

WIGOS

WMO Integrated Global Observing System

IMPLEMENTATION



World
Meteorological
Organization

Weather · Climate · Water

WMO Integrated Global Observing System Implementing WIGOS

An Introduction to WIGOS and the WIGOS Framework Implementation Plan

The WMO Integrated Global Observing System (WIGOS) provides a new framework for advancing, integrating and coordinating WMO and co-sponsored observing systems. WIGOS is one of the WMO five strategic priorities, and it lays the foundations for each of the other four, especially the Global Framework for Climate Services, Disaster Risk Reduction and Capacity Development. By strengthening the global monitoring of the Earth's atmosphere, ocean surface and hydrology, WIGOS will greatly improve the information and forecasts available to decision-makers and society as a whole.

The WIGOS Framework Implementation Plan (WIP) details the activities that WMO and its partners will undertake from 2012 to 2015 in order to establish an operational WIGOS by 2016. The plan focuses on integrating governance and management mechanisms, functions and activities among the contributing systems. Goals include improving the quality and availability of data and metadata, developing capacity and improving access to data. The plan also seeks to ensure that WIGOS continues to evolve and improve well into the future.

Key Implementation Activities

The Implementation Plan assists system operators to migrate their observing systems into WIGOS through ten key activity areas. It details specific activities for each area and defines deliverables, timelines, responsibilities, costs



and risks. It also indicates whether each activity is to be implemented at the global, regional or national levels. The ten activity areas and their key activities, with timeframes and lead actors, are summarized below.

1 Management of WIGOS implementation

WMO Members are managing WIGOS implementation at the national level. To assist them in this role, the WMO Executive Council and the Regional Associations (RAs) are overseeing the global and regional implementation of WIGOS. The Commission for Basic Systems (CBS) and the Commission for Instruments and Methods of Observation (CI-MO) are providing technical leadership. The two commissions are working together with all of the technical commissions (TCs) and with support from the WIGOS Project Office (WPO). All WMO technical commissions are represented in the Inter-Commission Coordination Group on WIGOS (ICG-WIGOS), which keeps the WIGOS Implementation Plan under regular review and reports to the Executive Council and to the World Meteorological Congress.

2013 Regional WIGOS Implementation Plans developed: *Members, RAs*

2012–14 Technical aspects of WIGOS activities incorporated into RA and TC structures and procedures: *ICG-WIGOS, RAs, TCs, Members*

2015 WMO Technical Regulations and other regulatory material developed, revised and updated: *ICG-WIGOS*

2 Collaboration with the WMO co-sponsored observing systems and international partner organizations and programmes

WIGOS will consist primarily of WMO observing systems. It will focus on building interfaces among WMO, co-sponsored and non-WMO observing systems. Engaging regional and national actors will be essential for successfully integrating these systems.

2013–15 Architecture for climate monitoring from space developed. Initial implementation: *Coordination Group for Meteorological Satellites, Committee on Earth Observation Satellites, WMO Space Programme, CBS*

2014 Guidance, mechanisms and procedures for a partner strategy developed and distributed via the web Portal: *ICG-WIGOS*

2014 Responsibilities under partner strategy included in the terms of reference of appropriate bodies: *WMO Partners*

3 Design, planning and optimized evolution

Coordinated strategic planning at all levels will be based on the Rolling Review of Requirements (RRR) process. ICG-WIGOS, CBS and the other TCs will use this process plus input from Members to create initial specifications for WIGOS observing infrastructure. They will also use it to develop practices and procedures for inclusion in the WIGOS regulatory material. This will enable RAs and Members transition of their existing systems towards these specifications.

2013 RRR for WIGOS developed and included in the regulatory material: *Members, CBS, other TCs*

2014 Responsibilities included in the terms of reference of appropriate bodies: *Members, CBS, other TCs*

4 Integrated observing system operation and maintenance

WIGOS facilitates the sharing of operational experiences, expertise and resources in order to realize synergies and efficiencies within and between systems. Activities that will benefit from this include maintenance visits, spectrum management, calibration and traceability, and procurement.

2013 Text proposed on guidance for sharing experience, expertise and resourcing: *Members, ICG-WIGOS, TCs*

2015 Guidance, mechanisms and procedures for integrating observational data and products developed and published: *ICG-WIGOS*

2015 Responsibilities included in the terms of reference and work underway for some integration activities: *Members, ICG-WIGOS, TCs*

5 Integrated quality management

ICG-WIGOS will examine the current quality management procedures used by the WMO observing programmes and identify areas for improvement. ICG-WIGOS and relevant TCs will then develop WIGOS quality management guidelines, mechanisms, practices and procedures and describe these in the regulatory material.

2014 WIGOS Quality Management Framework developed and incorporated into WIGOS regulatory material: *Members, ICG-WIGOS, relevant TCs*

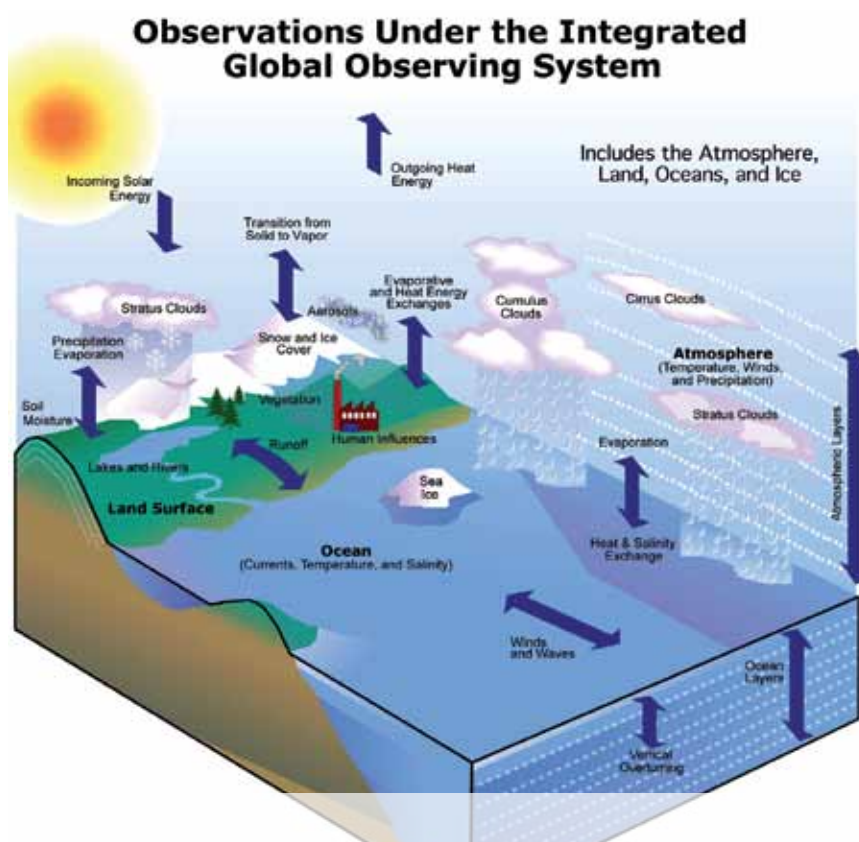
2014 Responsibilities included in the terms of reference of appropriate bodies: *ICG-WIGOS, relevant TCs*

6 Standardization, systems interoperability and data compatibility

WIGOS will use international standards and best practices for instruments, observation methods, metadata, discovery, access and retrieval services, and data management. Within the WIGOS Framework, the WMO Information System (WIS) will assure the standardized exchange of data and metadata.

2013 Guidance to WIGOS standardization developed: *ICG-WIGOS, relevant TCs*

2013 Developed standards to be documented in the WIGOS regulatory material and available on the web Portal as appropriate: *Members, relevant TCs, WPO*



Implementing WIGOS will improve observations of the interlocking geophysical processes that determine the Earth's weather and climate

7 The WIGOS Operational Information Resource (WIR)

WIR will be accessible via a centralized web Portal. It will provide all WIGOS-related operational information, including observational user requirements, description of contributing observing networks and capabilities, metadata, standards used in the WIGOS Framework, data policies, and metadata access. WIR will also contain general information on how WIGOS will benefit Members.

2013 WIR technical specifications designed and developed: *Secretariat in cooperation with Members*

2013-14 Decision made on development of WIR (internal vs. call for tender): *Secretariat in cooperation with Members*

2015 WIR operational acceptance: *Secretariat in cooperation with Members*

8 Data discovery, delivery and archiving

WIGOS implementation will enable all of the participating systems to adopt WIGOS and WIS standards. This will allow them to make their data and metadata available to various discovery, access and retrieval services through WIS. ICG-WIGOS will lead the effort to develop a mechanism for integrating additional sources of observational data and associated metadata.

2013 WIGOS metadata standards and initial access to WIGOS metadata developed: *ICG-WIGOS, TCs, Members*

2015 Initial metadata standards and practices approved and published in the WIGOS regulatory material: *ICG-WIGOS, Secretariat*

2015 More observational data and metadata made accessible through WIS: *WMO Members with support from the Secretariat*

9 Capacity Development

WIGOS will coordinate Capacity Development efforts at the global, regional and national levels. It will focus on filling existing gaps in the design, operation and maintenance of WIGOS observing systems. It will also provide access to technological innovation, technology transfer, technical assistance and decision-support tools. The focus will be on developing countries, least developed countries and small-island developing states.

2013 WIGOS Capacity Development Strategy published and available on the WIR: *ICG-WIGOS, WMO Education and Training Programme (ETR), RAs*

2014 Responsibilities included in the terms of reference of appropriate bodies: *ICG-WIGOS, ETR, RAs*

2015 Capacity Development activities underway: *ICG-WIGOS, ETR, RAs*

10 Communications and outreach

WIGOS will engage WMO Members by providing details on the socio-economic benefits that WIGOS will generate. It will leverage outreach programmes that have already been developed and effectively deployed by WMO and its partner organizations. The WIGOS Portal will offer convenient access to communications and outreach materials.

2012 An effective Communications and Outreach Strategy developed: *ICG-WIGOS, WMO Communications and Public Affairs Office (CPA)*

2012–13 Communication and outreach materials available: *WPO*

Project Management

The responsibility for WIGOS project management at the national level falls primarily on WMO Members. The WMO Executive Council will monitor, review, and guide overall implementation. ICG-WIGOS will report to the Executive Council and provide technical guidance for planning, implementation and development. The Secretariat will support ICG-WIGOS, its task teams and other relevant working bodies through the WPO and the WIGOS Project Oversight Board.

A mid-term evaluation plus interim progress reports and post-implementation reviews will provide early feedback on progress and address the accountability and transparency requirements for the implementation phase. The WPO will welcome progress reports from RAs, TCs and, in particular, from Members.

Resources

Timely implementation depends critically on the availability of resources. Resources provided by national and regional organizations will be essential, especially in the form of supplemental funding to the WIGOS Trust Fund, in-kind contributions and Voluntary Cooperation Programme funds (for WIGOS-related technical cooperation and Capacity Development). Full staffing requirements will need to be met primarily through secondments from Members.

The Benefits

The WIGOS Framework Implementation Plan will guide how WMO ensures that WIGOS is operational by 2016. History shows that investments such as those described in the plan will be repaid many times over. They will improve the socio-economic conditions and well-being of national populations in myriad ways. They will lead to better weather and climate forecasting and disaster preparedness and response. The active engagement and participation of WMO Members, Regional Associations and Technical Commissions will ensure that WIGOS is fully implemented and succeeds in delivering these critical benefits.

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