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Submissions from entities in the United Nations system, international organizations and other stakeholders on their efforts in 2023 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 27th 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.

World Meteorological Organization (WMO) Submission to WSIS Report 2023

Part 1: Executive Summary

The United Nations Secretary-General, António Guterres, announced in 2022 that the United Nations will spearhead new action to ensure every person on Earth is protected by early warning systems within five years, and designated the World Meteorological Organization (WMO) to lead this effort. This groundbreaking international campaign was officially recognized as the top overriding priority of the World Meteorological Organization, at its nineteenth Congress in May 2023. The initiative is spearheaded by WMO, the UN Office for Disaster Risk Reduction, International Telecommunications Union, International Federation of Red Cross and Red Crescent Societies, with support from more than twenty other UN agencies as well as a very wide range of stakeholders, from financial institutions to private sector participants.

A multi-hazard Early Warning System (EWS) is an integrated system which allows people to know that hazardous weather or climate events (floods, storms, heatwaves) are on their way, and informs people how to act to minimize impacts. Underpinning the EWS will be WMO's global infrastructure composed of the WMO Integrated Global Observing System (WIGOS), the WMO Information System (WIS), and the WMO Integrated Processing and Prediction System (WIPPS), all of which rely heavily on modern information and communication technologies (ICT).

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.

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."

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 and affordability 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.

Part 3: Innovation and Progress, plans

WMO's Commission for Observation, Infrastructure and Information Systems (INFCOM) is responsible for the development and implementation of globally coordinated systems for acquiring, processing, transmitting, and disseminating Earth system observations, and related standards. The Executive Council in March 2023 approved the updated Implementation Plan of the WMO Information System 2.0 which is the next generation of WMO's information system.

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. WIS 2.0 supports the WMO Unified Data policy, the Global Basic Observing Network (GBON) and makes international, regional, and national data sharing simple, effective, and inexpensive. These objectives inspire the principles underpinning the WIS 2.0 technical framework, such as adopting open standards and Web technologies to facilitate sharing of increasing variety and volume of real-time data.

The WIS 2.0 pilot phase started in December 2022 and is scheduled for completion by the end of 2023. By September 2023, more than 40 national nodes are online, among which several are providing global services such as Global Broker, Global Cache and Global Discovery Catalogue. Training and capacity-building workshops are accompanying the rollout of WIS 2.0.

The users of WIS 2.0 will be able to access data in real-time by subscribing to a Global Broker and receiving notifications when new data is available for download from a Global Cache or from the data provider. They will also be able to access data directly through Web APIs (application programming interfaces), connecting their software (or their browser) and processing or visualizing data of their interest.

WMO has developed the open-source software "WIS2 in a box" to support Least Developed Countries and Small Island Developing States in implementing WIS 2.0.

At the World Meteorological Congress in May 2023, there was a universal acclaim for the new WMO Information System 2.0 (WIS 2.0), which is the framework for Earth Systems (meteorological, hydrological, climate and ocean) data sharing in the 21st century. WMO

Members were unanimous in welcoming WIS 2.0, especially its accessibility to developing and developed countries alike.

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