

1) Early Warning Systems

The UN Climate Change Conference (COP29) will take place in Baku, Azerbaijan, from November 11-22. Governments and world leaders will need to seize the conference as an opportunity to accelerate action on climate adaptation and build resilience against the growing impacts of climate change. An estimated 70,000-80,000 people are expected to attend, representing a wide range of interests and stakeholders.

This factsheet series looks at of the major adaptation themes and topics that experts expect to see at COP29: 1) Early Warning Systems; 2) Global Goal on Adaptation; 3) National Adaptation Plans; 4) Loss and Damage; and 5) Adaptation Finance.

Background

- Early Warning Systems (EWS) provide timely and effective climate forecasts to alert communities, allowing them to act in advance and reduce the risks from climate-related hazards.
- Both Article 7 and Article 8 from the 2015 Paris Agreement recognize early warning systems as a key adaptation strategy for averting, minimizing and addressing loss and damage.
- Just under half of the world's countries are still not covered by early warning systems.
- The Early Warnings for All initiative (EW4All) was launched by the UN Secretary-General in November 2022 at COP27. The Initiative calls for the whole world to be covered by an early warning system by the end of 2027. UNEP is one of the implementing partners under the initiative.
- Just under half of the world's countries, mainly in least developed countries and small island developing states, are still not covered by early warning systems (United Nations Office for Disaster Risk Reduction & World Meteorological Organization 2023). Investing in EWS generates an average of 9 dollars of total benefits for every dollar spent (Global Centre on Adaptation 2019).
- Just 24 hours warning of an approaching storm or heatwave can reduce the consequent damage by 30 per cent (Global Centre on Adaptation 2019).
- In developing countries, spending USD 800 million on EWS could avoid USD 3–16 billion per year in losses (Global Centre on Adaptation).

Key Messages

- **EWS are a proven, efficient and cost-effective** climate adaptation measure for saving lives and livelihoods.
- **EWS should be simple and accessible**, including for those with disabilities, and must be established as a preventative measure as early as possible instead of waiting until after a climate disaster has occurred.
- **Progress with EWS is important for the Global South**, which faces a disproportionate share of the climate change impacts while having a limited capacity to develop and deliver services.
- **Transboundary climate risks can ripple across borders**, ecosystems and sectors, impacting distant communities.
- **EWS should be established to detect a range of climate hazards** to maximize effectiveness, ranging from floods to extreme heat, droughts and the risk of wildfire.

Key Data

- Countries with robust coverage of multi-hazard early warning systems experience mortality rates that are 8 times lower than those with limited or no early warnings (World Meteorological Organization 2023).

What Happened At COP28?

- The Global Stocktake (Decision 1/CMA/5) invites "development partners, international financial institutions and the operating entities of the Financial Mechanism to **provide support for implementation** of the Early Warnings for All initiative." It also acknowledges that establishing and improving national inventories of climate impacts over time and building accessible, user-driven early warning systems can strengthen the implementation of adaptation actions.
- The **Global Goal on Adaptation** (Decision 2/CMA.5) from COP28 includes the target that "by 2027 all Parties have established multi-hazard early warning systems, climate information services for risk reduction and systematic observation to support improved climate-related data, information and services."
- COP28 saw renewed **commitments to expand EWS**, with significant financial pledges from developed countries to support capacity-building in least developed countries and small island developing states. Specific commitments were made to finance the **Early Warnings for All (EW4All)** initiative, which aims to ensure that every person on the planet is protected by early warning systems by 2027.
- During COP28, the World Meteorological Organization and the United Nations Office for Disaster Risk Reduction launched the **Global Status of Multi-Hazard Early Warning Systems 2023**, which outlines the progress that has been made under the EW4All initiative.

Further Reading

[UNEP's work on Early Warning Systems](#)

[Lessons Learned: Building Climate Resilience in Lesotho with Early Warning Systems](#)

[WASP Brief #4 - Early warning systems for adaptation](#)

[Story: An early warning system for disasters takes shape in Timor-Leste](#)

[Azerbaijan to strengthen climate resilience through early warning systems](#)

[RESILIENCE: The Global Adaptation Podcast \(Episode 1: Saving Lives\)](#)

[Global Status of Multi-Hazard Early Warning Systems 2023](#)

UNEP Contact:

UNEP Climate Adaptation

UNEP-Climate-Adaptation@un.org

What To Expect at COP29

- A key point of negotiation at COP29 will be **establishing binding commitments** for global access to early warning systems by 2027.
- Discussions will focus on **mobilizing climate finance** specifically to support the infrastructure for early warning systems in vulnerable regions.
- Member states will negotiate the inclusion of early warning services as a formal component of their **Nationally Determined Contributions (NDCs)**.
- The **COP29 day for Science, Technology and Innovation** will be taking place on 16 November.

What Is UNEP Doing? - [link](#)

- **Increasing Access and Coverage** – In line with its Medium-Term Strategy, UNEP works all over the world to increase access to high-quality weather and climate information, forecasting and EWS to strengthen disaster preparedness and improve local adaptation efforts. These EWS in turn underpin evidence-based policy and action. Core components of UNEP's initiatives include strengthening institutional frameworks for climate information and multi-hazard EWS, developing capacity for country ownership of EWS, and enhancing capacity for the monitoring, analysis and forecasting of climate and its impacts.
- **Partnerships and Networks** – UNEP is one of the implementing partners under the EW4All initiative and is actively taking part in the world of technical groups under Pillar 1 (risk knowledge and management) and Pillar 2 (observations and forecasting). In addition, UNEP plays a prominent role in the following global EWS initiatives:
 - [Systematic Observations Financing Facility](#)
 - [Alliance for Hydromet Development](#)
 - [Risk-informed Early Action Partnership \(REAP\)](#)

