

WMO Contribution to the 2022 HLPF Thematic Review

Background to this submission

The World Meteorological Organization (WMO) and its predecessor the International Meteorological Organization (IMO) has been providing for over a century essential worldwide leadership and coordination in support of nations’ responsibilities to provide weather, climate, water and related environmental services that protect lives, property and livelihoods. The WMO vision is strongly aligned to the 2030 Agenda for Sustainable Development, and is stated in the WMO Strategic Plan 2020-2023;

“By 2030, we see a world where all nations, especially the most vulnerable, are more resilient to the socioeconomic consequences of extreme weather, climate, water and other environmental events; and underpin their sustainable development through the best possible services, whether over land, at sea or in the air.”

The role of WMO remains to support the activities of its Members in understanding the past, monitoring the present and predicting the future state and interactions of the atmosphere, the hydrosphere and other vital elements of our planet, enabling adequate and effective preparedness, adaptation and response to related natural hazards and disasters. Effective weather and climate science, technology and services are an essential contributing part of a sustainable and resilient recovery from the COVID-19 pandemic, capable of delivering substantial social, economic and environmental benefits, spanning the 17 Sustainable Development Goals (SDGs) at a national, regional and global level.

Three areas of particular urgency are addressed in this submission i) the significant and increasing gaps in foundational observation data upon which weather and climate services are built, ii) the strong need for greater focus on water-related climate action, and iii) the continued and growing need for weather and climate services, particularly early warning services.

WMO Responses to the questions posed

A) Progress, experience, lessons learned, challenges and impacts of the COVID-19 pandemic on the implementation of SDGs 4, 5, 14, 15 and 17 from the vantage point of your intergovernmental body, bearing in mind the three dimensions of sustainable development and the interlinkages across the SDGs and targets, including policy implications of their synergies and trade-offs;

The COVID-19 pandemic posed significant challenges for the creation and delivery of weather, climate and water-related services – from basic observations and data transmission to forecast creation, and communication to end-users. Such services contribute to supporting the achievement of many of the SDGs, including, SDG 5, SDG 14 and SDG 15, of those which are under review in the 2021 HLPF.

Sustainable, reliable observations are an essential pre-requisite for all weather and climate data, predictions and services. We cannot manage what we do not measure. Significant impacts were recorded on the global observing system for weather, climate, water and ocean, which in turn affected the quality of forecasts and other services which are vital to protect lives and livelihoods and enhance well-being. The WMO Community of National Meteorological and Hydrological Services, Regional Climate Centres and Regional Specialized Meteorological Centres continued to work together throughout the pandemic to protect lives and livelihoods. Feedback from Members showed that despite the challenging circumstances, solidarity remained strong in the global community of National Meteorological and Hydrological Services and Members provided to support to those in need of assistance where possible.



Detailed information on the impact of the pandemic on observing systems, can be found in the multi-agency high-level compilation report, *United in Science 2020*¹, which WMO released in September 2020.

The 2021 edition of the *WMO Greenhouse Gas Bulletin*² showed that the economic slowdown from COVID-19 did not have any discernible impact on the atmospheric level of greenhouse gases and their growth rates.

B) Assessment of the situation regarding the principle of “leaving no one behind” against the background of the COVID-19 pandemic and for the implementation of the 2030 Agenda, within the respective areas addressed by your intergovernmental body;

WMO recognizes the significant gaps that remain in weather, climate and water, observations, and services, including early warning systems, which are fundamental to countries abilities to build resilience to climate related disasters. These gaps tell us that many are still being left behind due to a lack of capacity to sufficiently predict and respond to climate disasters.

The *WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes*³, published in 2021, showed that over the past 50 years (1970-2019), of all deaths from weather, climate, and water hazards, 91% occurred in developing economies according to United Nations country classification. The report also showed that whilst globally the number of disasters increased by a factor of five during this time, the number of globally deaths decreased almost threefold. This trend is partly due to improved early warnings and disaster risk reduction efforts, demonstrating the large benefit of these activities.

The 2021 edition of the *WMO State of Climate Services Report*⁴ focused on water, an issue that affects communities in every part of the global and every economic sector. The report highlighted that more than two billion people currently suffer from water stress, and that this number is expected to increase. The heavy toll of floods and droughts was also highlighted, with flood-related disasters increasing by 134% since the year 2000. During the same period, drought climate the lives of over 700,000 people, with the majority of deaths in Africa. The report found that overall, almost 60% of WMO Members lack the basic systems, user engagement and service provision capacities needed to respond fully to the growing demand for easily accessible, robust, and timeline information needed. Overall, SIDS have the lowest level of hydrological capacity compared to the global average, followed by LDCs.

The WMO State of Climate Services report recommends enhancing investment in Integrated Water Resource Management (IWRM) as a solution to better manage water stress, especially in SIDS and LDCs. It recommends investing in end-to-end drought and flood early warning systems in LDCs, particularly for drought early warning in Africa, and flood early warning in Asia. Finally, it highlights the need to fill data gaps on climate service capacities in the water sector, particularly in SIDS, so that no one is left behind.

C) Actions and policy recommendations in areas requiring urgent attention in relation to the implementation of the SDGs under review;

¹ https://library.wmo.int/index.php?lvl=notice_display&id=21761#.YD7J4pNKjVo

² https://library.wmo.int/index.php?lvl=notice_display&id=21975#.YhY5z1jMJhE

³ https://library.wmo.int/index.php?lvl=notice_display&id=21930#.YhY7XljMJhE

⁴ <https://public.wmo.int/en/our-mandate/climate/state-of-climate-services-report>



to the 2022 HLPF thematic review of “Building back better from the coronavirus disease (COVID-19) the full implementation of the 2030 Agenda for Sustainable Development”

1. Supporting the generation and exchange of basic surface-based weather and climate observations critical for improved weather forecasts, climate information and early warnings.

There are currently significant and increasing gaps in surface-based weather and climate observations, especially in developing countries. This has led to sub-optimal short, medium and long-term weather and climate predictions, and climate information, both globally, and locally, which have downstream impacts on many of the SDGs – from food-security and health to resilient cities, infrastructure and water and sanitation.

In 2021 an Extraordinary session of the World Meteorological Congress approved three sweeping initiatives to dramatically strengthen the world’s weather and climate services through a systematic increase in much-needed observational data and data products from across the globe. The three initiatives are known as the [WMO Unified Data Policy](#), the [Global Basic Observing Network](#), and the [Systematic Observations Financing Facility \(SOFF\)](#). Each was painstakingly developed through extensive consultation with thousands of experts and other stakeholders around the globe to meet the explosive growth in demand for weather and climate data products and services from all sectors of society.

SOFF was created to address the long-standing problem of missing weather and climate observations for Least Developed Countries and Small Island Developing States. The legal establishment of the SOFF as a UN Multi-Partner Trust Fund, co-founded by WMO, UNDP and UNEP took place at a special event at COP26 in November 2021. The financing needs to the first 3-year implementation period of SOFF is USD 200 million. This is essential for strengthening the international response to climate change by filling data gaps that limit our understanding of the climate and affect our capacity to predict and adapt to extreme weather events, such as floods, droughts and heatwaves.

More details can be found on the SOFF website: <https://alliancehydromet.org/systematic-observations-financing-facility/>

2. Implementation and acceleration of Sustainable Development Goal 6

Climate related water action is a key priority for the global community to deliver on Sustainable Development Goal 6, to ensure access to water and sanitation for all and to sustain a healthy environment. This is why the WMO led the creation of the Water and Climate Coalition for SDG 6, which seeks to target investment in water data infrastructure and services to reduce impacts from water related disasters and will support WMO Members in developing their hydrological strategies and in capacity building for monitoring networks and providing services.

The Water and Climate Coalition for SDG 6 aims to strengthen operational capacities at national, regional and global levels to address water related sustainable development and climate change adaptation challenges. It supports the implementation of the UN Water Action Decade through the UN-Water Global Accelerator Framework for SDG 6 with a concrete action mechanism.

The Coalition focuses on achieving progress in in 2 areas:

- Catalyzing tangible action and activities for water and climate
- Providing guidance for High Level Policy Development on water and climate

Further details of the coalition can be found at the following site: <https://www.water-climate-coalition.org/>

In 2021, the Extraordinary World Meteorological Congress endorsed a Water Declaration, and a new vision, strategy, and associated action plan for hydrology. These

resolutions reflect the top priority given to water by the World Meteorological Organization in the face of growing water stress and water-related hazards, coupled with an inadequate and fragmented capacity to meet the challenges. More details on these activities can be found on the WMO website <https://public.wmo.int/en/media/news/wmo-endorse-water-declaration-including-water-and-climate-coalition>

3. Climate Science Information, Hydro-met Systems and Services for Adaptation including Early-Warning Systems to support LDCs and SIDS

Adaptation priorities identified in Nationally Determined Contributions (NDCs) submitted by Parties reflect the climate sensitivity of sectors that are vital for national socio-economic development and stability. To address these adaptation priorities, decision makers in climate sensitive sectors require high quality climate services. Climate services provide information on past, present and future climate, and its impact on natural and human systems, reflecting the best available science.

Each year WMO releases a State of Climate Services Report, which highlights the significant gaps that remain in different types of climate services required to effectively adapt to climate change. As described earlier in this submission, the 2021 edition of the *WMO State of Climate Services Report*⁵ focused on water, an issue that affects communities in every part of the global and every economic sector.

In 2020, the *WMO State of Climate Services Report*⁶ focused on disaster risk reduction and early warning services, highlighting the significant gaps that remain in risk information and early warnings systems to support disaster risk reduction measures, particularly in LDCs.

As climate change continues to threaten human lives, ecosystems and economies, risk information and early warning systems are increasingly seen as key for reducing the impact of weather, water and climate-related disasters. The majority of countries, including 88% of least developed countries and small island states, that submitted their Nationally Determined Contributions (NDCs) to UNFCCC have identified Early Warning Systems as a top priority.

This is why WMO supports a range of capacity building activities, including the Climate Risk and Early Warning Systems (CREWS) Initiative, a multi-partner mechanism that funds and works directly with Least Developed Countries (LDC) and Small Island Developing States (SIDS) to improve the availability of, and access to, risk-informed early warning services. WMO is one of three implementing partners of CREWS projects and administratively hosts the CREWS Secretariat. CREWS is aligned with the international principals for risk-based, people-centred, multi-hazard early warning systems, and measures its success through the reduction of lives and livelihoods lost to extreme climate events, contributing to the implementation of the SDGs, the Sendai Framework for Disaster Risk Reduction and the action agenda of the Paris Climate Agreement. Furthermore, CREWS specifically recognizes the importance of SDG 5, that women's empowerment is fundamental for building resilience and that men and women access, process, interpret and respond to information and warnings in different ways, and therefore CREWS is committed to gender-sensitive programming in its work.

More details on the CREWS Initiative can be found at the following site: <https://www.crews-initiative.org/en>

⁵ <https://public.wmo.int/en/our-mandate/climate/state-of-climate-services-report>

⁶ <https://public.wmo.int/en/media/press-release/state-of-climate-services-2020-report-move-from-early-warnings-early-action>

WMO input to the 2022 HLPF thematic review of *“Building back better from the coronavirus disease (COVID-19) while advancing the full implementation of the 2030 Agenda for Sustainable Development”*

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