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**Submissions from entities in the United Nations system, international  
organizations and other stakeholders on their efforts in 2020 to  
implement the outcomes of the WSIS**

**Submission by**

World Meteorological Organization

This submission was prepared as an input to the report of the UN Secretary-General on "Progress made in the implementation of and follow-up to the outcomes of the World Summit on the Information Society at the regional and international levels" (to the 24<sup>th</sup> session of the CSTD), in response to the request by the Economic and Social Council, in its resolution 2006/46, to the UN Secretary-General to inform the Commission on Science and Technology for Development on the implementation of the outcomes of the WSIS as part of his annual reporting to the Commission.

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# **World Meteorological Organization (WMO) Submission to WSIS Report 2020**

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## **Part 1: Executive Summary**

The World Meteorological Organization (WMO) is committed to promoting and supporting the implementation of ICTs for improving the global, regional and national production, exchange and distribution of information, forecasts and warnings on weather, climate, and water. In this way, WMO contributes to the World Summit on the Information Society (WSIS) action line on e-environment and its call “to establish monitoring systems, using ICTs, to forecast and monitor the impact of natural and man-made disasters, particularly in developing countries, LDCs and small economies.”

ICT systems that collect weather, climate and water information from around the globe underpin the delivery of information to the public, businesses and governments. They also support the production of analyses, forecasts and warnings. WMO continues to develop its WMO Information System (WIS) to allow and facilitate wider accessibility to this information.

ICTs are being harnessed by national meteorological and hydrological services around the world to improve the services they offer to citizens. The demand for accessible and accurate services will continue to grow in the years ahead. To respond effectively to the new human vulnerabilities and socio-economic trends of the 21st century, national meteorological and hydrological services need greater recognition from policymakers and to be further integrated into national development plans. This will help ensure that all countries reduce the risks and maximize the opportunities linked to weather, climate and water, towards implementation of the 2030 Agenda for Sustainable Development and Sendai Framework for Disaster Risk Reduction.

## **Part 2: Analytical overview**

WMO achieves its objectives by facilitating international agreement among National Meteorological and Hydrological Services (NMHSs) around the world. Challenges to the use of ICT collaboration tools for this purpose include great variability in the quality of ICT infrastructure available to various countries, low uptake of tools that are not a part of the daily working environment of the collaborators, and security constraints that restrict some organizations’ access to collaboration web sites.

The WMO Information System (WIS) provides a major upgrade to the way weather services and their partners manage and share weather, climate, water, marine and related environmental information. WIS exploits the most recent advances in information and communication technologies and reduces the costs of exchanging information. WIS gives users outside the meteorological community, free access to an expanded range of information. As a result, WMO can now collaborate more fully with United Nations and other international partners on implementing common programmes and activities, such as the Global Framework for Climate Services.

Climate information and services rely on data to conduct analytical studies, feed model predictions and calibrate other types of data, such as data from remote-sensing platforms. This requires longer term observations and data of higher quality than data used for ordinary weather forecasting systems. WMO seeks to ensure that these criteria are met at global and national levels, using best-available technologies, standards and tools. WMO is currently leveraging WIS by developing the functional architecture of the GFCS/Climate Service Information System (CSIS). CSIS functions include managing historical data and providing climate forecasts, long-term change predictions and projections.

### **Part 3: Innovation and Progress, plans**

1. Following approval of the WMO Reform package by the Eighteenth World Meteorological Congress in June 2019, two integrated technical commissions replaced the former eight technical commissions. One of the new Technical Commissions, the Commission for Observation, Infrastructure and Information Systems (Infrastructure Commission) contributes to the development and implementation of globally coordinated systems for acquiring, processing, transmitting and disseminating Earth system observations, and related standards; coordination of the production and use of standardized analysis and model forecast fields; and development and implementation of sound data and information management practices for all WMO Programmes and their associated application and services areas. The Infrastructure Commission, at its first virtual session in November, endorsed the WIS 2.0 Implementation Plan, and the WIS 2.0 Functional Architecture. It also identified a list of WIS2.0 demonstration projects, which cover new application programmes areas such as marine meteorological and hydrological data exchange.

WIS 2.0 will be a collaborative system of systems using Web-architecture and open standards to provide simple, timely and seamless sharing of trusted weather, water and climate data and information through services. It will provide a “virtual one-stop-shop” for weather, water and climate information and services by providing an environment in which data can be managed, documented, discoverable, accessible and easy to use. It will also standardize information management, so data can be relied upon.

2. A landmark Data Conference convened by the World Meteorological Organization (WMO), through virtual platform on 24 November 2020, has set the scene for a comprehensive modernization of the roles, rules and requirements for the international exchange of observations and other data which measure the pulse of the planet.

The Data Conference brought together more than 1,200 participants from National Meteorological and Hydrological Services, the private sector, space agencies, global data providers and users, academia and international and development partner organizations.

A global explosion in demand for weather, climate and water monitoring and prediction is leading WMO to update its data policies to harness the latest advances in satellite and computing technology, to close the glaring gaps in observation, in developing countries, and to embrace an Earth systems approach, which includes ocean and ice observations and space weather.

The Data Conference achieved its goal of bringing a wide variety of stakeholders together in order to identify both the main obstacles to increased exchange of data and the best opportunities to overcome them. It also improved understanding of the roles of a broad array of stakeholders, including the private sector, in data provision.

3. In collaboration with the European Centre for Medium-Range Weather Forecasts (ECMWF), WMO developed a global data quality monitoring system (WDQMS). The current operational version of WDQMS monitors the availability and quality of observational data based on near-real-time Numerical Weather Prediction (NWP) monitoring information from four global NWP centres. Its webtool links availability and quality of surface-based observational data from those monitoring centres with the metadata and user requirements on global observing systems.

4. Another major development in 2020 was the operational start of the WMO Community Platform. The new platform provides the following features for WMO Members and partners:

- A centralized Experts Database with self-service functionality to keep contact information, roles and group memberships up to date.
- Member and partner profiles used to collect information about countries and territories as well as partner organizations.
- A central repository and database to streamline surveys avoiding redundant questions to Members.
- Online discussion forums for experts to connect on specific subjects of interest independent of affiliation or group membership to find and provide practical help on a peer-to-peer basis.
- Document collaboration and task tracking capabilities for WMO constituent and working bodies, as well as focal points, ad hoc groupings, event and meeting participants, etc.

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