

WMO policy framework for public-private sector engagement

HLPP reference: 1.1

Increasing demands from all parts of society for meteorological information and an increasing number of stakeholders with interest in generating and providing this information to various user communities have led to repeated calls for WMO to (i) issue guidance on the interaction between public and private sectors and (ii) to review and update its data policies, in particular as articulated in Congress resolutions 40 (Cg-12), 25 (Cg-) and 60 (Cg-17).

This present document consists of two annexes, both to be discussed at the 18th World Meteorological Congress in June 2019. The first introduces the draft "Geneva Declaration" articulating a common framework of public-private sector engagement, while the second introduces the step being taken toward an overall review of WMO's data policies.

Action/Recommendation proposed: CGMS to take note of this development.

DRAFT RESOLUTION

- Draft Resolution 9.4(1)/1 (Cg-18)

Geneva Declaration – 2019: Building Community for Weather, Climate and Water Actions

THE WORLD METEOROLOGICAL CONGRESS,

Recalling that the Geneva Declaration of the Thirteenth World Meteorological Congress (1999), was adopted in response to the United Nations General Assembly, the Economic and Social Council and the regional economic and social commissions' appeal to WMO to contribute, within its field of competence, to the action taken at international, regional and national levels to promote and support sustainable development, especially activities pertinent to weather- and climate-related natural disasters, climate change and the protection of the environment,

Noting Decision 51 (EC-70) on preparing a new high-level policy document for consideration by the 18th Congress reflecting the WMO position, policy and guidance on public-private engagement in light of the global developments outlined in the UN Agenda for Sustainable Development 2030, the Paris Agreement for Climate Change, and the Sendai Framework for Disaster Risk Reduction,

Having considered the draft text of the Declaration which has been widely consulted with Members and partner international organizations,

Adopts the Congress Declaration entitled "Building Community for Weather, Climate and Water Actions", provided in the annex to this Resolution, as a high-level policy and guidance on public-private engagement,

Recognizing that the main policy texts of the Geneva Declaration (1999) have already been included in the preamble to the Convention,

Decides to remove the Geneva Declaration (1999) from the WMO policy documents and to replace it with the current Declaration, under the name "Geneva Declaration – 2019: Building Community for Weather, Climate and Water Actions";

Urges Members to use the Geneva Declaration – 2019 in planning pertinent national and regional actions, policies and strategies;

Requests the presidents of the technical commissions and of the regional associations to pay due attention to the Geneva Declaration – 2019 in applying inclusive approaches in their work including their subsidiary bodies, leveraging expertise and innovation from all sectors;

Requests the Secretary-General:

- a) To arrange for the circulation of the Geneva Declaration – 2019 to all Governments and to pertinent international and regional organizations;
- b) To publish the Geneva Declaration – 2019 as a WMO policy document.

Annex: 1

Annex to draft Resolution 9.4(1)/1 (Cg-18)

**DRAFT DECLARATION
OF THE EIGHTEENTH WORLD METEOROLOGICAL CONGRESS
BUILDING COMMUNITY FOR
WEATHER, CLIMATE AND WATER ACTIONS**

We, the delegates from 192 Member States and Territories of the World Meteorological Organization (WMO), meeting in Geneva from 3 to 14 June 2019 at the Eighteenth World Meteorological Congress, having considered that the global societal risks related to extreme weather, climate, water and other environmental events should be addressed through interdisciplinary and multi-sectoral partnerships, declare as follows:

We NOTE

- **The strong focus of the global agenda** on both immediate and long-term risks related to weather, climate and water, as reflected in the 2030 Agenda for Sustainable Development, the Paris Agreement on climate change, and the Sendai Framework for Disaster Risk Reduction;
- **The benefits from inclusive partnerships** between public, private and academic sectors, as well as civil society, at global, regional, national and local levels to help in achieving the sustainable development goals;

We FURTHER NOTE

- **The progress in science and technology** that significantly improves our collective ability to generate decision-supporting products and services for citizens, businesses and society;
- **The rapidly growing and changing demand** for weather, climate and water information and services can be met effectively by enhancing coordination and collaboration between the public, private and academic sectors;

We RECOGNIZE

- **The need to strengthen the entire weather, climate and water services value chain** – from acquisition and exchange of observations and information, through data processing and forecasting, to service delivery – to meet growing societal needs;
- **The evolving capabilities and growing engagement of the private sector** in strengthening all links of the value chain and accelerating innovation;
- **The persistent capacity gap between developed and developing countries** in the provision of essential services that impedes resilience to natural hazards;

- **The pressure to reduce public funding** which handicaps the ability of some National Meteorological and Hydrological Services (NMHSs) to sustain requisite infrastructure and services;
- **The crucial need for WMO to work more closely** with development and funding agencies, the private sector and the international finance community in designing and guiding development assistance aimed at closing the capacity gap;
- **The need for innovative approaches and incentives** to enable fair and equitable access to data, including to the rapidly growing non-traditional data from all sectors;

We REAFFIRM

- **The mission of WMO** to coordinate at the international level the generation and delivery of data and services by Members in support of the protection of life and property, safeguarding the environment, and contributing to sustainable development;
- **The role of WMO in the development and promulgation of international standards** to ensure the quality, interoperability and fit-for-purpose of information and services, and the importance of having all stakeholders adhere to those standards;
- **The vital importance of the mission of the NMHSs** in monitoring and understanding weather, climate and water, and in providing meteorological, hydrological and related information, warnings and services that meet national, regional and global needs;
- **The commitment of Members to ensure free and unrestricted exchange of meteorological, hydrological and climate data** by adhering to Resolutions 40 (Cg-12), 25 (Cg-13) and 60 (Cg-17) of the World Meteorological Congress, and to enable free and unrestricted access to the global meteorological and hydrological infrastructure coordinated by WMO and its programmes;
- **The responsibility of Members' governments to maintain and sustain requisite infrastructure** and the operation of international systems and facilities for observations, data exchange and information supply;

We WELCOME

- **The opportunities for all stakeholders and the broader user community** that will result from a closer collaboration among public, private and academic sectors;
- **The engagement of all sectors** in addressing the critical societal needs regarding weather, climate and water-related information and services;

- **The contributions of Members and partner international organizations to the global meteorological infrastructure** coordinated by WMO and its programmes;
- **The evolving role of WMO** as a facilitator in establishing and expanding partnerships between stakeholders from public, private and academic sectors that could significantly improve the availability of high-quality weather, water, and climate-related information and services in all countries;

We URGE all stakeholders from public, private and academic sectors to adhere to the UN Global Compact and WMO established principles for successful partnerships, which:

- **Contribute collectively** to achieving the overarching goals articulated in the WMO Convention;
- **Respect shared values** that create opportunities for innovation and growth based on science, leverage expertise to provide positive outcomes and solutions for all parties, support knowledge and technology transfer and uptake, invest in local research, and develop human capacity;
- **Promote sustainability of the global infrastructure** by seeking opportunities for multi-sector engagements that improve efficiency and better serve society;
- **Promote free and unrestricted international data sharing**, based on national circumstances, with intellectual property rights duly respected;
- **Enable all countries to advance together** through a coordinated approach for engaging the public, private and academic sectors, as well as civil society and investment partners, with special focus on bridging existing gaps in developing countries, Least Developed Countries (LDCs) and Small Island Developing States (SIDS);
- **Foster and maintain fair and transparent arrangements**, adhere to quality and service standards, to advance collective objectives in delivering public goods, taking into account specific stakeholder needs, such as:
 - Ensuring that access to commercial data with use restrictions is treated equally by and between public and private sector entities; and
 - Committing to comply with relevant national and international legislation and policy with respect to both data provision and avoidance of anti-competitive behaviour;
- **Seek integrity** by engaging in mutually beneficial relationships and partnerships to the benefit of society;
- **Respect the sovereign** right of Members in deciding how weather, climate and water services are organized and provided, including the application of national and regional policies for making data and products available on a free and unrestricted principle;
- **Ensure transparency** by providing information on the nature and scope of relevant institutional and operational arrangements to the entities concerned and to the public at large;

We ALSO ENCOURAGE

- **Pursuing efficiencies that enhance value-for-money**, including multi-sector and cross-border partnerships;

- **Developing innovative data exchange mechanisms and incentives** to increase data availability, resolve existing data gaps, promote greater data sharing and avoid fragmentation;
- **Continuing dialogues and initiatives** aimed at building trust, mutual understanding and cooperation between stakeholders from all sectors;
- **Stakeholders from all sectors** to act as powerful advocates for sustained government investment in core public infrastructure and capability;

We APPEAL to all Governments to give due consideration to the statements expressed in this Declaration to:

- **Foster structured dialogue** between public, private and academic sectors at national level;
- **Endeavour to put in place appropriate legislation and effective institutional arrangements** to enable cross-sector partnerships and remove barriers to mutually beneficial cooperation and collaboration;
- **Ensure the fulfilment of international commitments**, including those stemming from the WMO Convention, for sustainable operation of the international infrastructure and exchange of required data;
- **Safeguard and strengthen the authoritative voice of NMHSs** for the issuance of warnings that support critical decisions related to natural hazards and disaster risks, in collaboration with emergency response agencies;
- **Promote uptake of and compliance with WMO standards and guidance by all stakeholders** to enhance interoperability and the quality of data and products;
- **Engage with civil society** to extend the outreach to communities and citizens;
- **Encourage stakeholders from all sectors** to facilitate international data sharing and optimize national adaptation planning, disaster risk reduction and capacity development;

WE CALL ON partner organizations and development agencies to work closely with WMO to:

- **Increase the impact of capacity development** initiatives through strategic multi-stakeholder partnerships leveraging the investments, expertise and knowledge of all sectors;
- **Ensure the best use of development funds** to close the capacity gap, by exploiting financially viable business models that provide sustainable solutions for modernizing infrastructure and enhancing services in developing countries;
- **Optimize national adaptation planning** and disaster risk management to build resilience at all levels through a greater involvement of the expertise of the NMHSs in partnership with private and academic sectors, as well as civil society;

- **Reinforce the capability** of developing countries to contribute to the international exchange of data and products through WMO global systems, and to benefit from the global public goods produced collectively by the Members.

CBS-led review on Emerging Data Issues

DRAFT RESOLUTIONS

Draft Resolution 6.2(1)/1 (Cg-18)

EMERGING DATA ISSUES

THE WORLD METEOROLOGICAL CONGRESS,

Recalling:

- (1) Resolution 65 of (Cg-17) in which Executive Council was requested to guide a review of emerging issues in data and its use, in order to provide clarity and guidance for Members in navigating the rapidly changing world of data and data technologies,
- (2) Decision 41 (EC-68) in which the Commission for Basic Systems was requested to lead, in coordination with other technical commissions, a review of the challenges and risks, opportunities and benefits related to big data, crowd-sourced data, social media as well as emerging and future data sources, and their potential impact on Members, as the basis for production of a guidance document for Members,

Noting with appreciation that the report of the CBS-led Review of Emerging Data Issues, provided in full as [Cg-18/INF. 6.2\(1\)](#), and as executive summary in Annex 1 (hereafter referred as "the review"), has been completed after revision by Presidents of Technical Commissions and Presidents of Regional Associations,

Recognizing:

- (1) the need for the WMO community, including all stakeholders and individuals contributing to WMO programmes, to work together in order to:
 - (a) be better prepared to manage the challenges of emerging data issues, to address the risks and take advantage of the opportunities, and
 - (b) ensure that no Member is left behind in their capability to source, access and extract the highest value from data and from investment in data-related technologies, for the benefit of society,
- (2) that the highly successful World Weather Watch (WWW) epitomises a fundamental strength of WMO in relation to:
 - (a) its public interest mandate and associated data sharing policies and principles,
 - (b) its unique global science capability,

- (c) its core observing and data exchange infrastructure, standards, quality control and regulated practices,
 - (d) its access to expert knowledge, and
 - (e) its cascading global structure which is critical to ensuring all Members can access essential data and modelling products and that no Members are left behind,
- (3) that a compliance-based approach to data, especially to standards, technical regulations and data sharing arrangements, is a unique strength of WMO, which contributes directly to the collective performance of all Members,

Recognizing further:

- (1) That digital age disruption has already brought change, challenge and opportunity to WMO and its Members and will continue to do so, particularly in relation to the application of data, insights from data analytics, data science and technology, data-driven science, partnership opportunities, and user expectations;
- (2) That harnessing the power of innovative, new data technology and investing in data-related capabilities, in a way that aligns with strategy and budget and is targeted at delivering greater impact and value, will ensure that meteorological and hydrological service providers can more efficiently and effectively serve their users, inform better decisions and return higher value;
- (3) That new data technologies will require us to interact with different players (than the traditional stakeholder groups
- (4) The importance of a strategic approach to data, new data technologies and innovation across the WMO community, and the value of proactive engagement with the wider community of participants (people, organizations, sectors); and
- (5) The opportunity afforded by the convening power of WMO, especially in light of the constituent body reform and the WMO Strategic Plan 2020-23, to take a leadership role in facilitating the sharing of experiences, opportunities, achievements, plans and aspirations in relation to emerging data issues across the widest community.

Reinforces its commitment to the evolution of the WWW, via WIGOS, WIS 2.0 and seamless GDPFS, to reflect the challenges and opportunities of the 'data age';

Requests the Executive Council to consider the recommendations of the review and continue the evaluation of the emerging data issues and their implications on Members and weather enterprise as a whole;

Requests the Presidents of Technical Commissions

- (a) to consider the recommendations in the report in ensuring that the next generation of WWW systems are fit for purpose for the evolving, and increasingly disruptive, data paradigm that WMO and its Members are facing; and

- (b) to prioritise the development of appropriate practical measures to monitor and assess a compliance-based approach to data, including identification of barriers to compliance, and related capacity development actions;
- (c) to establish an appropriate cross-cutting subsidiary body to continue the analysis of the emerging data issues and their impacts, including initiative coordinated activities and engaging in pilot project activities aligned with WIS2.0, and to develop further WMO guidance on the subject.
- (d) as part of the ongoing evaluation of emerging data issues, to consider new approaches to encourage sharing of commercially-sourced data, in order to allow greater access to non-traditional sources of data or data not owned by governments, as well as to foster greater reciprocity within the WMO community;
- (e) to commence this work as a high priority after Cg-18;
- (f) to report back to Cg-19 on the above activities;

Requests the Presidents of Regional Associations to promote the utilization of the review by Members and to contribute to the future study of data issues by providing relevant regional perspective and expertise;

Requests the Secretary General:

- (1) to convene a global “WMO Data Conference” in 2020 if possible, or early in 2021 at the latest, as described in [Cg-18/INF. 6.2\(4\)](#), with the aim of exploring the evolution and sustainability of systems for the acquisition and exchange of meteorological data, including possible pathways toward establishing innovative modes of collaboration, and to provide input to ongoing WMO assessment and associated actions in relation to emerging data issues, with the participation of a broad range of stakeholders from the public, private and academic sectors;
- (2) to arrange for the translation and publication of the review into all WMO languages as a ‘WMO Guidelines on Emerging Data Issues’;

Invites Members to participate in coordinated initiatives, in collaboration with technical commissions and with stakeholders spanning public, private and academic sectors, to explore the potential to harness innovation and emerging technical opportunities and applications for the benefit of all.

[Annex: 1](#)

Draft Resolution 6.2(1)/2 (Cg-18)

DATA POLICIES AND PRACTICES

THE WORLD METEOROLOGICAL CONGRESS,

Recalling:

- (1) Resolution 40 of Cg-12 on the WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities
- (2) Resolution 25 of Cg-13 on the WMO policy and practice for the exchange of Hydrological data and products.
- (3) Resolution 60 of Cg-17 on the WMO Policy for the International Exchange of Climate Data and Products to Support the Implementation of the Global Framework for Climate Services
- (4) Resolution 65 of Cg-17 in which Executive Council was requested to guide a review of emerging issues in data and its use, in order to provide clarity and guidance for Members in navigating the rapidly changing world of data and data technologies,

Noting with appreciation that the report of the CBS-led Review of Emerging Data Issues, provided in full as [Cg-18/INF. 6.2\(1\)](#), and as executive summary in Annex 1 (hereafter referred as "the review"), has been completed after revision by Presidents of Technical Commissions and Presidents of Regional Associations,

Noting that the review highlights:

- (1) That meteorological and hydrological data are already amongst the most complex types of data to manage, being big, heterogeneous, dynamic and multi-dimensional, as well as inherently geospatial and multi-temporal.
- (2) That both observed and modelled data are integrated and standardized across political boundaries worldwide, spanning ocean, ice, land and its waterways, and the atmosphere from the boundary layer to beyond the stratosphere. The data are critical to safety, security and major socioeconomic activities, and are required to be exchanged and operationally accessible 24/7 in real-time to drive global NWP and to also form the basis of a secure, long-term climate record.
- (3) That the global community of WMO, with its strong foundation of science, standards and data exchange, provides a singularly important alliance for Members through the regulatory-based operation and basic elements of the World Weather Watch (WWW), and that the ongoing evolution of the WWW is critical to sustainability of the alliance;
- (4) That the open sharing of data, expertise and know-how, supported by alignment of capacity development with needs and the WMO global cascading partnership of

Members, whereby stronger Members (e.g. those operating Global Producing Centres) support less developed Members, are key to delivery of quality service outcomes at all levels and the principle that no Member is left behind.

Recognizing:

- (1) The changes occurring in the 'data landscape', with significant escalation in the diversity of observations and observing platforms, the diversity of products and services that are dependent on sustained data availability and accessibility, the diversity of actors engaged in provision of observations across public, private and academic sectors, and the diversity of business models for acquiring and sharing data, together with the evolution and innovation of data collection and processing technologies, and escalating growth in user demand for data and services;
- (2) That the sustainable operation of global NWP to support all Members and the achievement of a comprehensive WMO Earth systems approach is dependent on access to prescribed data from all Members and that any data gaps impact on the performance and ongoing improvement of such models;
- (3) That the exponential increase over the last two decades in the availability of and dependence on satellite-based observations, as an essential data source for global NWP, has been a significant factor in improvements in characterising, understanding and modelling the Earth system, and in improved forecast skill, but that the existing suite of WMO data policies do not adequately reflect the impact of and dependency on satellite-based observations nor do they adequately codify any specific obligations for sharing of such data;
- (4) That the increased diversity of data providers, spanning official national service providers, regional consortia and the private sector, is impacting decisions by Members on how they invest in observations and which data they share on a free and unrestricted basis. This necessitates further guidance for Members and clarity on WMO policies regarding the sharing of observations to support the public interest while maintaining viable commercial business models, noting also that many NMHSs also operate commercial arms.

_____ **Requests the Executive Council** to establish a process for the review of the WMO data policies and practices expressed in Resolution 40 (Cg-12), Resolution 25 (Cg-13) and Resolution 60 (Cg-17), and propose to the next session of Congress relevant amendments and updates, including :

- (a) alignment of the definition of 'essential' data as articulated in Annex 1 to Resolution 40 (Cg-12) with the new requirements and opportunities for generating global public good;
- (b) ensuring that the data policies and data sharing practices are fit-for-purpose in the current and evolving observational data paradigm;
- (c) ensuring that they appropriately reflect the escalating volume, variety and critical importance to Members of all types of data, especially satellite data, as essential inputs to global (and other) NWP;

- (d) assessment of opportunities and risks related to the utilization of rapidly growing volume of data from non-conventional sources; and
- (e) updated guidelines for relations between public, private and academic sector data users and providers.

[Annex: 1](#)

ANNEX 1 TO DRAFT RESOLUTION 6.2(2)/1 AND 6.2(2)/2 (CG-18)

Executive Summary of Review on Emerging Data Issues

The CBS-Led Review of Emerging Data Issues draws on a wide range of source materials and experts, including material compiled by the technical commissions at the request of the President of WMO and ongoing discussions in Congress, Executive Council, CBS and other technical commissions, and in working bodies associated with WIGOS, WIS, GDPFS and PWSD. The review responds to a range of concerns raised by Members related to their preparedness for the rapidly growing volume and diversity of data, their growing awareness of the potential of 'Big Data' analytics, new data technologies, such as internet of things (IoT), and of the new players active in providing data and services, the changing approaches to data sharing as the diversity of data sources and players has expanded, and the implications of greater capacity and agility for innovation by the private sector on the operation of the overall global weather enterprise.

The discussion and the framing of potential advice to bring back to Congress roams from evolution to revolution, including the need to strengthen the 'irreducible core' of WMO and its Members through reinforcing the essential role of the WWW; the aspiration that 'no Member will be left behind' and that 'no Member stands alone'; the need to engage, be inclusive and build alliances, especially between the public, private and academia sectors; the need to create and exploit opportunities through data; and the need to challenge traditional pathways while recognising the important ongoing, though potentially changing, roles of people.

Emphasis is placed on harnessing the excellent work already being provided through WMO's response to data and technology, in particular through WIGOS, WIS/WIS2.0, GDPFS/S-GDPFS (which together are heralding WWW 2.0) and Service Delivery Strategy (SDS), on equipping Members with the essential tools and advice to adapt, adopt and respond to these opportunities, and on mobilising WMO as a brand focussed on standardisation, coordination and facilitation of a global community in the service of society. Recognising that some Members are better equipped than others to manage the challenges of increasing data volumes and technical complexity, the review calls for practical steps to equalise capacity, guide decisions and extract genuine value from data for all Members.

The review converges around the important reminder that data is a means to an end, not an end in itself. It is only through its intelligent use in engaging with users and in the development and uptake of services and associated outcomes that meet societal needs, that data delivers its full value, be it over the long term required for historical climate insight and impact management, the medium term for effective water and natural resource management and disaster preparedness, or over the shorter term to warn of, and support response to, impending severe weather events and disasters. The review provides a response framework featuring concrete actions centred on:

Thinking global:

Building on the fundamental role and strengths of WMO epitomised through its mandate and regulatory framework, its unique global science capacity, its global observing and data sharing policies and infrastructure, and its commitment to building capacity across all Members, and committing to implementing the next generation of WWW systems (WWW 2.0) that are fit-for-purpose for the evolving, and increasingly disruptive, data paradigm that WMO and its Members are experiencing;

Reinforcing the importance of a strategic approach to data and data sharing, and the leadership role and convening power of WMO in the overall global weather enterprise through proactive engagement and partnering with the wider community of participants, embracing the public and private sectors and academia, and through collaboration in reviewing the principles, policies and resolutions that underpin free and open sharing of meteorological and related data;

Supporting Members, through guidance material and WMO's cascading processes, on emerging data and supply chain decisions, including on defining national mandates and policies in relation to weather, climate and water data and services; and

Aligning WMO programmes and the working mechanisms of technical commissions and regional associations with due consideration to emerging data challenges, risks and opportunities.

Acting local:

Harnessing the power of Members, data and people to inform choices across national data and service delivery supply chains, and to extract the highest value from data and the best outcomes for national and regional communities;

Building partnerships with non-NMHS data providers to extend the coverage of observations, to collaborate in the design of networks and targeting of services and to harness their voice as advocates;

Investing in people and capabilities for the long term through identifying current and emerging skill requirements that enable Members to uniquely deliver user-valued benefits and sustainable outcomes through more effective

use of data and management of data infrastructure, with a focus on diversity, inclusion and collaboration; and

Leveraging digital communications and social media to build productive two-way connections with user communities.

Reaching out:

Embracing emerging opportunities in data, science, technologies and partnerships and harnessing the power of innovation and data-disruption, including through sharing experiences and participation in pilots and/or coordinated initiatives with partners across the global weather enterprise;

Implementing an innovation framework at the institutional level to identify and test new ideas aligned with priority needs and strategy, in the context of budget and capability; and

Reimagining what high-impact services might look like, including through expanding the concept of impact-based services into an integrated services approach, where publicly-funded-data is freely accessible and integrated with data from sector-based sources to develop more context-relevant and actionable services that directly inform and benefit users.

Emerging trends in data and data technologies offer the whole WMO community, individual WMO Members and the broader global weather enterprise, the challenge and the opportunity of new scientific and technological horizons. They challenge us to reimagine what efficient, effective and relevant services and service delivery could look like, how through working together in new and innovative ways we can better position ourselves for the future, and how genuine value can be delivered to society through and from data.