



## WMO SUBMISSION TO SBSTA 47

### Outcomes of the Sixty-ninth session of the WMO Executive Council with respect to Scientific Advice to UNFCCC and Implementation of Paris Agreement

#### Introduction

This submission includes excerpts of decisions relevant to observations and climate science made by the sixty-ninth session of the WMO Executive Council (EC-69), which was held in Geneva, Switzerland from 10 May to 17 May 2017. These decisions facilitate contributions of National Meteorological and Hydrological Services (NMHSs) to the implementation of the Paris Agreement.

#### ***Decision 6- Monitoring Extreme Weather and Climate Events from Space***

WMO recognized that the increase in the frequency of extreme weather and climate events and their impact on society is requiring the development and implementation of new tools for monitoring these phenomena using remote sensing techniques. For many countries an adequate human and technological capacity to provide a good level of services and the transfer of knowledge from countries with greater technological developments is essential. Satellite monitoring of accumulated heavy precipitation and droughts will be enhanced to fill the gap for data, particularly in scarce areas.

#### ***Decision 7- WMO Support to Implementation of the Paris Agreement***

WMO continues annual submissions of WMO Statement on the State of the Global Climate and the WMO Greenhouse Gas Bulletin. These products provide solid scientific evidence for tracking climate trends with climate indicators.

The Global Framework for Climate Services (GFCS) advances provision of climate services to the energy, water, public health, transport and industry, agriculture and land use sectors through which it contributes to a low-carbon and climate-resilient economy.

Many Parties in their Nationally Determined Contributions (NDCs) have emphasized the need for scientific information on climate variability, trends and extremes and the use of climate information and services. Enhanced observation of Essential Climate Variables (ECVs) may be important for the global stocktake, since the climate data records based on ECVs are used to close budgets of energy, carbon and water and to study changes in the growth rate of the atmospheric greenhouse gases (GHGs), or interaction between land and atmosphere, in a more integrated way.

WMO has urged Members' NMHSs to work at national level to fully engage, as critical actors in the cataloguing of extreme events, adaptation programmes, mitigation, and other areas that fall within the competency of their respective Services, and to contribute to the development of NDCs, greenhouse gas monitoring systems and other observing systems.

WMO has further requested Member's NMHSs to engage in or, where necessary, establish institutional frameworks for climate services at national level that will serve as key coordination mechanisms to bring together stakeholders needed for the successful generation, tailoring, communication and use of climate services for enhanced decision-making.

WMO is regularly sensitizing Governments on the key role of the NMHSs in providing climate data and information under Element B of the National Adaptation Plans (NAPs) and contributing to implementation of NDCs. A Policy Paper has been prepared and will be disseminated on this subject, before COP 23.

#### ***Decision 9- Strengthening WMO Statement on the State of the Global Climate***

The WMO Annual Statement on the State of the Global Climate is an authoritative global synthesis of best available analysis and scientific information, with indicators for tracking climate trends, extremes and their impacts. This complements the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports which are issued every five to seven years.

The WMO Executive Council decided to strengthen the WMO annual statement on the State of the Global Climate by adding, when feasible, information which requires multi-year analysis, such as carbon and sea level budgets and multi-year prolonged droughts, and to provide impacts information in partnership with other agencies.

It has further decided that WMO should issue multi-year climate reports, to address such issues as attribution of extreme events, which require a multi-year perspective, and that launching such reports.

#### ***Decision 10- Climate Services Information System Products to Support UN System Planning and WMO Members on Seasonal to Inter-Annual Timescales***

WMO decided to strengthen the consolidated and effective provision and utilization of, on a regular basis, the WMO El Niño/La Niña Update, global seasonal climate updates, and associated global monitoring products, to be made available as products of the Climate Services Information System (CSIS) to the relevant global, regional and national entities, including those of the United Nations system, for their reference and planning, as part of the implementation of the GFCS.

#### ***Decision 14- Support the Development of Actions based on the Global Climate Observing System (GCOS) Implementation Plan***

The WMO Executive Council noted that, in accordance with the GCOS implementation plan, the WMO Secretariat has coordinated an action to identify a core set of climate change indicators to be used as a basis for reporting climate change to the public (Indicators of Climate Change, [GCOS-206](#)). There are in general two types of indicator, those describing the physical state and history of the climate system, and those looking at future impact, risk and adaptation designed to inform future policy decisions. Climate indicators should meet the following criteria: relevance, representativeness, traceability, and timeliness. The number of historical indicators should be limited. The proposed indicators can be grouped as follows: temperature and energy; atmospheric composition; ocean; cryosphere; land use/vegetation change; extremes and human impacts.

***Decision 20- Future of the Global Programme of Research on Vulnerability and Impact Assessment (PROVIA)***

WMO recognized that emerging policies, such as the Paris Agreement, that will benefit from new scientific developments and lessons learned from the past programmes, provide a continuing rationale for WMO engagement in the UN Environment-led PROVIA. It further recognized that improved coordination of international research on the impacts of, and responses to, climate change will promote the provision of credible scientific information such as is being increasingly requested by decision-makers, and as is exemplified in the Working Group II report of the Intergovernmental Panel on Climate Change (IPCC).

WMO will focus its further engagement in PROVIA on UNFCCC related processes, such as preparation of NAPs, supporting the global stocktake, scientific inputs to IPCC Assessment Reports, and other contributions to the implementation of the Paris Agreement.

***Decision 45- Development and implementation the Global Cyosphere Watch***

WMO recognizes that the cryosphere provides one of the most useful indicators of climate change, yet, it is arguably the most under-sampled domain. Changes in the cryosphere have direct impact on the sustainability of communities, on their water resources, increasing the risk of natural disasters.

WMO has requested its Member States to contribute to the CryoNet network, and that regional associations consider relevant CryoNet stations for the Regional Basic Observing Networks (RBON).

***Excerpts from Decisions 46- Development and Implementation of the Arctic Polar Regional Climate Centre and 48- Polar and high mountain priority activity***

There is a growing need for reliable and timely information on the status of, and threats to the Arctic environment, in support of decisions of governments on mitigating the impact of climate change and sustaining the economic development, in particular in the remote areas of the Arctic.

WMO recognizes the importance of understanding changes of the cryosphere in high mountain regions, and of enhancing predictability of changes at various time scales, for addressing the potential impact on the availability of water resources and food security. There is a need to clarify the scope and definition of “high mountain regions” in the framework of WMO Polar and High Mountain Regions Priority Activity. There is also a need to facilitate implementation of collection of data from observing platforms in high mountain regions of developing countries.

WMO recognizes that the Green Climate Fund offers a good opportunity to support the WMO polar and high mountain regions priority activities.

***Decision 49- WMO Priority actions in hydrology and water resources management***

WMO’s Commission for Hydrology (CHy) decided to initiate the WMO Global Hydrological Status and Outlook system, building on the existing efforts from a number of Members to produce regular analyses of the current national hydrological condition. This will be complemented by forward looking assessments of how the water situation may change over sub-seasonal to seasonal time scales. This initiative will closely link with other related WMO

activities such as WMO Integrated Observing System (WIGOS), in particular by making use of the opportunities provided by World Hydrological Observing System (WHOS) and the Global Data-processing and Forecasting System.

In response to global requests, WMO will therefore develop annual joint reporting on of the state of the global climate and the hydrological status and outlook, as submission to future COP sessions.

#### ***Decision 51- IG3IS Implementation Plan***

WMO recognizes the growing need for data and research related to understanding greenhouse gas sources and sinks on enhanced temporal and spatial scales, and the need for provision of such data in a facilitative, collaborative, and non-regulatory way. Data and research from Integrated Global Greenhouse Gas Information System (IG3IS) will provide information on the atmospheric distribution of greenhouse gases and have the potential to support the work of the greenhouse gas emission inventory compilers. The data also have the potential to contribute to the Paris Agreement, the provision of climate services, and related Sustainable Development Goals.

The Implementation Plan 2016 of the Global Climate Observing System (GCOS) approved by the GCOS Steering Committee and introduced at COP 22 in Marrakesh includes the new Essential Climate Variable (ECV) "Anthropogenic Greenhouse Gas Fluxes" measured through "Estimated fluxes by inversions of observed atmospheric composition", and that this ECV is directly supported by IG3IS.

The Task Force on National Emission Inventories of the Intergovernmental Panel on Climate Change (IPCC) recognized the potential for atmospheric observations to identify areas for improvement of greenhouse gas emission inventories. Furthermore, the IG3IS brings complementarity to compilation of national emission inventories guided by the IPCC process and the added value of the information provided by IG3IS as a scientific observations-based tool in support of policy, in the improvement of future climate scenarios and in fostering carbon cycle science.

WMO and UN Environment take further steps to promote collaboration on IG3IS between the National Hydrometeorological Services, Research Institutions and National Environmental Agencies in Member countries.

The World Data Centre for Greenhouse Gases, supported by Japan, plays an important role in the collection and dissemination of global greenhouse gas observations data.

WMO is seeking support to the IG3IS activities and assist in promoting IG3IS with funding agencies, and work with those Members, especially in developing countries, who plan to undertake IG3IS projects. The WMO Executive Council requested the WMO Secretariat to communicate with UNFCCC on the issues related to the implementation of IG3IS in the context of UNFCCC processes.

WMO will take all necessary actions to develop and maintain collaboration on matters related to the implementation of IG3IS with relevant organizations, agencies, groups and institutions, including IPCC, UNFCCC, UN Environment, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Maritime Organization (IMO), and the Food and Agriculture Organization (FAO).

Four initial implementation objectives of IG3IS were defined:

- (1) Reduce uncertainty of national emission inventory reporting to UNFCCC;
- (2) Locate and quantify previously unknown emission reduction opportunities, such as fugitive methane emissions from industrial sources;
- (3) Provide subnational entities, such as large urban source regions (megacities), with timely and quantified information on the amounts, trends and attribution by sector of their GHG emissions in order to evaluate and guide progress towards emission reduction goals; and,
- (4) Assess trends of GHG emissions in support of national pledges and the Paris Agreement global stocktake.