

Climate Early Warning and Capacity Building



UN
environment
programme



E A R L Y W A R N I N G A N D D A T A A N A L Y T I C S

Transforming the lives of People, Places and Planet

Introduction

The **Climate Early Warning and Capacity Building Unit** focuses on strengthening country capacities for the collection, management, and use of climate and environmental data, information, and knowledge for data-driven climate information services, early warning systems, and evidence-based climate action.

UNEP's Medium-Term Strategy 2022-2025 identifies unsustainable patterns of consumption and production as the main driver of the triple planetary crisis, which encompasses climate change, biodiversity and nature loss, and pollution and waste. While these three crises are interconnected, **climate change** plays a crucial role in exacerbating the other two. UNEP therefore identifies Climate Action as a critical priority and commits to supporting capacities for Early Warning and Early Action to optimize prevention and preparedness. Due to human-induced climate change, hazardous weather conditions and events are becoming more frequent and more extreme. Climate Information and Early Warning Systems are crucial in warning countries of impending hazards such as storms, floods, droughts, or extreme temperatures.



Training of ocean officers on marine equipment installation, usage and maintenance



Engaging with community stakeholders to inform more inclusive warning communications in Timor-Leste

Core **components of the Unit's initiatives** include strengthening institutional frameworks for Climate Information Services and Multi-Hazard Early Warning Systems, enhancing capacities for monitoring, analysis and forecasting of climate change and its impacts, improving dissemination and communication of risk information and early warnings, and enhancing climate risk management capacities. The Unit also works more generally to promote an inclusive Science-Policy interface in countries through well-informed decisions on environmental issues supported by environmental information systems, data sharing and reporting, as well as the consolidation of regional and sub-regional networks focused on environmental information.

Functions of the Unit

One of the key functions of the Unit is to establish, upscale, and strengthen end-to-end **Climate Information Services and Multi-Hazard Early Warning Systems** (MHEWS) to enhance resilience and adaptive capacity. This contributes to saving lives, livelihoods, and ecosystems in the face of climate-related hazards.

Furthermore, MHEWS are a proven cost-effective disaster risk reduction measure and help reduce loss and damage. Estimates show that a 24 hours' notice of an impending hazardous event could reduce damage by 30 percent, while investing US\$800 million in MHEWS in developing countries could prevent losses of up to US\$ 16 billion annually.

Currently, only half of countries worldwide and one-third of Small Island Developing States (SIDS) report being equipped with the capability to alert their citizens about impending hazardous environmental conditions.

The **Early Warnings for All (EW4All)** initiative aims to ensure that everyone on Earth is protected from hazardous climate events through early warning systems by 2027.



Installation of an Automatic Weather Station in Niue

The EW4All initiative articulates four pillars for the implementation of MHEWS:

- (1) Disaster risk knowledge and management: *ensure all countries have access to risk information, science, and expertise.*
- (2) Detection, observation, monitoring, analysis, and forecasting: *ensure all countries have forecast and monitoring systems and enable policies to support hazard monitoring and early warning systems.*
- (3) Warning dissemination and communication: *ensure that early warnings are effectively and timely disseminated to reach everyone.*
- (4) Preparedness and response capabilities: *ensure local governments, communities, and individuals at risk have the knowledge and means to take pre-emptive early actions to prepare for and respond to incoming disasters.*

The implementation of the initiative EW4All in **Maldives** – one of the most vulnerable countries to the climate crisis – shows that Multi-Hazard Early Warning Systems (MHEWS) save lives, reduce economic losses, and provide a nearly tenfold return on investment. The Unit is closely involved in this initiative and collaborates with local stakeholders and global partners to strengthen Maldives' early warning systems to increase its adaptive capacity.



Strengthening capacity for marine observation in Tuvalu



The Climate Early Warning and Capacity Building Unit represents UNEP in global partnerships and key initiatives related to Climate Information Services and MHEWS, including the EW4All initiative, the Systematic Observations Financing Facility (**SOFF**), and others. To this end, the Unit supports the most vulnerable countries **to close critical weather and climate data gaps**, which enables the development of better national and global weather forecasts, climate services and early warning systems.

Another function of the Unit pertains to **Capacity Development for an inclusive Science-Policy Interface** by supporting countries in developing and utilizing national environmental data systems for more effective policymaking, ultimately empowering countries to address the triple planetary crisis – climate change, loss of nature and biodiversity, pollution and waste.

Flagship initiatives led by the Unit include a \$49.9 million programme on **Climate Information and Knowledge Services in five Pacific Island Countries** and a \$21.7 million project to enhance **Early Warning Systems in Timor-Leste**, both supported by the Green Climate Fund (**GCF**). Eight more project proposals under the GCF portfolio are in various stages of development. The Unit is the implementing entity for projects in 12 countries across Africa, Asia and the Pacific supported by the Systematic Observations Financing Facility (**SOFF**), and for 6 projects encompassing 19 countries funded by the Global Environment Facility (**GEF**). The Unit also coordinates support to 10 countries on Shared Environmental Information Systems (**SEIS**) with funding from the European Commission (**EC**), with related regional activities open to all countries in five regions – Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, and West Asia.

UNEP and UN System Engagements

Within UNEP, the Climate Early Warning and Capacity Building Unit closely collaborates with **all six Regional Offices** to ensure tailored and demand-driven approaches in line with national and regional priorities.

Working across the **wider UN system**, the Unit engages with UN Country Teams (**UNCTs**) and other UN entities – including the Food and Agriculture Organization (**FAO**), the UN Office for Disaster Risk Reduction (**UNDRR**), the UN Office for Project Services (**UNOPS**), and the World Meteorological Organization (**WMO**) – to ensure strategic alignment and coordinated country-level support.

Partnerships

UNEP's work on Climate Information and Early Warning Systems is anchored in a **coalition of partners** from national to regional to international level. At the national level, the Unit works with a variety of local stakeholders – for instance the National Disaster Management Authorities, the National Meteorological and Hydrological Services (NMHSs) and Civil Society Organizations.

Moreover, the Unit's portfolio contributes to and engages with other entities within global partnerships of which UNEP is part of; other than the previously mentioned partnerships – EW4All, SOFF, and REAP – the Unit drives UNEP's involvement in the Alliance for Hydromet Development, and works closely with the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), amongst others.



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Contact: jochem.zoetelief@un.org



data.unep.org