WMO STATEMENT AT SBSTA (May-June 2021)

31 May 2021

World Meteorological Organization

Contributions of Science to the Convention and the Paris Agreement

Mr Chairperson,

Distinguished delegates,

The World Meteorological Organization (WMO) and its co-sponsored bodies – the Intergovernmental Panel on Climate Change (IPCC), World Climate Research Programme (WCRP), and the Global Climate Observing System (GCOS) and its component Global Ocean Observing System (GOOS) – continue working to increase the relevance of the information provided to the Parties to the UNFCCC.

The Annual State of the Global Climate in 2020 shows that last year was one of the three warmest years on record with a global average temperature reaching 1.2°C above the pre-industrial level. The past six years, including 2020, have been the six warmest years on record.

According to the Global Annual to Decadal Climate Update, prepared by the WMO Lead Centre for Annual to Decadal Climate Prediction at the UK Met. Office with collaborating centres, there is a 40% chance of the annual average global temperature temporarily reaching 1.5°C above the pre-industrial level in at least one of the next five years – and these odds are increasing with time. There is also a 90% likelihood of at least one of the next five years becoming the warmest on record, which would dislodge 2016 from the top ranking.

Understanding the climate system and how it is changing remains a critical activity for WMO and a key focus of both the World Climate Research Programme (WCRP) and the Global Climate Observing System (GCOS). Since its inception more than 40 years ago, WCRP has made fundamental and significant contributions to humankind's ability to understand and predict the climate through its unique role in spearheading climate science, modelling and predictions/projections. This has culminated in the capability of WCRP's Coupled Model Intercomparison Project (CMIP) to provide climate change scenarios to e.g. the IPCC assessment process. A new Strategic Plan (2019-2028) reorients WCRP's and partners' core research towards providing the science, knowledge and understanding needed to target and provide answers for frontier problems – such as disaster risk reduction, climate adaptation, mitigation, and intervention strategies. To ensure that communities around the world have a voice in WCRP priorities, the programme established a series of Climate Research Forums in 2020, with over 50 Regional Focal Points from around the world. Building on this, a WCRP Open Science Conference in 2023 will focus on bridging climate science and society.

Systematic observations of Essential Climate variables are required to understand the response to climate drivers and to predict and mitigate severe events exacerbated by a warming climate. WMO has recently created the Global Basic Observing System as a baseline for Earth System observations and is developing a Unified Data Policy to ensure the delivery of core systematic observations. WMO is also concerned with persistent observation gaps notably in Africa, Central America and the Pacific. To resolve this problem, WMO is leading the development of the Systematic Observations Financing Facility to support and sustain observations programs in developing countries, including Small Island Developing States.

Concentrations of the major greenhouse gases continued to increase in 2019 and 2020. Globally averaged mole fractions of carbon dioxide (CO_2) have already exceeded 410 parts per million (ppm), and if the CO_2 concentration follows the same pattern as in previous years, it could reach or exceed 414 ppm in 2021.

Systematic observations of greenhouse gases are critical to underpin mitigation efforts. WMO is progressing with the development of the Integrated Global Greenhouse Gas Information System (IG^3IS) through the implementation of the pilot projects and the

development of good practices. IG^{3}IS is an innovative observation-based approach that combines atmospheric measurement of greenhouse gas concentrations with the other information sources in a modelling framework, to improve knowledge of greenhouse gas emissions from national to facility scales in order to identify previously unknown, or better characterize known, emission reduction opportunities and to help Parties quantify progress towards their emission reduction commitments. IG3IS was recommended as a common framework for the observation-based evaluation of greenhouse gas fluxes at multiple spatial scales by the 50th session of SBSTA and was included in Chapter 6 of the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Quantification of emissions and concentrations is increasingly relevant in light of Parties' efforts to reach net-zero. The observation-based approach can also help countries in better establishing and refining their Nationally Determined Contributions (NDC) commitments and in improving emission estimates where inventories are not available. Realizing these advantages will require the enhancement of greenhouse gas measurements in many parts of the world.

Climate change has relentlessly continued with an increasing occurrence and intensification of high-impact events and severe losses and damages affecting people, societies and economies. Beginning last year WMO has embarked on producing Regional Climate Reports. The first such report, on the state of the climate in Africa in 2019, documented the status of key climate indicators and extreme events and their associated impacts. The regional reports also include analyses of Parties' policy priorities and summarize areas where capacities need to be strengthened to address those priorities. Additional reports in preparation for release this year include Latin America and the Caribbean, the Southwest Pacific, and Africa 2020.

Regional and global summaries of Parties' capacities to support adaptation action with hydro-meteorological systems and services are also now available in annual reports on the State of Climate Services. The 2020 report, on risk information and early warning, prepared by WMO and 17 partners organizations, highlights progress made in Early Warning Systems (EWS) implementation globally and identifies where and how governments can invest in effective EWS to strengthen countries' resilience to multiple weather, climate and water-related hazards. The next such report, currently in preparation, will focus on climate services for the water sector.

While COVID-19 generated large international health and economic crisis from which it will take years to recover, it is crucial to remember that climate change will continue to pose an ongoing and increasing threat to human lives, ecosystems, economies and societies for centuries to come. The COVID-19 pandemic demonstrates how climate variability and change can interact with societal vulnerabilities to create new, heightened levels of risk – potentially having a positive impact on discussions surrounding the climate crisis. Seamless climate services can help meet these challenges, in both the short- and the long-term, by giving decision-makers enhanced tools and systems to analyse and manage risk, under current hydrometeorological conditions, as well as in the face of climatic variability and change.