

WMO inputs to the theme of the 2025 HLPF “Advancing sustainable, inclusive, science-and evidence-based solutions for the 2030 Agenda for Sustainable Development and its Sustainable Development Goals for leaving no one behind”.

(a) Your assessment of the impacts of the multiple and interconnected crises on the implementation of SDGs 3, 5, 14.

By its mandate, WMO works at the interface of the interconnected crises of climate change, extreme weather events, and environmental degradation which create significant barriers to the achievement of SDGs 3, 5, and 14.

Recent WMO State of Climate Reports catalogue climate extremes and hydrometeorological hazardous events such as heavy rainfall, floods, droughts, heatwaves, wildfires, and sandstorms across Africa with significant impact on the health sector. Rainfall variability and patterns, temperature change impact crop yield, pastures, hence food insecurity, malnutrition, poverty, health and wellbeing of society. The water and vector diseases are also affected with severe consequences on human and animal health. The increase of the atmospheric pollutants also seriously impact air quality and subsequently the respiratory diseases, human health and wellbeing.

The WMO "United in Science 2024" (UiS) report highlights how these interconnected crises significantly impact the implementation of several Sustainable Development Goals (SDGs), including SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), and SDG 14 (Life Below Water). Below are examples of how interconnected climate, extreme weather and environmental crises impact the three SDGs:

SDG 3: Good Health and Well-being

The UiS report underscores that climate change and extreme weather events are exacerbating health risks globally. Rising temperatures and extreme weather events, such as heatwaves, floods, and hurricanes, are leading to increased mortality and morbidity. For example, the report mentions that heatwaves in Asia in 2024 caused severe health issues, particularly for vulnerable populations like those living in refugee camps and informal housing. Climate change is altering the distribution of vector-borne diseases, such as malaria and dengue fever, as changing temperatures and precipitation patterns create more favourable conditions for disease vectors.

SDG 5: Gender Equality

The UiS report highlights that climate change and environmental degradation disproportionately affect women and girls, particularly in developing countries. Key impacts relate to the increased burden on women. Women often bear the brunt of climate-related disasters due to existing gender inequalities. For example, they are more likely to be responsible for securing water and food, which becomes more difficult during droughts or floods. Climate-induced displacement can exacerbate gender-based violence and limit women's access to education and economic opportunities. The report notes that informal settlements and Indigenous areas are particularly vulnerable to extreme weather events, which can disproportionately affect women in these communities. Furthermore, women and girls are also more vulnerable to the health impacts of climate change, such as malnutrition and waterborne diseases, due to their roles in caregiving and resource management.

SDG 14: Life Below Water

The UiS report emphasizes the severe impacts of climate change on marine ecosystems, which are critical for achieving SDG 14. In relation to ocean warming and acidification, the report notes that ocean heat content reached record highs in 2023, contributing to coral bleaching and the loss of marine biodiversity. Ocean acidification, driven by increased CO₂ levels, further threatens marine life, particularly shellfish and coral reefs. Rising sea levels, driven by melting ice sheets and thermal expansion of seawater, are threatening coastal ecosystems and communities. This can lead to the loss of critical habitats, such as mangroves and seagrasses, which are essential for marine biodiversity. Moreover, overfishing and pollution contribute to the interconnected crises exacerbating existing pressures on marine ecosystems, further undermining efforts to achieve SDG 14.

(b) Three key areas where sustainable, inclusive, science- and evidence-based solutions for achieving the SDGs and leaving no one behind are being effectively delivered, especially related to the cluster of SDGs under review in 2025, also bearing in mind the three dimensions of sustainable development and the interlinkages across the Goals and targets.

Establishment of a common framework for evidence synthesis and knowledge translation is a prerequisite for vigorous mechanisms that enable tracking of the extent and level that SDGs are delivered. It is based on such scientific approach that the reporting of SDGs can be unbiased and gender sensitive. Here are three examples:

Strengthening Climate and Weather Early Warning Systems: WMO leads global efforts to ensure universal access to early warning systems, protecting communities from extreme weather and climate-related disasters. Reliable meteorological and hydrological forecasts help prevent climate-induced health emergencies (e.g., heatwaves, infectious disease outbreaks) and mitigate economic disruptions in agriculture, fisheries, and infrastructure sectors.. Examples of how hydrometeorological services advance work on related SDGs include:¹

- Early warning systems help build the resilience and reduce exposure of the poor and vulnerable to climate-related extreme events.
- Gender sensitive EWSs support empowerment and safety by ensuring that evacuation and disaster preparedness plans address women's needs.
- Gender sensitive weather services help protect those with the lowest adaptive capacity to climate change impacts.
- Climate projections help understand adaptation measures that promote socioeconomic well-being in vulnerable populations.

Climate Services for Health, Agriculture and Water Management: WMO provides climate-informed health advisories, tracking air quality, heat stress, and disease vectors to support public health interventions. Climate-smart agriculture, enabled by seasonal forecasting and drought monitoring, improves food security and protects livelihoods. Ocean observation and data-sharing systems support

¹ Hydromet Gap Report 2024, World Meteorological Organization and Alliance for Hydromet Development, Box 1, page 9-10

sustainable fisheries and combat marine biodiversity loss. Examples of how hydrometeorological services advance work on related SDGs include:²

- EWSs for extreme temperatures enable preventative measures to be taken to minimize heat health risks.
- Real-time observations of aeroallergens provide information to allergy patients and health practitioners.
- Forecast services are used for agricultural planning, to determine planting dates and crop selection.
- Weather analytics are used to improve food supply chains and reduce waste.
- Hydrological services are essential for water resource management.
- Hydrological monitoring is used to identify pollutants and contamination, and to inform measures to safeguard water resources.

Advancing Global Partnerships and Capacity Building for Sustainable Development: WMO fosters open meteorological and climate data exchange to enhance disaster risk reduction and adaptation strategies. Training programs and technology transfer initiatives help national meteorological and hydrological services (NMHSs) improve forecasting capabilities and climate risk assessments.

Collaborations with businesses, financial institutions, and governments ensure investments in climate resilience, benefiting economic stability and social equity.

- The Early Warnings for All Initiative builds on and scales up existing efforts in early warnings, promoting synergies among initiatives and partnerships.
- The international hydrometeorological community works to mobilize resources to support weather, climate and water activities in developing countries.³

(c) Three examples of measures to accelerate progress towards SDGs through well-coordinated actions in key transitions to bring progress to scale (food security, energy access and affordability, digital connectivity, education, jobs and social protection, climate change, biodiversity loss and pollution), building on interlinkages between SDGs to ensure cohesive progress.

The WMO flagship report *United in Science* (2024) calls for urgent and ambitious climate action, enhanced adaptation measures, and the integration of diverse knowledge and perspectives to address these challenges. Without collective action, the impacts of interconnected crises will continue to undermine progress toward these critical SDGs, particularly for the most vulnerable populations.

Climate Action

1. Interdisciplinary science

Climate change and its consequent increase in the frequency of extreme events affects the most vulnerable populations. Climate action requires all available knowledge to monitor the Earth System, predict hazards that threaten life, livelihoods and the environment and take action. WMO provides technical expertise and support to more than 140 countries across the globe to strengthen their capacities in terms of observation, monitoring, forecasting and warning provision, with special emphasis on working with communities and decision makers. For example, in the Caribbean Small Island Developing States, WMO through extrabudgetary funding, strengthens Marine Services, supports the implementation

² Ibid.

³ Ibid.

of the Common Alerting Protocol, enhances capacities and awareness in lightning detection, implements the Severe Weather Programme, and aims at strengthening national capacities on hydrological forecasting and monitoring. All activities are implemented in strong collaboration with regional, national and local partners, while ensuring gender mainstreaming and the inclusion as well as strengthening of capacities of most vulnerable communities.

2. Gender

Actions to close the gender gap are a priority for the WMO as women, girls and diversities are highly affected by severe phenomena, putting their lives and development at risk. Among its priorities, WMO seeks to empower the voice of women in the earth sciences, strengthen leadership skills, promote greater gender balance in decision-making roles, and promote gender mainstreaming in the provision of hydrometeorological information. For example, in East Africa, during 2025, work will be undertaken with UN Women to strengthen gender actions in the strategic plans of institutions involved in climate action, reinforce regional strategies among Members, strengthen and develop capacity building activities on gender mainstreaming in Early Warning Systems, and promote partnerships with organisations working on gender at local and national levels.

In addition, the WMO technical commissions are implementing decisions on the provision of gender-responsive weather, hydrological and climate services. They are committed to promoting and monitoring the production of gender-responsive basic infrastructures and services, engaging with other United Nations bodies, as appropriate, regarding how to ensure a wider engagement and understanding of user needs, recognizing that women may obtain relevant information differently and have distinct needs and differing access to resources due to gender-based divisions of labour, patterns of mobility and socially-expected behaviour patterns. The two commissions also pledged to promote and monitor the production of gender-responsive services.⁴

This is aligned with the [WMO Gender Action Plan](#), updated and approved by the 19th WMO Congress in 2023.

3. Enhancing Digital connectivity and Education for Climate Action

WMO promotes the use of AI for numerical weather predictions and meteorological, climate and hydrological services.

The use of artificial intelligence (AI), big data, and digital platforms is further promoted to improve climate information accessibility and capacity-building. It improves access to life-saving early warnings, particularly for vulnerable communities, expands digital literacy and climate education, empowering communities to act on climate risks, strengthens international partnerships for technology transfer, ensuring equitable access to digital meteorological tools.

(d) Follow-up actions and measures being undertaken by your intergovernmental body or forum to support implementation of the 2023 SDG Summit Political Declaration and the outcomes of the 2024 Summit of the Future, to advance the implementation of the 2030 Agenda for Sustainable Development.

⁴ Annex to Decision 21 (INFCOM-2); Decision 20 (SERCOM-2), World Meteorological Organization

WMO is accelerating efforts to ensure that every country has access to life-saving early warning systems by 2027.

Measures Taken:

- Strengthening collaboration with UN agencies, governments, and private sector partners to expand early warning coverage.
- Enhancing capacity-building programs for National Meteorological and Hydrological Services (NMHSs) to improve forecasting and response systems.
- Supporting vulnerable communities in Small Island Developing States (SIDS) and Least Developed Countries (LDCs) with targeted adaptation strategies.

(e) Recommendations and key messages to be considered for inclusion in the Ministerial Declaration of the 2025 HLPF.

- Urge all nations to accelerate the implementation of the **Early Warnings for All (EW4All) initiative** to achieve universal early warning coverage by **2027**. Investing in meteorological and hydrological services is essential to protecting lives, reducing economic losses, and ensuring climate-resilient development.
- Strengthen national and regional **climate services** to support food security, water management, public health, and ocean sustainability. Science-based climate information must be embedded in economic planning, infrastructure development, and disaster risk reduction to enhance resilience and sustainable growth.
- Increase financial commitments for **climate adaptation**, particularly in Small Island Developing States (SIDS) and Least Developed Countries (LDCs). Expanding partnerships between governments, private sector, and international financial institutions is essential to mobilizing resources for climate adaptation and sustainable infrastructure.
- Expand **global ocean monitoring networks** to improve climate forecasting, biodiversity conservation, and disaster preparedness. The health of the oceans is critical to the survival of ecosystems, food security, and climate stability—stronger global collaboration is required for data sharing and marine conservation.
- Enhancing women’s participation in climate negotiations requires targeted initiatives. Empowering women through education and capacity-building in science diplomacy strengthens their role in climate policy and decision-making. Women’s political leadership is crucial for integrating gender-responsive approaches into global climate governance.
- Climate change is a threat towards better health and risk multiplier towards the attainment of SDGs. Serious adaptive measures need to be put in place to minimise this risk that can pull down all the developmental efforts of most vulnerable, in particular the LDCs and SIDSs.