



World Meteorological Organization (WMO)

Statement to SBSTA 52-55

The World Meteorological Organization (WMO) along with its co-sponsored bodies, the IPCC, the Global Climate Observing System (GCOS), and the World Climate Research Programme (WCRP), continues working to contribute scientific information to the negotiation process. This cooperation involves, high-level, multi-Party, multi-organization efforts to compile the latest climate science information and scientific solutions for tackling climate change in areas relevant to the WMO mandate.

WMO plays a leading role in the coordination of the acquisition and international exchange of global observations, data and products that are needed to better understand, predict and adapt to the changing climate. The most recent World Meteorological Congress, held in October 2021, approved the new WMO Unified Data Policy, covering weather, climate and water and other related environmental data. The Policy reaffirms the commitment of the 193 Members of WMO to the free and unrestricted exchange of Earth systems data for the benefit of all. In addition to the new data policy, WMO Members also committed to the Global Basic Observing Network (GBON), a globally defined global network of systems providing the most critically needed weather and climate observations, and for which international exchange is considered mandatory. This milestone decision reflects the critical role played by global data and numerical weather prediction systems in all areas of weather and climate monitoring and prediction, and the need to ensure adequate observational input from all areas of the globe.

To support this commitment in the countries with the largest capacity gaps and most poorly observed, WMO, the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) are establishing the Systematic Observations Financing Facility (SOFF), a new financing mechanism that will support and sustain implementation of the Global Basic Observing Network in LDCs and SIDS and provide technical assistance to other developing countries. WMO is pleased to inform country parties that SOFF will be announced at this COP as the first multilateral initiative

dedicated to tackling a current limitation in our capacity to understand, predict and adapt to the changing climate: The need for continued access to weather and climate data from all over the planet. GBON is designed to contribute to meeting the essential needs for global climate observations in support of implementation of the Paris Agreement, by strengthening systematic observation of the climate system and early warning systems. SOFF responds to the need for sustained funding for essential climate observation as emphasized in SBSTA 51 draft conclusions and during the SBSTA 2021 informal consultations.

To inform Parties on the latest scientific data and findings, WMO, on behalf of the United Nations Secretary-General, António Guterres, compiled the United in Science 2021 Report (https://library.wmo.int/index.php?lvl=notice_display&id=21946#.YW7l5xpBwuW), launched in September this year, to bring together the latest climate science information from global partner organizations. The report informed that atmospheric greenhouse gas (GHG) concentrations – which are already at their highest levels in three million years – have continued to rise, reaching new record highs this year. Fossil fuel emissions in many sectors are back at the same, or even higher, levels than before the COVID-19 pandemic. Global temperatures in 2017–2021 are among the warmest of any equivalent period since meteorological measurements, with warming evident in many climate indicators such as sea ice, glacier melt and sea-level rise. The scale of recent observed changes across the climate system are unprecedented over many centuries to many thousands of years. There is a 40% chance that the average global temperature in one of the next five years will be at least 1.5 °C warmer than pre-industrial levels but it is very unlikely (~10%) that the 5-year mean temperature for 2021–2025 will be 1.5 °C warmer than pre-industrial levels. In his foreword to the report, António Guterres noted that it was an alarming appraisal of just how off course we are in meeting the goals of the Paris Agreement. The WMO provisional statement on the state of the global climate in 2021 documents a global average temperature for the current year to date of 1.08 degrees above pre-industrial levels.

WMO has also started producing the State of the Regional Climate Reports for all continents to unpack the complexity of the climate system by describing how climate indicators are changing in specific regions. The four Regional State of Climate Reports released this year, for Latin America and the Caribbean (https://library.wmo.int/doc_num.php?explnum_id=10764), Africa (https://library.wmo.int/doc_num.php?explnum_id=10833), Asia and the Southwest Pacific, provide regional-scale authoritative information to inform responsive climate policies. This information helps monitor the domains most relevant to climate change, including

the composition of the atmosphere, the energy changes that arise from the accumulation of GHGs and other factors, as well as the responses of land, oceans and ice. The regional reports also document region-specific impacts and gaps in needs in supporting Parties to address climate-related challenges.

The status of the state of the climate indicators documented in the above reports has a direct bearing on the achievement of the United Nations Sustainable Development Goals (SDGs). An analysis released by WMO in September ([Climate Indicators and Sustainable Development: De... | E-Library \(wmo.int\)](#)) demonstrates that, for the SDGs to be achieved by the 2030 target, the risks posed by human-induced climate change must be understood and addressed.

To further assist Parties with meeting these challenges, The Global Framework for Climate Services (GFCS) guides the implementation of climate services needed to address adaptation priorities identified in Parties' NDCs. The three State of Climate Services reports submitted by WMO to date to SBSTA, as invited in 11/CMA.1 paragraph 19, provide actionable information for addressing specific climate services implementation priorities, gaps, and needs. This year, through the GFCS, WMO and partners launched a State of Climate Services report for Water (https://library.wmo.int/doc_num.php?explnum_id=10826). The report provides insights into the status, the value, and the role climate services play in support of adaptation with a particular focus on water. The report revealed that more than 2 billion people are living in countries under water stress and 3.6 billion people face inadequate access to water at least one month per year. Meanwhile, water-related hazards have increased in frequency for the past 20 years. Since 2000, flood-related disasters have increased by 134%, and the number and duration of droughts also increased by 29%. Yet, the report shows that almost 60% of WMO Members lack the capacities needed to respond fully to the growing demand for information needed to support water-related adaptation. The report recommends increased investment in Integrated Resources Water Management and end-to-end drought and flood early warning systems in at-risk countries. It also calls for filling data gaps and improving interaction among national level stakeholders.

This year WMO Members have agreed on a water declaration that sets the course, and defines aspirations, for integrated water and climate-related activities. The Water and Climate Coalition has been launched to better support the water sector, especially with regard to:

- Stocktaking of, and integrated, climate (GHG) and water processes to contribute to a better understanding of the Earth system and to provide information for adaptation and resilience
- A need to design and guarantee schemes for sharing benefits that can be generated through river basin scale adaptation action
- A need to commit to information sharing at the national level whilst also participating in a globally monitored system on water, snow and ice
- Strong and sustainable financing mechanisms on integrated climate and water resilience are needed, with emphasis on lasting capacity development and regional cooperation
- Cooperation to address future water availability, depending on changed storage in snow and ice.

The WMO Water Declaration emphasizes the vital importance of the mission of National Meteorological and Hydrological Services (NMHSs) in monitoring, understanding and predicting weather, climate and water behaviour, and in providing related information, warnings and services that meet river basin, regional, national, and global needs in the context of climate change.

The WMO Global Multihazard Alert System (GMAS), currently under development, will support Parties in developing early warning systems capacities, by further integrating existing WMO hazard-specific early warning systems. A Common Alerting Protocol provides efficient all-media warning dissemination to at-risk people, and impact-based forecasts are being adopted to facilitate early warning-based early action. The WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019), released in August ([The Atlas of Mortality and Economic Losses from We... | E-Library \(wmo.int\)](#)), documents benefits of Multi-Hazard Early Warning Systems (MHEWS) for both climate change adaptation and disaster risk reduction. Improvements in these systems of proven efficacy are needed more than ever; a third of people are still not covered by early warning systems globally.

To support adaptation investments based on the best available science, WMO and the Green Climate Fund (GCF) have partnered to provide the international community with access to new climate information, methods and tools for developing climate science information for climate action. These resources and knowledge products, which will be launched at COP26, respond to a growing demand from stakeholders of the GCF, WMO and others, for guidance essential for the development of climate actions particularly for climate adaptation and resilience projects. These resources will be accompanied by provision of advisory services to Parties, to enable Parties to avail of these resources and

to develop technical capacities to ensure that climate-related policies, National Adaptation Plans (NAPs) and investments will be based on scientific evidence leading to sound solutions.

Finally, the WMO-led Global Atmosphere Watch (GAW) programme and Integrated Global Greenhouse Gas Information System (IG3IS) have identified opportunities and areas for strengthening systems and services to support improved air quality and targeting of GHG emissions-reduction measures. These include:

- It would be beneficial to improve the reliability of national GHG emission estimates in support of mitigation action by combining traditional inventories with observations-based estimates. WMO/IG3IS offers a common framework for observation-based estimates, as stated in the SBSTA-50 conclusions, as an important contribution to the transparency mechanism.
- Multiple co-benefits for human health and ecosystems have been demonstrated when national climate policies take into consideration the implications of air pollution. Such integrated air quality and climate policy are not commonly implemented. An integrated approach to air quality and climate policy will substantially advance the implementation of the Sustainable Development Goals and NDCs.
- In the race for net-zero, nature-based solutions and ecosystem-based approaches need observational evidence of state and performance ecosystems and natural resources like forests. Such knowledge can ensure the success of the implementation of nature-based climate solutions.
- Cities are a major source of GHGs and the places where impacts of climate change on human lives and property are felt most strongly. Improved and consistent engagement with urban stakeholders as well as the use of good practices developed by the WMO, will be beneficial for the advancement of the mitigation and adaptation policies.