

Early Warning for Environment

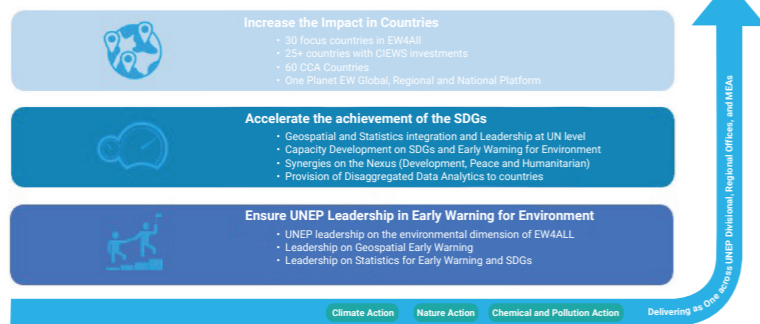
Saving Lives. Protecting Property, Loss and Damage. For People Places and Planet.



Early Warning is a powerful tool for leveraging Humanity's ability to think about and build the future. It provides a way to think about possible, alternative, and desired futures and scenarios. By doing so, it enables individuals, organizations, and nations to prevent, prepare for, respond, and recover from events and build a better future. In the coming decades, Humanity is likely to face significant challenges with a more complex, unstable, and uncertain future. Exploring the capabilities of Early Warning for People, Places and Planet, is opportune in this time of dynamic change.

UNEP's Strategic Goals and Priorities Early Warning and Data Analytics

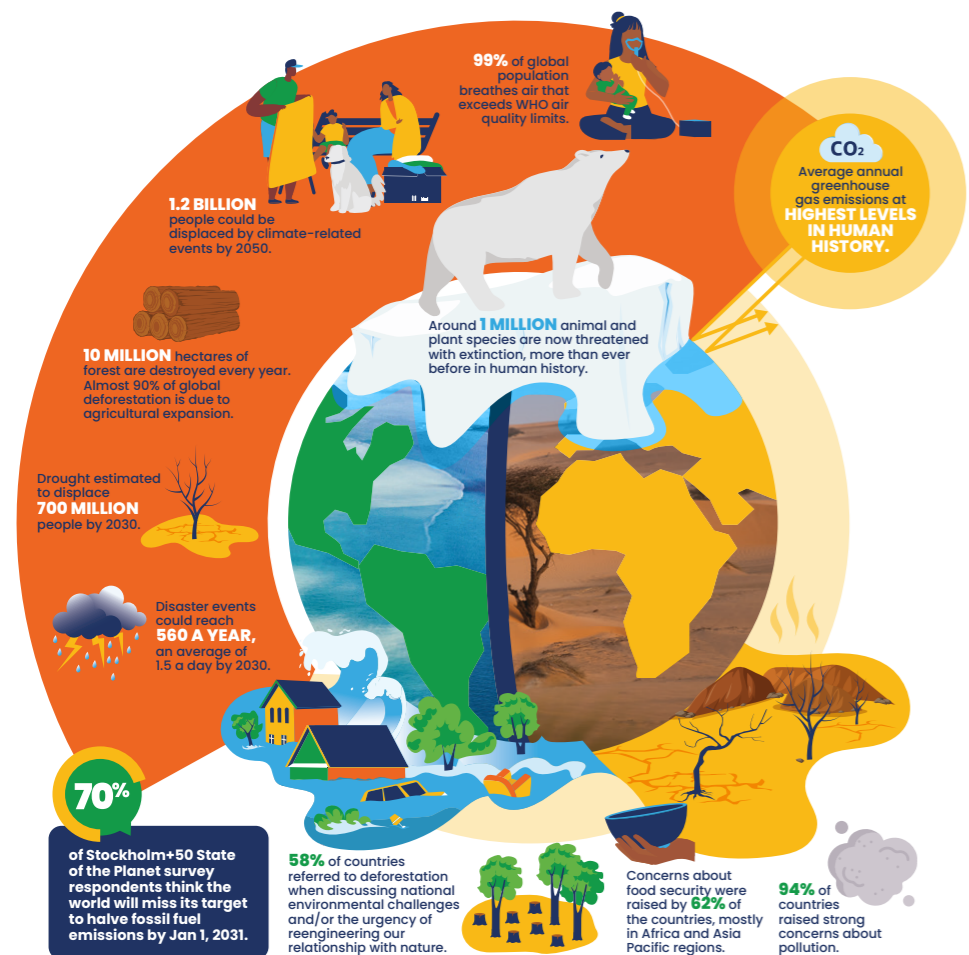
Strengthen the environmental dimension of Early Warning towards acceleration of the achievement of Agenda 2030 and the Sustainable Development Goals (SDGs)



UNEP is building a ONE UN Common Approach for Early Warning for Environment (EWE) to tackle the triple planetary crisis of climate change, biodiversity loss and pollution, within the umbrella of Early Warning for All Initiative: To build solutions at scale contributing to accelerate Agenda 2030 and the Sustainable Development Goals (SDGs); focus on impacting in countries, implementing the environmental dimension of early warning throughout the risk management cycle, with a particular focus on developing countries and the most vulnerable communities, saving millions of lives and property, people, places, and the Planet; and adopt a multi-stakeholder approach with a user driven strategy and build on existing Partnerships across the UN system and beyond including the private sector and citizens and civil society.

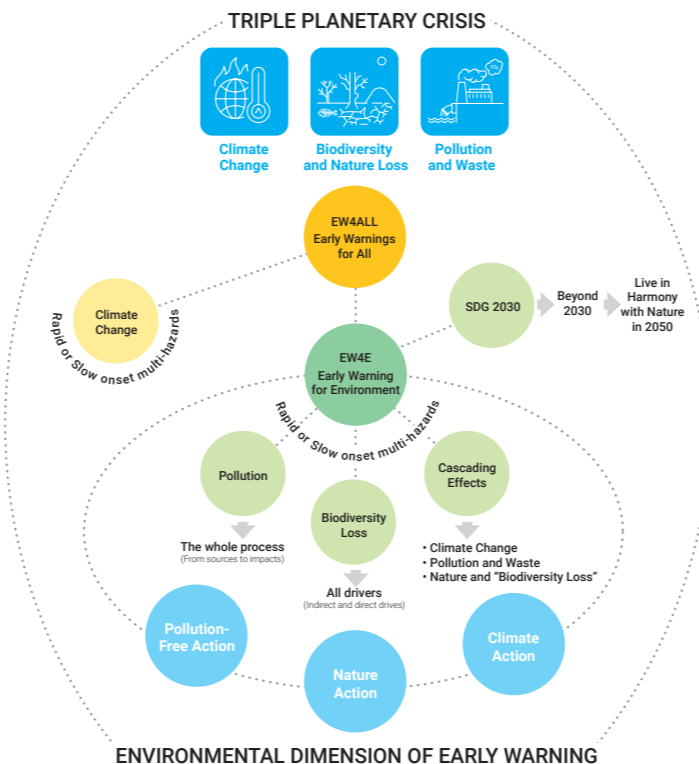
EWE strengthens the environmental dimension of Early Warning as a critical enabler for accelerating the achievement of Agenda 2030 and the implementation of the SDGs and contribute to mitigate the impacts of the triple planetary crisis. It consists of identifying, monitoring, and analysing both rapid and slow onset multi-hazards but continuous hazards and their interlinkages or issuing warnings of future events that come early enough for one to prepare, respond and recover, Building Back Better. Leaving No One Behind.

A complex, uncertain and unstable Future for People, Places and Planet



Sources: IPCC, Climate Change 2022, Mitigation of Climate Change; UN, The Sustainable Development Goals Report 2022; Internal Displacement Monitoring Centre, Global Report on Internal Displacement 2022; World Economic Forum, Climate Refugees - The World's Forgotten Victims, 2021; WHO, Air Quality Database, 2022; Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Global Assessment Report, 2019.

Saving the Lives of billions of People and preventing socio economic losses, protecting the property of the most vulnerable communities in the world



<p>Disaster risk knowledge Systematically collect data and undertake risk assessments</p> <ul style="list-style-type: none"> Are the hazards and the vulnerabilities well known by the communities? What are the patterns and trends in these factors? Are risk maps and data widely available? 	<p>Detection, observations, monitoring, analysis and forecasting of hazards Develop hazard monitoring and early warning services</p> <ul style="list-style-type: none"> Are the right parameters being monitored? Is there a sound scientific basis for making forecasts? Can accurate and timely warnings be generated?
<p>Preparedness and response capabilities Build national and community response capabilities</p> <ul style="list-style-type: none"> Are the response plans up-to-date and tested? Are local capacities and knowledge made use of? Are people prepared and ready to react to warnings? 	<p>Warning dissemination and communication Communicate risk information and early warnings</p> <ul style="list-style-type: none"> Do warnings reach all of those at risk? Are the risks and warnings understood? Is the warning information clear and usable?

Early Warnings for All is co-led by WMO and UNDRR and supported by pillar leads ITU and IFRC. UNEP is one of its implementing partners

Why Early Warning for Environment?

- Examples of Air pollution impacts:**
 - Loss of lives: > 6.7 million people/year, 91% of those premature deaths occurred in low- and middle-income countries (WHO,2022)
 - 99% of people on the planet breathe polluted air (WHO,2022)
 - Economic loss: \$ 8.1 trillion, equivalent to 6.1% of Global GDP (WB Report 2022 - The Global Health Cost of PM2.5 Air Pollution)
- The key numbers on nature and biodiversity loss are below:**
 - Facts about the nature crisis:** We are experiencing a dangerous decline in nature, and humans are causing it:
 - We are using the equivalent of 1.6 Earths to maintain our current way of life and ecosystems cannot keep up with our demands. (Becoming Generation Restoration, UNEP)
 - One million of the world's estimated 8 million species of plants and animals are threatened with extinction. (IPBES)
 - 75 percent of the Earth's land surface has been significantly altered by human actions, including 85 percent of wetland areas. (IPBES)
 - 66 percent of ocean area is impacted by human activities, including from fisheries and pollution. (IPBES)
 - Close to 90% of the world's marine fish stocks are fully exploited, overexploited or depleted. (UNCTAD)
 - Our global food system is the primary driver of biodiversity loss with agriculture alone being the identified threat 24,000 of the 28,000 species at risk of extinction. (Chatham House and UNEP)
 - Agricultural expansion is said to account for 70% of the projected loss of terrestrial biodiversity. (CBD)
 - Impacts of nature loss and degradation:** Nature loss has far-reaching consequences. Damaged ecosystems exacerbate climate change, undermine food security and put people and communities at risk.
 - Around 3.2 billion people, or 40 percent of the global population, are adversely affected by land degradation.
 - Up to \$577 billion in annual global crop production is at risk from pollinator loss.
 - 25 percent of global greenhouse gas emissions are generated by land clearing, crop production and fertilization.
 - Development is putting animals and humans in closer contact increasing the risk of diseases like COVID-19 to spread. About 60 percent of human infections are estimated to have an animal origin.
 - 100-300 million people are at increased risk of floods and hurricanes because of coastal habitat loss.
 - Declines in nature and biodiversity at current trajectories will undermine progress toward 35 out of 44 of the targets of SDGs related to poverty, hunger, health, water cities, climate, oceans and land.

Scope

EWE covers risks of Pollution and Waste, Nature and Biodiversity Loss, Cascading risks of triple planetary crises, and their Impacts and Risks on SDGs, with 4 critical Pathways:

- EWE on Pollution and Waste (Upstream & Downstream Pollution-Whole Processes Monitoring/Early Warning from source to impacts, focusing on cities, sectors, river basins;
- EWE on Nature and Biodiversity Loss - All major drivers count; focusing on Countries and Sites;
- EWE on Impacts of Climate Change/ Pollution/ Biodiversity Loss and their inter-linkages and cascading risks;
- EWE is critical to meet SDGs 2030 and Living in Harmony with Nature 2050.

In general, policymakers must consider five enabling conditions for the establishment and sustainability of a National Early Warning for Environmental System i.e. Awareness and demand, Policy and legislation, Institutional capacities, Technology and infrastructure and Finance conditions.

One UN Common Approach to Early Warning for the Environment

16 UN Agencies:

UNEP, WMO, UNDRR, ITU, IFRC, UNDP, FAO, WHO, IOM, UNDESA, OCHA, OICT, UN Global Compact, UNOPS, IPCC and GEF.

6 MEAs:

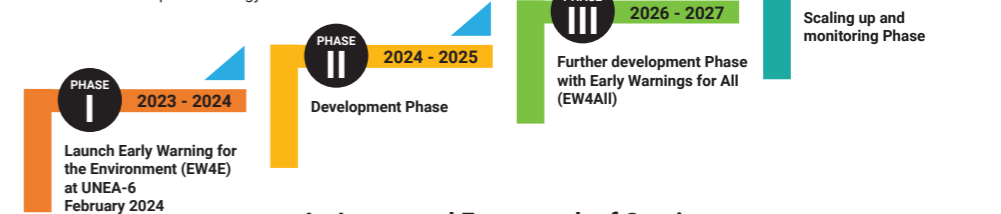
CBD, Ramsar, UNCCD, Basel, Rotterdam and Stockholm.

Countries share their views on Early Warning for the Environment

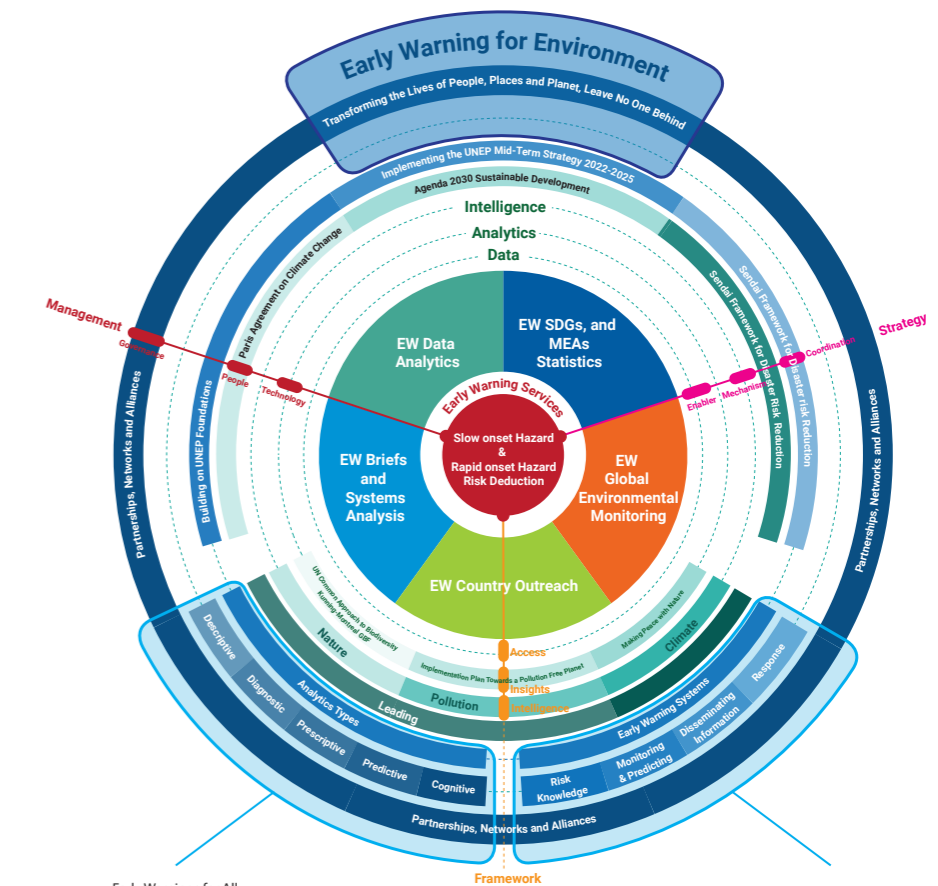
- Egypt** highlighted the urgent need for Early Warning for the Environment (EWE) to cover against nature/biodiversity loss & pollution, emphasizing digitalization's role in bridging the gap between science, policy, and investments.
- Japan** stressed the importance of integrating citizen science with digital advancements to strengthen EWE, aiming to create more resilient communities and emphasizing the importance of science-policy panels.
- The United Kingdom** underscored the critical need for EWE in safeguarding biodiversity, proposing the incorporation of cutting-edge technology to forecast environmental threats.
- Switzerland** highlighted its commitment to leveraging EWE for better pollution control and emphasized the need for policymakers to utilize science for informed decision-making.
- The European Commission** underlined the importance of the EWE approach for strengthening the resilience of ecosystems and societies to environmental risks.
- Singapore** described efforts to use digital twins for data acquisition and emphasized the role of EWE in urban settings, advocating for smart technology applications to monitor environmental health.
- St Kitts and Nevis** pointed out the significance of EWE in small island developing states, emphasizing community-driven approaches to combat the adverse effects of climate change.
- Italy** recognized the pivotal importance of integrating EWE within its cultural and natural heritage conservation efforts, advocating for the fusion of traditional knowledge and modern technology.
- Indonesia** called for the enhancement of EWE systems to address the dual threats of biodiversity loss and climate change, stressing the importance of local community involvement and digital innovations.

One UN Common Approach to EW4E Roadmap

Early Warning for Environment (EWE) will be developed in four phases within the Roadmap and Strategy



An Integrated Framework of Services



Implementation: a phased approach and milestones (2024-2030-2035)

e.g., EW on Air pollution - Phase I, 2024-2030

