-activity is implementing training, workshops, and capacity building for tailored forecasting and decision support. No risks are anticipated; however, international travel should be avoided where possible to decrease carbon emissions, and national travel should use low emission vehicles, where possible.	N/A
2.3.4 Develop a mobile app for health-related forecasts and advisories	This sub-activity is implementing capacity building to deliver health-related forecasts and advisories. No risks are anticipated; however, international travel should be avoided where possible to decrease carbon emissions, and national travel should use low emission vehicles, where possible.	N/A
Result 3: Improved dissemination and communication of risk information and early warning		
3.1.1 Convene a technical working group for EWS	This sub-activity involves capacity building and training on early warning systems (EWS), including peer learning on EWS in Indonesia. No risks are anticipated; however, low-emission vehicles should be used where possible.	N/A
3.1.2 Co-develop socially inclusive and gender-responsive localised communication strategies	This sub-activity involves support to co-develop gender-responsive localised communication strategies. No risks are anticipated; however, international consultant travel should be avoided, where possible, to decrease carbon emissions and local travel should use low-emission vehicles where possible.	N/A
3.1.3 Enhance community-based early warning systems	This sub-activity involves establishment of community based EWS, including purchasing of equipment. No risks are anticipated; however, international consultant travel should be avoided, where possible, to decrease carbon emissions.	N/A
3.1.4 Disseminate sector-specific early warning information for agriculture	This sub-activity involves building national capacity for disseminating Early Warning information. The sub-activities include training of staff and the standardization of practices	N/A

	within MAF. No risks are anticipated; however, international consultant travel should be avoided, where possible, to decrease carbon emissions.	
Result 4: Enhanced climate risk management capacity		
4.1.1 Enhance disaster preparedness capabilities from national to community level	This sub-activity involves capacity building and coordination for disaster preparedness and risk reduction, including conducting regular Community-Based Disaster Risk Management (CBDRM) Working Group and stakeholder meetings, co-development of Community Action Plans, and training on the use of climate forecasts. No risks are anticipated; however, international consultant travel should be avoided, where possible, to decrease carbon emissions and local travel should use low-emission vehicles where possible.	N/A
4.1.2 Build capacity of the National Disaster Management Directorate (NDMD) for EWS	This sub-activity involves building capacity of NDMD for EWS; use of the Disaster Loss Database; and co-developing SOPs for disaster preparedness. The sub-activities include purchasing small-scale equipment such as laptops, iPads, and projectors, as well as Internet. No risks are anticipated.	N/A
4.1.3 Increase public awareness and education on climate hazards, related health risks and early warning	This sub-activity involves supporting CVTL with its awareness raising and education campaign regarding climate hazards, health risks and EWS. The activity will also implement capacity building. No risks are anticipated; however, special attention should be used regarding communicating in languages that are understood by local communities.	N/A
4.1.4 Conduct a targeted disaster risk awareness and education campaign for women	This sub-activity involves conducting a disaster risk awareness and education campaign for women. The activity will also implement capacity building. No risks are anticipated; however, special attention should be used regarding communicating in languages that are understood by local communities.	N/A
4.2.1 Establish a Roadmap for Forecast-based Financing (FbF)	This sub-activity is support for FbF in order to establish a Roadmap for FbF implementation, including identification of a financial mechanism for forecast-based early action, capacity building and	N/A

	development of Early Action Protocols. No risks are anticipated; however, travel by international consultants should be avoided, where possible, to decrease carbon emissions and local travel should use low-emission vehicles where possible.	
4.2.2 Develop capacity for Early Warning Early Action (EWEA) in agriculture	This sub-activity involves capacity building for national staff related to EWEA in agriculture. The sub-activities include training and developing Early Action Protocols and monitoring indicators for agriculture sector-specific hazards. No risks are anticipated; however, travel by international consultants should be avoided where possible to decrease carbon emissions.	N/A

2.2.3 Dual-Polarization X-Band Doppler Weather Radars

Of particular concern is the proposed installation of three Dual-Polarization X-Band Doppler Weather Radars. In order to avoid environmental and social risks related to this activity (Sub-Activity 2.2.1) the proposed locations for the radars have taken into account potential land tenure and environmental impacts and are strategically proposed areas that are highly unlikely to raise land tenure or environmental risks. The four locations are as follows:

Timor-Leste GCF proposed equipment				
No.	Municipality	Latitude	Longitude	Equipment Type
1	Dili	-8.565	125.58	New X-Band Radar
2	Suai	-9.303	125.287	New X-Band Radar
3	Baucau	-8.485	126.399	New X-Band Radar

As per the Project's Operations and Maintenance Plan (see Annex 21), the network of three dual-polarization X-Band Doppler Weather Radars will be located in main population centres of Timor-Leste. The radar in Dili will be co-located with the National Directorate of Meteorology and Geophysics' current equipment and the remaining two radars will be located at the airports in Suai and Baucau.

Prior to implementation of Sub-Activity 2.2.1, documentation will be required re-confirming that the proposed areas are Government property. In addition, an explanation regarding how environmental impacts will be avoided is also required. The strategic location of these radars should render this rather straightforward, as the Dili radar will be in an area that already contains meteorological equipment and thus environmental and social impact assessments should have been implemented prior to the installation of the equipment. Moreover, the two radars in Suai and Baucau will be installed at airports, which should have previously been scoped for environmental or land tenure issues. If any potential environmental and social issues arise related

to the proposed locations, efforts should be made to change the location of the radars to areas that do not raise environmental and social risks.

2.2.4 Automatic Weather Station, Automated Weather Observing System, Manual Weather Station, Marine Buoy, LoRaWAN-enabled Weather Stations and an Air Quality Monitoring System

The other types of equipment that must be considered for ESS risks are the Automatic Weather Station (AWS), Automated Weather Observing System (AWOS), Manual Weather Station, and Buoy (Sub-activity 2.1.1); LoRaWAN-enabled weather stations (Sub-activity 2.1.3); and the hybrid ambient air quality monitoring system (Sub-Activity 2.3.2). The Project plans to install two AWOS, one in Dili and one in Suai (see No. 10 and No. 11 on the table below for the latitude and longitude). The proposed site in Dili has been inspected and approved by a technician from the Australian Bureau of Meteorology, while the AWOS in Suai is proposed to be installed at the airport. Prior to implementation, documentation will be required demonstrating that the proposed areas are Government property. In addition, an explanation regarding how environmental impacts will be avoided is required. The strategic location of these stations should render this rather straightforward, as the Suai location is at the airport and the Dili location is already being used for commercial purposes by ConocoPhillips, and thus scoping studies of both locations should have already been implemented.

There are also nine AWS planned for Baucau, Maliana, Same, Lospalos, Viqueque, Atauro, (located at the Domestic Airport), Liquica, Manatutu, and Ermera. The latitude and longitude can be found in the table below (No. 1 – 9). As with the AWOS/AWS, documentation will be required demonstrating that the proposed areas are Government property and an explanation regarding how environmental impacts will be avoided. In addition, a Manual Station is proposed for Suai. The latitude and longitude can be found in No. 12 in the chart below. Documentation will be required re-confirming that the proposed areas are Government property and an explanation regarding how environmental impacts will be avoided. It is noteworthy that security fencing will be used to protect the Manual Station, and thus the analysis must take into account the fencing along with the Manual Station itself. The last piece of equipment under Sub-Activity 2.1.1 that will require analysis is the buoy. The location of the buoy will be in the Dili port area. However, similar validation regarding land and marine tenure and environmental impacts must be applied.

Timor-Leste GCF Proposed Equipment					
No	Municipality	Latitude	Longitude	Equipment Type	Status
1	Liquica	-8.59	125.347	New AWS	Proposed Equipment
2	Ermera	-8.75	125.3998	New AWS	Proposed Equipment
3	Manatuto	-8.5134	126.0283	New AWS	Proposed Equipment
4	Same	-9.009	125.6481	New AWS	Proposed Equipment
5	Viqueque	-8.8826	126.372	New AWS	Proposed Equipment
6	Lospalos	-8.4454	126.9886	New AWS	Proposed Equipment
7	Atauro	-8.2442	125.6062	New AWS	Proposed Equipment
8	Baucau	-8.4793	126.3972	New AWS	Proposed Equipment
9	Maliana	-8.9696	125.2102	New AWS	Proposed Equipment

10	Dili	-8.5496	125.5249	New AWOS	Requires upgrade from AWS to AWOS
11	Suai	-9.3007	125.2854	New AWOS	Proposed Equipment. Location chosen.
12	Suai	-9.299	125.283	New Manual Station	Proposed Equipment

In addition, there are 20 LoRaWAN-enabled weather stations to be deployed under the pilot IoT study (Sub-activity 2.1.3) and a hybrid ambient air quality monitoring system, including low-cost sensors for fine particulate matter and nitrogen dioxide diffusion tubes, (Sub-Activity 2.3.2) adhering to the same requirements for land tenure and environmental impacts – as for the AWOS/AWS, manual stations and buoy.

3.0 Environmental and Social Safeguards

3.1 Approach

Project activities are subject to national and international law, as well as UNEP's Environmental and Social Safeguard Principles and Standards and GCF's Safeguard guidelines. Relevant national and international laws are set forth in Section 2, while GCF's and UNEP's policies are analyzed below.

3.1.1 UNEP Environmental and Social Sustainability Framework

The UNEP Environmental and Social Sustainability Framework (ESSF) aims to strengthen the sustainability and accountability of UNEP programmes and projects. The Framework outlines UNEP's commitment to sustainable development and environmental and social standards that are designed to promote human well-being and the protection of the environment.

The Framework identifies the following purposes:

- To enhance outcomes by systematically integrating environmental, social and economic dimensions in UNEP-funded programmes and projects.
- To strengthen alignment of UNEP's work with the SDGs and other UN entities and partners in addressing the environmental and social sustainability of development efforts.
- To set standards of sustainability for UNEP's operations thereby confirming UNEP's accountability to its member States, and other funders.
- To enable UNEP to work in a safer and smarter manner, thereby minimising potential risks and harm to intended beneficiaries while enhancing UNEP's capabilities and credibility.

The Framework is structured around guiding principles, safeguard standards and related operational modalities. It encompasses key elements of a human rights-based approach to programmes and projects and applies a risk-informed approach to addressing environmental and social risks and impacts. The guiding principles of the framework are derived from the 2030 Agenda for Sustainable Development²³ and comprise the following: Leave No One Behind, Human Rights and Gender Equality and Women's Empowerment, Sustainability and Resilience and Accountability.

²³ United Nations, 2015. Transforming our World: The 2030 Agenda for Sustainable Development

The Environmental and Social Safeguards (ESS) Screening Assessment uses prevailing science to draw its conclusions regarding possible adverse effects Project activities might have. Moreover, in line with UNEP's risk-informed and precautionary approach, the ESS Screening Assessment employs the mitigation hierarchy, which emphasises avoiding activities that may give rise to adverse impacts. When this is impossible, the ESS Screening Assessment proposes ways to mitigate adverse impacts, and when this is impossible, offset these impacts.

3.1.2 Leave No One Behind

The 2030 Agenda on Sustainable Development pledges that no one will be left behind and endeavours "to reach the furthest behind first". Guided by the overarching Leave No One Behind principle, UNEP will, through proactive engagement, identify marginalised and disadvantaged groups and individuals and provide them with equitable access to Project benefits and resources, ensuring that they are not left behind as a result of disadvantages, discrimination, and vulnerability to shocks, including crisis and conflict situations, climate change impacts and natural disasters.

The needs of people living in rural and marginalised communities ("the last mile") are a specific focus of this Project. As such, this Project will ensure that marginalised groups, who historically have not enjoyed the advantages of development, will benefit from this Project. Furthermore, as articulated below, the unique needs of the disabled and vulnerable peoples, as well as women and girls (see Annex 8), will be considered throughout the Project design.

3.1.3 Human Rights and Gender Equality and Women's Empowerment

The ESSF is based on the human rights standards contained in, and the principles derived from, the United Nations Charter, the Universal Declaration on Human Rights and other international human rights treaties and other legal instruments. As such, the Project will:

- Uphold human rights principles of accountability and rule of law, participation and inclusion, and equality and non-discrimination, noting that prohibited grounds of discrimination include race, colour, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographic origin, property, birth or other status including as indigenous person or as a member of a minority;
- Support Governments and other State actors to adhere to their obligations and duties to respect, to protect, and to fulfill human rights; and
- Refrain from supporting activities that may contribute to violations of a State's human rights obligations under human law.

The Project will seek to enhance gender equality and women's empowerment by ensuring that its activities do not discriminate against women and girls, reinforce gender-based inequalities and exclusion, or have disproportionate adverse gender-related impacts. A Gender Assessment and gender-sensitive stakeholder analysis have been conducted and a Gender Action Plan

correspondingly developed (Annex 8) in order to promote the design and implementation of gender responsive and gender transformative interventions that address the different needs and constraints of women, men, girls, and boys, considering the effects of multiple forms of discrimination.

3.1.4 Sustainability and Resilience

The ESSF supports international conventions and agreed policy frameworks to promote sustainability and to increase the resilience of societies, including the Paris Agreement and the United Nations Framework Convention for Climate Change (UNFCCC), and the Sendai Framework for Disaster Risk Reduction. In alignment with these conventions and agreed policy frameworks, the Project directly supports efforts to reduce risks and vulnerabilities associated with natural hazards and climate change, with the overall aim of strengthening the resilience of communities to address risks of climate change impacts and disasters.

The ESS Screening Assessment outlined in this document aims to integrate social, environmental and economic sustainability considerations into the Project through a comprehensive environmental and social risk assessment of proposed initiatives and application of appropriately targeted environmental and social safeguards.

3.1.5 Accountability

The 2030 Agenda on Sustainable Development includes commitments to greater accountability. As such, the Project will:

- Promote compliance with national and international legal norms and standards;
- Stress active local community engagement and participation in project decision-making and implementation;
- Promote transparency of project interventions through the provision of timely, accessible and relevant information regarding supported activities;
- Promote access to legitimate, accessible, predictable, equitable and transparent, and rights-compatible Stakeholder Redress Mechanism; and
- Promote monitoring and reporting on implementation of environmental and social risk management measures.

Free, Prior, and Informed Consent (FPIC) of all Project-affected Communities is central to the Project design and implementation. As such, stakeholder engagement, as well as the Stakeholder Response Mechanism (SRM), are central to the design and implementation of this Project. The design of the SRM is articulated in Section 4.0, while the details of Stakeholder Engagement are set forth in Annex 7.

3.2 Analysis of Environmental and Social Safeguards

Safeguard Standard 1: Biodiversity conservation, natural habitats, and sustainable management of living resources.

- The Project will likely have minimal to no negative impacts on biodiversity conservation, natural habitats, and sustainable management of living resources.
- Specific activities that have been flagged because of the possible risks to be monitored during the implementation phase are:
 - 2.1.1 Expand and upgrade the meteorological observation network to GBON standards
 - 2.1.2 Establish a national Forecasting centre
- A small scoping study may be required depending on the chosen sites for these activities.

Safeguard Standard 2: Resource efficiency, pollution prevention and management of chemicals and wastes.

- This Project does not significantly:
 - Consume or cause consumption of water, energy, or other resources;
 - Generate or causes significant generation of GHG;
 - Generate or cause generation of solid, liquid, or gaseous hazardous waste;
 - Use, cause the use of, or manage the use of, storage, and disposal of hazardous chemicals, including pesticides.
- Should it become known that the Project is significantly consuming resources, causing pollution, or generating waste, the Project will immediately cease work within the area that these activities have been observed and consult with the relevant Government agency and Project Manager.
- As noted through this ESS Screening, international travel should be minimised, where practicable, in order to limit GHG emissions, and national travel should use low-emission vehicles when possible.

Safeguard Standard 3: Safety of dams

- The operation, construction or rehabilitation of a dam is not being implemented as part of the Project's activities.

Safeguard Standard 4: Involuntary resettlement

- Involuntary resettlement is not envisioned as a consequence of Project activities. Notwithstanding, as per the Stakeholder Engagement Plan outlined in Annex 7, Government Stakeholders, civil society organizations, international experts, and community leaders were all consulted regarding the Project's activities.
- If any Project activities are envisioned to be executed on private land, free, prior, and informed consent must be granted. However, the Government of Timor-Leste (through the Director of DNMG) has provided a formal letter indicating that all equipment will be operated, installed and maintained on government-owned land..
- Compensation for any economic loss as per UNEP and GCF guidelines, as well as national law, must also be granted.
- Should any claims to property rights be made, the Project activity will not proceed until the issues are resolved. Legal or formal documentation of land use contracts and agreements will be required, and the following relevant laws will also apply:
 - The Constitution;

- Juridical Regime of Real Estate No. 11/2003;
- The Civil Code;
- Regime for Regularization of Ownership of Immovable Property in Undisputed Cases, Decree Law No. 27/2011;
- The Special Regime for the Definition of Ownership of Real Estate, 13/2017;
- The Law on Expropriation, Law 8/2017.
- Specific activities that have been flagged for further monitoring related to land usage are:
 - 2.1.1 Expand and upgrade the meteorological observation network to GBON standards
 - 2.1.2 Establish a national Forecasting centre

Safeguard Standard 5: Indigenous peoples

- In accordance with the analysis of international development banks, for purposes of development projects, essentially everyone in Timor-Leste is considered indigenous, and thus no specific analysis related to indigenous peoples is required.²⁴ Other approved GCF projects in Timor-Leste have followed the same approach.²⁵ All Environmental and Social issues related to indigenous people are therefore subsumed into the other Safeguard Standards. Moreover, Stakeholder Engagement and the Stakeholder Response Mechanism, and indeed this ESS Screening, are used to protect the entire Timorese population against Environmental and Social risks.

Safeguard Standard 6: Labour and working conditions

- Manual labour contracts are not envisioned as part of this contract. Contracts for national and international consultants will be executed in accordance with Timor-Leste's Labour Code, Law 4/2012. Furthermore, personnel contracts related to Project activities will be procured through a non-discriminatory and gender-responsive procurement process.

Safeguard Standard 7: Protection of tangible cultural heritage

- Tangible cultural heritage will likely not be affected by Project activities. Should Project-affected Communities lodge any grievances regarding areas of cultural significance, the Project Activity will not proceed until the issues are resolved in accordance with Safeguard Standard 7.

Safeguard Standard 8: Gender equality

- Analysis of Standard 8 is not included in this ESS Screening because it is addressed in Annex 8.

Safeguard Standard 9: Economic sustainability

- Analysis of Standard 9 is not included in this ESS Screening because it is addressed in Annexes 2 and 3.

²⁴ See World Bank Indigenous Peoples Plan, Timor-Leste, available at <http://documents.worldbank.org/curated/en/126171468304205902/Timor-Leste-Road-Climate-Resilience-Project-indigenous-peoples-plan> (accessed 27 November 2019).

²⁵ <https://www.greenclimate.fund/project/sap021>

3.3 Environmental and Social Action Plan (ESAP)

Summary of risks (description of risks derived from the responses to the screening questions and ESS report)	Mitigation measures (options to avoid, reduce and mitigate risks and impacts, including due diligence and specific management plans) ²⁶	Risk Significant (description of the overall level of risk)	Responsible Party (individual/unit/entity tasked to carry out mitigation measures)	Schedule/timing of implementation of measures (including any additional due diligence and management plans) ²⁷	Expected results/outputs of the measures	Estimated cost of carrying out the measures
Risk 1: There is a risk that local Stakeholders, particularly Indigenous People, will not be engaged in the Project design and implementation.	All Project activities require Stakeholder Engagement. For purposes of this ESS Assessment, all Timorese citizens are considered Indigenous People, therefore, Indigenous People will be included in all Stakeholder Engagement activities, including community meetings, inception workshops, and project surveys. A Stakeholder Engagement Plan will be implemented in order to ensure Free, Prior, and	Low Impact: 1 Probability: 2	<ul style="list-style-type: none"> • Project Manager; M&E Advisor; • National EE (SSE) • Stakeholder Engagement consultant • ESS Consultant 	<ul style="list-style-type: none"> • During the Project design phase, the Project design team will implement a Stakeholder Engagement Plan. • During the Project implementation phase all Stakeholders will have access to the Stakeholder Response Mechanism, which will 	<ul style="list-style-type: none"> • Thorough consideration of the Stakeholder's concerns during the design phase should assist the Project with designing activities in a manner that avoids risks. • Ensuring Stakeholders are aware of the Stakeholder Response Mechanism will 	<ul style="list-style-type: none"> • The costs of Stakeholder Engagement have been included in the consultancy fees related to the Stakeholder Engagement Specialist, which was funded by UNEP during the Project design. <ul style="list-style-type: none"> ○ Cost: Stakeholder Engagement Specialist (\$500/day x 10 days = \$5000) • The costs of the Stakeholder Response Mechanism are included in the fees for the Project Manager. <ul style="list-style-type: none"> ○ Cost: Project Manager (\$79,833/year)

²⁶ UNEP is cognizant that once project implementation begins, or through the life cycle of the project, there may be changes in the local context of the project activities which may have an impact on the ESS risks. If that is the case, UNEP will undertake additional assessments to ensure that the risk category remains within allowed limits, as will be required under the FAA. For more information please see the UNEP ESSF Annex II: Safeguard risk categories, assessment criteria and related mitigation approaches: https://www.unep.org/resources/report/un-environments-environmental-social-and-economic-sustainability-framework?_ga=2.51515823.743953351.1617696922-1102299431.1615197656

²⁷ Ibid.

	Informed Consent for all Project activities.			address the Stakeholder's concerns, should any arise.	provide them with the ability to address grievances during the Project's implementation.	
Risk 2: The Project will be implementing radars, buoy, automatic weather stations (AWS), automated weather observing systems (AWOS), manual stations, LoRaWAN-enabled weather stations, hybrid ambient air quality monitoring system, tide gauges, depth sonars, and drones, these could lead to limited environmental degradation or issues related to land tenure.	<ul style="list-style-type: none"> • The Project will avoid land tenure issues through using Government-owned land for all equipment. • Re-confirmation of land tenure will be required prior to implementing any of the equipment. • If land tenure is credibly brought into question by Stakeholders, the Project will move the location of the equipment. • The specific GPS locations of the land and water-based equipment must be re-confirmed prior to the commencement of this activity by the National EE (SSE)/DNMG in cooperation with relevant technical partners" BMKG for land-based AWS and 	Low Impact: 2 Probability: 2	<ul style="list-style-type: none"> • Project Manager; • ESS Consultant; • Contractors hired to install land and water-based equipment. • National EE (SSE) in cooperation with DNMG • Technical partners (BMKG, RIMES, ICTP) 	<ul style="list-style-type: none"> • All locations will be re-confirmed prior to the Project's implementation. 	<ul style="list-style-type: none"> • It is expected that all equipment will be installed on Government-owned land that raises no significant environmental risks. 	<ul style="list-style-type: none"> • The cost of screening all activities for environmental and social risks, and managing said risks, are included in the consultancy costs for the ESS Consultant, which was funded by UNEP during the Project design. <ul style="list-style-type: none"> ○ Cost: (\$500/day x 15 days = \$7500) • During the Project's implementation the Project Manager will be responsible for implementing the ESS management plan. <ul style="list-style-type: none"> ○ Cost: Project Manager (\$79,833/year)

	<p>AWOS, RIMES for the marine buoy and ICTP for the LoRaWAN-enabled weather stations.</p> <ul style="list-style-type: none">• See Section 2.2.3 of this ESS Report for further information regarding the three radars.					
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3.4 Assessment of Risk Category

None of the potential impacts that have been identified above are expected to have significant environmental or social consequences. The majority of the Project activities are related to capacity building and training, which are inherently low-impact activities. While there are some activities that will require low-level impacts, using the management techniques noted above, the environmental and social impacts should be minimal. **This Project can therefore be rated as Category C**, as per UNEP and GCF policies and thus an Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) will not be required.

3.5 Information Disclosure, Consultation and Participation

Public consultation and disclosure are an essential aspect of the Stakeholder Engagement Plan (see Annex 7). The Project was discussed with a wide range of stakeholders including relevant government officials, international organisations, technical experts, and NGOs. Site-specific consultation will be undertaken during the continued design of the Project, if needed, and consultation with any Project-affected Communities will be undertaken if required. The Project manager will also release updates on the Project on a regular basis to provide stakeholders with information on the status of the Project. As set forth in Section 4, Project-affected Communities will have the ability to file grievances through the Stakeholder Response Mechanism.

4.0 Stakeholder Response Mechanism

The GCF's Environmental and Social Policy states that Projects must provide a "grievance redress mechanism to receive complaints and feedback," and that they "are established and function in a collaborative manner and in a way that is complementary to [the] GCF Independent Redress Mechanism."²⁸ To this end, UNEP's ESS Framework mandates a Stakeholder Response Mechanism (SRM), which provides the opportunity for affected people to seek either compliance review or dispute resolution in regard to activities that UNEP implements or executes as part of its projects and programmes. The SRM serves as a complementary mechanism to the local Grievance Redress Mechanism established for the Project, which should be the first point of contact for stakeholders who may be adversely affected by the Project. In the event that such concerns are not resolved at the local level, such stakeholders may access UNEP's SRM.²⁹

UNEP's SRM is established through the Independent Office for Stakeholder Safeguard-related Response (IOSSR).³⁰ The IOSSR serves two functions:

²⁸ Green Climate Fund, *Environmental and Social Policy*, available at <https://www.greenclimate.fund/documents/environmental-social-policy>. Accessed 29 November 2019.

²⁹ UNEP Environmental and Social Sustainability Framework (2020), Available at: <https://wedocs.unep.org/bitstream/handle/20.500.11822/32022/ESSFEN.pdf?sequence=1&isAllowed=y>. Accessed 18 January 2021.

³⁰ United Nations Environment Programme, Stakeholder Response Mechanism, available at <https://wedocs.unep.org/handle/20.500.11822/32023>

1. Compliance Review: processes for responding to claims by Stakeholders alleging that UNEP activities are not in compliance with the ESS Framework;
2. Grievance Redress: provides access to dispute resolution mechanisms used to address project-related disputes that relate to UNEP's activities.

The IOSSR is responsible for the SRM, and thus carries out the following responsibilities:

- Receives and screens complaints for eligibility;
- Maintains a roster of accredited independent experts related to compliance review and dispute resolution;
- Develops the appropriate TOR for facilitating the compliance review or dispute resolution;
- Manages and oversees all experts engaged in compliance review and dispute resolution;
- Maintains the IOSSR website that provides the public with access to all relevant documents related to compliance review and dispute resolution;
- Issues reports to the UNEP Executive Director with findings and recommendations for compliance reviews, and outcomes for dispute resolution processes;
- Monitors the implementation of decisions related to compliance review and grievance redress;
- Reports on the IOSSR operations and provides advice based on lessons learned;
- Conducts outreach to Stakeholders regarding the IOSSR;
- Seeks to minimise the risks of retaliation to complainants.

Complaints can be filed to the Stakeholder Response Mechanism through the [online project concern form](#), email or mail to the following address:

Independent Office for Stakeholder Safeguard-related Response (IOSSR) & Director of
Corporate Services Division
United Nations Environment Programme
Nairobi, Kenya

Email: unenvironment-IOSSR@un.org

4.1 Overview of the GCF Independent Redress Mechanism

Similar to UNEP's Stakeholder Response Mechanism, GCF has an Independent Redress Mechanism (IRM) that addresses complaints from people who believe they have, or will be, negatively affected by projects or programmes funded by GCF.³¹ The IRM provides recourse to affected people in a way that is fair, effective and transparent, and enhances the performance of

³¹ Green Climate Fund, Independent Redress Mechanism, available at [https://irm.greenclimate.fund/#:~:text=GCF's%20Independent%20Redress%20Mechanism,Green%20Climate%20Fund%20\(GCF\).](https://irm.greenclimate.fund/#:~:text=GCF's%20Independent%20Redress%20Mechanism,Green%20Climate%20Fund%20(GCF).)

GCF and its projects and programmes. Like the SRM, the IRM offers problem solving and compliance processes.

The IRM addresses complaints from Stakeholders who are, or may potentially be, adversely impacted by projects or programmes. After verifying eligibility, the IRM engages with the relevant parties to explore options for resolving the complaint with the aim to reach a mutually satisfactory outcome. The goal of this problem-solving process is to address specific issues that have given rise to the complaint, and to help identify solutions that meet the interests of the relevant parties. Usually this involves clarifying the issues of concerns, understanding the needs and interests of stakeholders, assisting parties in identifying solutions, and helping them reach an agreement regarding the terms of these solutions.

Stakeholder Complaints (Requests) can be filed here:

<https://gcf.i-sight.com/external/case/new/group=Request>

If parties are unwilling or unable to resolve the issues, the IRM can conduct a compliance appraisal to determine whether a compliance investigation is warranted, and if so, carries out an investigation to identify any non-compliance with GCF policies or procedures in relation to the project or programme. The IRM monitors any compliance recommendations that are a result of the investigation. Compliance processes focus on GCF and compliance with its relevant policies and procedures. IRM compliance investigations are independent of, but complementary to, GCF's procedures for ensuring project compliance.

Compliance Complaints can be filed here:

<https://gcf.i-sight.com/external/case/new/group=Complaint>

The SRM is publicized to the Executing Entity, Stakeholders, and the public via its publicly-available website: <https://irm.greenclimate.fund/>. This includes information about the IRM's functions, how to file a claim, the case requester, publications, and other relevant information. This information will also be conveyed to Stakeholders during the Stakeholder Engagement meetings.

4.2 Indicative Procedural Rules for Filing a Complaint

4.2.1 Who can Submit a Complaint?

1. A Complaint can be submitted by any individual or group that has been affected by the Project's activities (hereinafter referred to as Project-affected Community – note that this term can refer to an individual or group).
2. The Project-affected Community can only submit Complaints related to the Project's activities.
3. If a Complaint is filed on behalf of the Project-affected Community (by for example, a civil society organization), the Claimant (person filing the Complaint) must identify the Project-affected Community that is being represented in the Complaint, and provide written confirmation from the Project-affected Community that they have provided the Claimant with the authority to present the Grievance on their behalf.

4.2.2 How is the Complaint Communicated?

1. The SRM will be housed in the Project Management Unit.
2. The SRM shall maintain a flexible approach with respect to receiving Complaints in light of possible constraints related to the Claimants and Project-affected Community.
3. A Complaint can be transmitted to the SRM by any means available (i.e. by email, letter, phone call, meeting, SMS).

4.2.3 What information should be included in a Complaint?

The Complaint should include the following information:

1. Name of the individual(s) filing the Complaint (Claimant).
2. A means for contacting the Claimant (e.g. email, phone, mail).
3. If applicable, the identity of the Project-affected Community, and written confirmation granting authority to the Claimant to file the Complaint.
4. Description of the potential or actual harm.
5. Description of the Project-affect Community.
6. Names of the individual(s) or institutions responsible for the potential or actual harm.
7. Location(s) and date(s) of actual or potential activity.
8. What has been done by the Claimant and Project-affect Community thus far to resolve the matter.
9. Whether the Claimant and/or Project-affected Community wishes their identities to be kept confidential.
10. The specific help requested from the SRM.

Initially, the Complainants are not required to provide all of the information listed above, they need only provide enough information to determine eligibility. If insufficient information is provided, the SRM has an obligation to make a substantial, good faith effort to contact the Complainant to request the additional information needed to determine eligibility, and if eligible, to develop a proposed response.

4.3 Logging a Complaint, Acknowledgment, and Tracking

Within one week from the receipt of a Complaint it will be acknowledged by the SRM via the preferred mode of communication indicated in the Complaint and recorded electronically by the SRM. The Complaint file maintained by the SRM will contain:

1. Date the Complaint was received.
2. Date the written/oral acknowledgment was sent.
3. Dates and nature of all other communications or meetings with the Claimant, Project-affected Community, and other relevant Stakeholders.
4. Date and records related to the proposed solution.
5. Acceptance or objections by the Claimant (or Project-affected Community).
6. Proposed next steps in the case that there were objections.

7. Alternative solution if renewed dialogue was pursued.
8. Engagement of a mediator or facilitator.
9. Notes regarding implementation (as applicable).
10. Conclusions and recommendations arising from monitoring and follow up.

4.4 Maintaining Communication and Status Updates

Files for each Complaint will be available for review by the Claimant, the Project-affected Community, and other Stakeholders involved in the Complaint. Appropriate steps will be taken to maintain the confidentiality of these parties if previously requested. The SRM will provide periodic updates to the Claimant regarding the status and current actions to resolve the Complaint. Such updates will occur within reasonable intervals (not greater than every thirty days).

4.5 Consensus Building

Within one week of receiving a Complaint the SRM will engage the Claimant and other relevant Stakeholders as deemed appropriate, to gather all necessary information regarding the Complaint. The SRM will have the authority to request from relevant Government Ministries, Departments, or Directorates any relevant information related to the Complaint. As necessary, the SRM will convene meetings with relevant individuals and institutions at the PMU office, where the SRM is housed. The SRM may also determine that an onsite field investigation is necessary to properly understand the Complaint and develop an effective proposed solution. At any point after receiving a Complaint the SRM may seek technical assistance from an individual or entity that has relevant expertise. The objective of all investigative activities is to develop a thorough understanding of the issues and concerns raised in the Complaint and to facilitate consensus around the proposed solution.

4.6 Proposed Actions and Overseeing Implementation

The SRM will communicate to the Claimant one or more proposed actions or resolutions, and clearly articulate the reasons for the proposed solutions. If the Claimant does not accept the resolution, the SRM may engage with the Claimant to provide alternative options. If the Claimant accepts the proposed solution, the SRM will continue to monitor the implementation directly, and through the receipt of communications from the Claimant and other relevant parties. In all communications with the Claimant and other Stakeholders, the SRM will be guided by its problem-solving role, non-coercive principles and processes, and the voluntary, good faith nature of the interaction with the Claimant, Project-affected Community, and other Stakeholders.

4.7 Alternatives to the SRM

While the in-country SRM should be the primary mechanism for Complaints resolution, in instances where the Project-affected Communities are not satisfied with process, the Claimant may contact UNEP's Complaints Mechanism, based at its headquarters, or GCF's Independent Redress Mechanism, to remedy the Complaint. A Claimant may also pursue mediation, other grievance mechanisms, or legal channels, and the existence and use of the SRM is without prejudice to any existing rights under these processes

5.0 Project Co-benefits: Opportunities to Improve Environmental and Social Impacts

5.1 Environmental Co-benefits

The long-term environmental co-benefits of the Project are expected to be significant. The increased availability and use of actionable climate information can enhance natural resource management, from climate risk-informed policymaking to conservation and arresting biodiversity loss.

The Project will support Timor-Leste's national meteorological service (DNMG) to generate and deliver impact-based forecasts, decision-support systems and advisories tailored to natural resource-dependent sectors – such as agriculture and fisheries – that will facilitate the rapid identification of weather, water and climate hazards that pose environmental risks and consequently inform the safeguarding of natural resources and biodiversity. Strengthened data sharing and inter-institutional coordination with the Water Sector, as well as the provision of data inputs to enhance the accuracy of flood hazard mapping and modelling, will contribute to improved water resource management and management of hydrological risks. In addition, the establishment of marine forecasting will support improved management of coastal habitats and inform sustainable fisheries practices to minimise environmental impacts.

Air pollutants can have severe impacts on ecosystem function and contribute to biodiversity loss. For example, chemical transformations of nitrogen oxides in the atmosphere and subsequent deposition causes acidification and eutrophication of soil and water bodies respectively, which in turn affect productivity and plant growth. The Project will establish a high-resolution air quality monitoring and alerting framework that will provide multiple pathways for the Government of Timor-Leste to reduce climate change and air pollution impact through evidence-based mitigation policy and interventions.

With regard to the energy sector, detailed climate and air quality information is necessary for comprehensive environmental impact assessments and can inform energy management decisions to improve efficiency and reduce greenhouse gas emissions.

At the local level, the Project will raise awareness on weather, water and climate hazards and related risks, including to environmental health, and will build preparedness capabilities for effective early action in response to hazard warnings. Moreover, through training on the use of climate forecasts, the Project will sensitise communities to the value of climate information and early warnings towards reducing the impact of climate-related hazards, including on natural resources, ecosystems and biodiversity. This will contribute to enhanced local ownership for environmental protection and resilience building of natural environments.

At the global scale, the increased generation of essential surface-based observation data will enhance global forecasting capabilities, which in turn will improve the ability to predict and mitigate the impacts of impending environmental hazards across the world.

Moreover, the Project design emphasises alternatives to international travel, when possible. Capacity building that can be undertaken by in-country staff or delivered remotely will be the preferred option. When international travel is necessary, the Project activities will seek to consolidate the travel to avoid multiple missions. With respect to national travel, consultants will be encouraged to use low-emission vehicles, when they are available, and plan workshops in central locations to avoid unnecessary travel.

5.2 Social Co-benefits

The Project interventions have many inherent social co-benefits, particularly with regard to positive impacts on health and population well-being. Climate and health are inextricably linked. There is an increasing demand for relevant, timely and usable information about weather and climate variability, change, risks and impacts to improve decision-making for enhanced resilience. There is also an urgent need to correlate these factors with air pollution – the world’s largest single environmental health risk³² – and to enhance joint action between the meteorological, climate and health communities to understand and reduce the health risks of poor air quality. This requirement for “focusing action on upstream determinants of health, the environment and determinants of climate change in an integrated and mainstreamed approach across all sectors” is emphasised in the World Health Organization (WHO) Global Strategy on Health, Environment and Climate Change 2019.

In the case of the health sector, the Project will create an enabling environment for coordinated and sustained collaboration between climate and health experts and decision-makers to enhance understanding and application of climate knowledge for health – facilitating targeted interventions that save more lives, reduce disease burden, and enable cost savings in service delivery. The establishment a national Climate and Health Working Group will be key in this regard. The Project will work with DNMG and the Ministry of Health to co-develop tailored forecasting and a sector-specific decision support system, together with a mobile app to extend the reach of health-related forecasts and advisories to the general public. Continuous engagement of multi-sectoral and multi-disciplinary stakeholders along the climate services for health value chain will enable identification of health priorities and development of the most appropriate services to address these priorities; increase participation and ownership; improve perceptions towards the value of climate services; build in-country capacity; and align stakeholders’ objectives and expectations.³³

A high-resolution spatiotemporal hybrid air quality monitoring system for fine particulate matter (PM_{2.5} / PM₁₀) and nitrogen dioxide (NO₂) – a precursor for PM_{2.5} and ozone (O₃) – will be established in the capital city of Dili, with data feeding into a customised mobile application for air pollution warnings, forecasting and health impact advisory. In the longer term, the data will inform evidence-based air quality management policies and enable Timor-Leste to reduce its air pollution. Whilst its Intended Nationally Determined Contributions (INDC) do not require Timor-Leste to report on steps to reduce short-lived climate pollutants (SLCPs) – even though meeting

³² WMO, 2014. Air Quality and Human Health, a Priority for Joint Action. Available at: <https://public.wmo.int/en/resources/bulletin/air-quality-and-human-health-priority-joint-action>

³³ WMO and WHO, 2016. Climate Services for Health

the targets of the Paris Agreement is likely impossible without cutting SLCP emissions³⁴ – acting quickly to reduce SLCP emissions will benefit human health immediately and slow the rate of near-term warming.³⁵ Moreover, this intervention will support achievement of SDG target 11.6 *“By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality...”*, indicator 11.6.2 *“Annual mean levels of fine particulate matter (e.g., PM2.5 and PM10) in cities (population weighted)”*. It also contributes to the aims of the WMO Global Atmosphere Watch (GAW) Programme to provide information and services on atmospheric composition to the public and to decision-makers relating to urban air pollution, especially fine particles, which is affecting human health.

Moreover, the implementation of end-to-end early warning systems will contribute to reducing harm to populations and destruction of property through improved disaster preparedness capabilities. Prevention and timely action will likely lower mortality rates and contribute to the improvement of safety, particularly within isolated and/or coastal communities. This should reduce the costs associated with recovery actions, and consequently, have a positive economic impact (see economic co-benefits below).

At the community level, the Project will conduct targeted awareness-raising and education on climate-related health risks, as a key trigger in encouraging protective behaviours and increasing collective local capacity to prepare for and manage climate impacts. Moreover, the Project will build capacity to understand and use weather, water and climate forecasts and identify climate risks. This will enhance local knowledge and empower communities to increase their resilience to climate change impacts. Avoided loss of assets and livelihood sources will help to alleviate poverty in beneficiary communities through reduced loss of income. Social cohesion will be promoted through community-based interventions and co-development of localised climate risk management plans.

In addition, the Project activities will create employment opportunities for national employees, particularly through hiring local consultants who will be employed by civil society organisations and government institutions. Local businesses will also benefit, as catering services, conference venues and interpreters will be employed as part of the workshop activities. Lastly, GCF and UNEP labour standards will be integrated into the Project interventions, thus ensuring international best practices regarding safety and labour standards for activities that involve small-scale construction.

5.3 Economic Co-benefits

The Project will contribute to reduced economic damage and loss in Timor-Leste through enhanced preparedness to extreme events and climate risk-informed decision-making and actions. High-resolution baseline data, hazard information and vulnerability assessments will be integrated into targeted early warning and decision-support systems to enhance the climate resilience of sectors and communities. Early warning systems are reported to save lives and

³⁴ BBC, 2019. Cut air pollution to fight climate change – UN. Available at: <https://www.bbc.co.uk/news/science-environment-49134175>

³⁵ WHO, 2018. First WHO Global Conference on Air Pollution and Health. Climate change and air pollution: two sides of the same coin. Available at: https://www.who.int/airpollution/events/conference/Climate_change_background.pdf

assets worth at least ten times their cost. Just 24 hours lead-time of an impending storm or heatwave can reduce the consequent damage by 30 percent.³⁶ In addition, the Project will establish capacity for Forecast-based Financing (FbF) to enhance preparedness and ensure sustainable funding for pre-planned disaster risk management actions. FbF improves the efficiency of those implementing interventions³⁷ and has been shown to minimise damage and loss caused by climate-related hazards and reduce the need for humanitarian assistance in the aftermath.³⁸

It should be noted that the economic benefits for the Project (see Annex 3 – Economic Analysis) are underestimated, both due to analyses having been done following conservative assumptions and because there are economic benefits that are difficult to measure and/or are derived in the long-term. For example, the use of more accurate climate forecasts will reduce income uncertainty and contribute to smoothing consumption. Most importantly, early warning systems save lives and this is arguably impossible to translate to dollar terms. In the longer term, climate-sensitive sectors will be facilitated to make better informed investments that will yield long-term economic benefits. Reducing uncertainty is also shown to have direct positive effects on individual welfare.³⁹ There are different methods to quantify the value of climate services – including decision theory, avoided cost calculations, partial equilibrium models, game theory, contingent valuation, benefits transfer, and econometric models. The combination of these evaluations, provided that they do not overlap, contribute to improved understanding of the whole spectrum of potential benefits. For the Project’s Cost-Benefit Analysis (Annex 3), the avoided cost calculations method was deemed most suitable as it is consistent with previous evaluations performed in Timor-Leste, and in the Pacific islands.

5.4 Gender-Responsive Co-benefits

The Project will facilitate gender-responsive development in Timor-Leste through the mainstreaming of gender considerations throughout its design, implementation, monitoring and evaluation – as detailed in the Gender Assessment and Gender Action Plan (Annex 8). This will ensure that gender concerns are addressed and that existing gender equalities are not reinforced, thus maximising the outcomes and transformative impact of the Project.

The Project will aim to:

1. Raise gender awareness and increase understanding at national, sectoral and community level of the differential impacts of climate change on women and men.
2. Address the climate vulnerabilities of both women and men through meaningful stakeholder engagement and the delivery of climate information and early warning services tailored to the specific needs of end-users.

³⁶ Global Commission on Adaptation, 2019. Adapt Now: A Global Call for Leadership on Climate Resilience

³⁷ UNEP, 2021. Adaptation Gap Report 2020

³⁸ WFP, 2019. Forecast-based Financing Factsheet. Available from: <https://www.wfp.org/publications/forecast-based-financing-factsheet>

³⁹ Alem, Y. and Colmer, J., 2015. Consumption smoothing and the welfare cost of uncertainty. Centre for Climate Change Economics and Policy Working Paper No. 138. Grantham Research Institute on Climate Change and the Environment Working Paper No. 118.

3. Promote the empowerment of women through equal representation and participation in planning, decision making, capacity building and skills development.

Full details of the gender-responsive strategies and actions to be incorporated and implemented in the Project are provided in Annex 8.

6.0 Conclusions and Recommendations

The purpose of this ESS Screening is to evaluate the environmental and social risks associated with the proposed activities for this Project. As per the foregoing analysis, this Project has been assessed as Category C: Projects with Activities with minimal or no adverse environmental and/or social risks and/or impacts. As such, no further actions are required with respect to preparing an Environmental and Social Impact Assessment or Environmental and Social Management Plan. Notwithstanding this fact, this ESS Screening has noted some potential impacts that will require monitoring and assumes that best practices will be implemented when deploying the hydrometeorological equipment. The Project Management Unit, as well as the National Directorates responsible for the Project activities, must remain vigilant throughout the Project cycle, and the Stakeholder Response Mechanism will as well be available for Project-affected Communities. Overall, the negative environmental and social impacts of this Project will likely be minimal, while the Project's positive effects should be significant.