



Enhancing Early Warning Systems to build greater resilience to hydro-meteorological hazards in Timor-Leste

- Timor-Leste is a Least Developed Country (LDC) and a Small Island Developing State (SIDS) whose infrastructure and governmental systems were devastated by a 25-year war of independence. **Timor-Leste is highly vulnerable to both extreme climate and slow-onset events, with very limited capacity to prepare for and recover from climate impacts.** As these events increase in frequency and intensity, Timor-Leste needs accurate, timely and actionable information and early warnings on local weather, water, climate and ocean conditions and related risks to human and environmental health.
- Approved at the 30th meeting of the Green Climate Fund (GCF) Board, this USD 21.7 million Project ([FP171](#)) will address the urgent need for integrated and end-to-end **climate information services and multi-hazard early warning systems (MHEWS)** through comprehensive institutional, technical and technological capacity building from national to local level to generate and disseminate robust climate data and information at all stages of the climate services value chain.
- This Project is **country-driven and responds to needs identified by Timor-Leste** (the Project is specifically mentioned as a priority in [Timor-Leste's 2021 National Adaptation Plan](#)).
- The Project will directly contribute to the attainment of selected targets and indicators of Article 7 of the Paris Agreement, Sustainable Development Goal (SDG) 13 on Climate Action, SDG 3 on Good Health and Well-Being and the Sendai Framework for Disaster Risk Reduction.

Why has Timor-Leste prioritised Climate Information and Early Warning Systems?

- Enhanced climate data, information and knowledge underpins **increased resilience and adaptive capacity to climate change and climate-related hazards** of vulnerable sectors – including health, agriculture, disaster risk reduction, water, and environmental management – and communities across Timor-Leste.
- **Early Warning Systems facilitate effective disaster risk reduction and climate change adaptation.** They will empower vulnerable Timorese to initiate timely and appropriate actions to reduce the impact of climate-related hazards and extreme weather events.
- **Climate services investments have an overall cost benefit ratio of one to 10.** Systematic investment in the cascading global-regional-national hydrometeorological system that underpins climate services outweighs the costs by about 80 to one ([WMO, 2019](#)).
- As emphasised in [Timor-Leste's 2021 Flood Response Plan](#), without transformation at scale of Timor-Leste's climate information services, early warning systems and disaster risk reduction mechanisms, climate change will further

What is the expected impact of the Project?

- The Project aims to deliver **transformative impact to the entire population of Timor-Leste**, including 1.03 million as direct beneficiaries (80% of the population).

exacerbate existing vulnerabilities and hamper the country's recovery from COVID-19 and future development.

What will the Project do?

- **Facilitate a paradigm shift to evidence-based planning and early action for climate resilience** through accurate, timely and actionable climate information, impact-based forecasting and people-centred MHEWS.
- **Strengthen delivery and legislation for integrated climate information and multi-hazard early warning services** through enhanced inter-institutional coordination and collaboration and the development of a National Framework for Climate Services (NFCS) (based on the Global Framework for Climate Services (GFCS)) to improve use of climate information and facilitate provision of best practice climate services.
- **Strengthen observations, monitoring, analysis and forecasting of weather, water, and climate** through the establishment of a national Forecasting Centre and upgrades to the hydro-meteorological observation network in Timor-Leste to ensure compliance with the internationally approved Global Basic Observing Network (GBON) standard. This will facilitate timely warning of climate risks and hazards that enable vulnerable communities to take early action.
- **Establish climate services for health** as a critical priority to address increasing climate-related health risks.

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- **Establish innovative Impact-based forecasting and Forecast-based Financing (FbF) approaches** to facilitate climate-resilient early action as a means of enhancing preparedness and ensuring sustainable funding for pre-planned disaster risk management actions, as well as minimising loss and damage caused by climate-related hazards.
- **Improve dissemination and communication of risk information and early warning** through the development of end-to-end people-centred MHEWS that are targeted to the differential vulnerabilities of specific population groups (for example, through the development of gender-responsive communication strategies) to ensure that early warning messages reach the last mile.
- **Build climate risk management capacities at all levels** (from national government services to communities at the last mile) to prepare for and manage climate risks and hazards, and related health impacts.

Partners

- The Project will be implemented by a broad coalition of local and international partners, including:



[National Executing Entity: Timor-Leste Secretary of State for the Environment \(SSE\)](#)



[Food and Agriculture Organization \(FAO\)](#)



[Indonesian Meteorological, Climatological and Geophysical Agency \(Badan Meteorologi, Klimatologi dan Geofisika – BMKG\)](#)



[International Centre for Theoretical Physics \(ICTP\)](#)



[International Federation of Red Cross and Red Crescent Societies \(IFRC\)](#)



[Regional Integrated Multi-Hazard Early Warning System for Africa and Asia \(RIMES\)](#)



[World Meteorological Organization \(WMO\)](#)