



**WMO STATEMENT TO SBSTA 42  
BONN, GERMANY  
1-11 JUNE 2015**

**Updates on the contribution of WMO including Global Framework for Climate Services (GFCS), WCRP, GCOS and Greenhouse Gas Concentrations**

Last year, the 41th Session of SBSTA invited WMO and its co-sponsored programme, namely the Global Climate Observing System, GCOS, to report on the outcome of the GCOS workshop which had been held in collaboration with UNFCCC and IPCC, in Bonn, Germany, 10-12 February 2015. Furthermore, in run up to COP 21, this is an opportunity to provide fresh information from the World Climate Research Programme (also co-sponsored) and to provide an interim progress report on the implementation of the Global Framework for Climate Services (GFCS) — a UN-system initiative to provide reliable and accessible climate services to users all over the world, with an initial focus on agriculture and food security, water, health, and disaster risk reduction. The Framework is organized around 5 pillars, among which Observation and monitoring, Research, modelling and prediction and Climate services information system are directly relevant to SBSTA.

The GCOS workshop “Enhancing observations to support preparedness and adaptation in a changing climate – Learning from the IPCC 5<sup>th</sup> Assessment Report” found that adaptation planning and assessment requires a combination of baseline climate data and information, coupled with sector-specific and other economic and demographic data at regional, national and local scales. Good, publicly available and standardized data on the vulnerability of key sectors to the impacts of climate change across these spatial scales are essential. There is the need to enhance climate observations systems with a special emphasis on land and oceans as well as the intersection of the two. The research and development community needs to support the development of indicators linking physical and social drivers relating to exposure, vulnerability and improved resilience in line with national requirements. Finally, coordination amongst observation systems at different scales from sub-national to global is needed to inform adaptation, particularly through relevant focal points, national coordinators and regional climate centres and alliances.

Information on the GCOS workshop and some factual findings from the status report on global observing system for climate will be made during the Research Dialogue in the afternoon of 4 June.

GFCS: In November 2014, the Second Session of the Intergovernmental Board on Climate Services (IBCS-2) highlighted the need for more partnerships and coordination among various actors in order to achieve the overarching goals of helping communities to adapt to extreme climate events and of boosting disaster resilience. IBCS-2 decided to include urban activities related to climate as a specific cross-cutting element within the priority areas of GFCS. IBCS-2 recommended further developing an Energy exemplar given the great demand for climate services by the energy sector and the sensitivity of the sector to weather and climate extremes. A resolution on adding energy as an additional priority area of GFCS will be considered for approval at the 17th World Meteorological Congress. Additional partners have joined the Partner Advisory Committee (PAC), namely the Global Water Partnership, the World Bank and the United Nations International Strategy for Disaster Reduction. The World Food Programme (WFP) has col-located Climate Services Advisor since March 2015 with the GFCS Office at the WMO Secretariat. The PAC held its second session in March 2015 in Geneva. The meeting agreed on a set of focus countries where to demonstrate the added value of partners' coordinated efforts.

Together with the United Nations Institute for Training and Research (UNITAR), a training tutorial on GFCS is currently being developed and is planned to be available by Cg-17, end of May 2015. Advocacy videos are also being developed to advocate for the value of climate services for climate change adaptation and sustainable development.

WCRP: A WCRP joint workshop with Working Group I of IPCC in Bern Switzerland in September 2014 confirmed the urgency of WCRP grand challenges and suggested additional attention to deep ocean heating, global aerosols and biogeochemistry, and predictions of natural and human-induced climate change on decadal time scales. That workshop endorsed plans and activities of the next WCRP Coupled Model Intercomparison Project (CMIP6) which will again engage the global climate community in a systematic demonstration and evaluation of modelling skills and outcomes. CMIP6 scenarios and products will guide and stimulate broad areas of climate research and support subsequent national and international climate assessments including those planned and organized by UNFCCC. The WCRP report to SBSTA 42 during the Research Dialogue will focus on recent global measurements of ocean heating, on permafrost carbon and on emerging signals of climate extremes. Also during the Research Dialogue the WCRP Coordinated Regional Climate Downscaling Experiment (CORDEX) will describe availability and use of recent regional climate projections.

GHGs concentration: WMO continues to witness ever increasing levels of greenhouse gasses in the atmosphere, the main drivers for the changing climate. The monthly global average concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere exceeded 400 parts per million in March 2015 for the first time on record, according to the U.S. National Oceanic and Atmospheric Administration (NOAA). This data is based on the NOAA Global Greenhouse Gas Reference Network, which constitutes a substantial part of the WMO Global Atmosphere Watch observing network.

An analysis of observations from the WMO GAW shows that the globally averaged levels of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, which are the major greenhouse gases, in 2013, reached 142%, 253% and 121% of their pre-industrial (before 1750) levels. Furthermore, the rate of increase in atmospheric CO<sub>2</sub> is also increasing from being ~1.5 ppm per year for the 1990s and ~2.1 ppm per year in the 2000s to reaching 2.9 ppm in 2013. The increase in the level of long-lived greenhouse gases led to the increase of radiative forcing from 1990 to 2013 by 34%, with CO<sub>2</sub> accounting for about 80% of this increase. About half of the emitted CO<sub>2</sub> due to anthropogenic activities stays in the atmosphere driving climate change. Uptake of anthropogenic CO<sub>2</sub> by the ocean has also resulted to increased acidity levels in seawater. For effective policy support, it is extremely important that WMO together with the partners build a system allowing for the verification and attribution of the greenhouse gas sources and sinks.

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