



## WMO OMM

World Meteorological Organization  
Organisation météorologique mondiale  
Organización Meteorológica Mundial  
Всемирная метеорологическая организация  
المنظمة العالمية للأرصاد الجوية  
世界气象组织

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2021 年 4 月 1 日

附件: 1 (仅以英文提供)

主题: WMO 数据政策将在于 2021 年 4 月 12 至 16 日召开的 INFCOM-1(III)上讨论

- 要求采取的行动:
- (1) 注册成为 INFCOM 成员
  - (2) 审查数据政策和 INFCOM-1(III)/文件 5.1.5
  - (3) 注册 INFCOM-1(III)并提供代表证书

尊敬的先生/女士,

谨提醒大家,世界气象组织(WMO)观测、基础设施与信息系统委员会(INFCOM)第一届会议第三部分将于 2021 年 4 月 12 至 16 日通过虚拟多语种平台在线举行。

请注意,继世界气象大会第十八届会议通过“[决议 56\(Cg-18\)](#) – 数据政策和规范”提出倡议后,新的“WMO 地球系统数据国际交换统一政策”草案已经拟就。即将召开的基础设施委员会届会将讨论一项关于[新数据政策的拟议大会决议\(INFCOM-1\(III\)/文件 5.1.5\)](#),为此鼓励各常任代表和其他代表以及对 WMO 数据政策感兴趣的观察员注册并出席会议。

届会的临时议程和解释性备忘录以及包括文件 5.1.5 在内的届会文件均可在[届会网站](#)上查阅。附件中还有 WMO 数据政策的简要摘要,并可从届会网站[下载](#)。

为派代表参加观测、基础设施与信息系统委员会(INFCOM),请会员的外交部、负责气象服务的部委或常驻联合国办事处和日内瓦其他国际组织代表团向秘书长发函(若您尚未发送此函的话)。目前已派代表的会员名单详见[这里](#)。信函可通过电子邮件发送至 [wmo@wmo.int](mailto:wmo@wmo.int)。

鉴于常驻代表在 WMO 具有正式地位,敬请各位常任代表担任其出席 INFCOM-1(III)代表团在线注册的联络人。已通过电子邮件发给 WMO 常任代表的在线[活动注册系统\(ERS\)](#)的链接、用户名和密码对所有即将举行的 WMO 会议依然有效。欲获得在线预注册的更多信息,请随时通过电子邮件 [register@wmo.int](mailto:register@wmo.int) 与 WMO 秘书处联系。

致: 会员 WMO 常任代表

抄送: 水文顾问

请注意，通过在线 ERS 提交信息并不能免除会员提供其与会代表团的全权证书，全权证书应清楚注明首席代表及其代理人，由会员的适当政府主管部门或代之签署。信函可通过电子邮件发送至 [registration@wmo.int](mailto:registration@wmo.int)。

鉴于虚拟届会期间讨论文件的时间有限，为便于讨论，请各常任代表和届会代表在届会前通过 [plenary@wmo.int](mailto:plenary@wmo.int) 提出意见和对文件的拟议修改。

您诚挚的



张文建博士  
代秘书长

WEATHER CLIMATE WATER



WORLD  
METEOROLOGICAL  
ORGANIZATION

# WMO Data Policy

Introducing the draft WMO Unified Data Policy  
Doc. 5.5 INFCOM-1(III)



## Why is WMO updating and reviewing its data policy?

**The last decades have seen explosive growth in the demand for weather, climate and water monitoring and prediction data to support essential services needed by all sectors of society, as they face issues such as climate change, increasing frequency and impact of extreme weather, and implications for food security.**


The free and unrestricted exchange of observational data from all parts of the world and of other data products among all WMO Members must be updated and strengthened to accommodate this growing demand. As the responsibilities of the National Meteorological and Hydrological Services (NMHSs) continue to expand, a growing list of application areas beyond the traditional weather, climate and water activities need to be supported by WMO observing, data exchange and modelling systems. WMO data policy must therefore evolve to accommodate areas such as atmospheric composition, oceans, cryosphere and space weather.

Ref.: 08088/2021-1.0 GS

### WMO data exchange – 70 years of global collaboration on monitoring, understanding and predicting the Earth system

The World Weather Watch was established in 1961 to coordinate the acquisition and international exchange of meteorological observations and derived data products among WMO Members via its component systems: the Global Observing System, the Global Telecommunication System and the Global Data-processing and Forecasting System.

All NMHSs around the world contribute input data to these systems every day and they rely on what they receive in return – data from other NMHSs and model products and other processed data - for their service delivery. The success of the World Weather Watch has led to the establishment of related systems in other areas, for example, the Global Atmosphere Watch and the Global Cryosphere Watch.



*"We live in a time of brilliant technologies and the rhythm of innovation is increasing at an unprecedented pace. We have access to a wealth of earth observations, and high-performance computing platforms allow us to tackle previously unsolvable problems. Not only is this forcing us to rethink our business models and our partnership strategies at the national level, it will also have a fundamental impact on the global meteorological enterprise."*

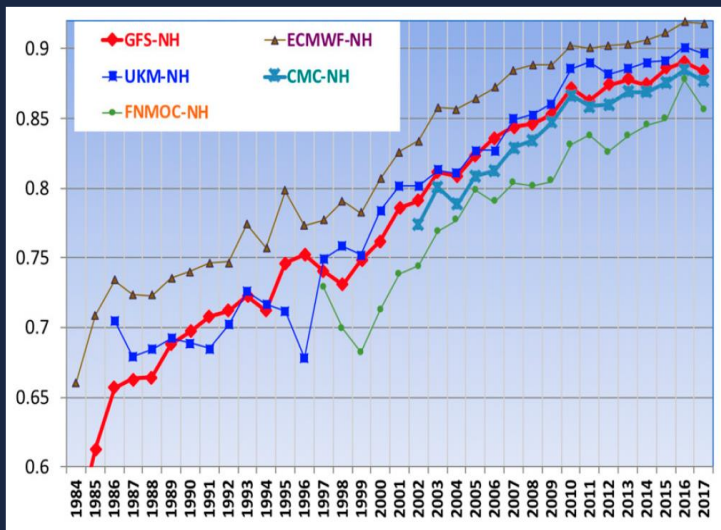
*Michel Jean, President of WMO Infrastructure Commission, at the WMO Data Conference 2020.*

## What is the role of WMO data policy?

**Weather and climate are local in impact but global in nature. International data exchange is therefore needed to help us understand and predict them. WMO is updating its data policy to accommodate the growing need for global access to observations and model data and to reflect the interdisciplinary nature of Earth system monitoring and prediction.**

Delivery of weather and climate services depends on routine international exchange of weather and climate data, 24/7, 365 days per year, often within minutes of real time. Observations are ingested into prediction models, and model output is disseminated to all 193 WMO Members and used as a basis for their weather and climate services. A primary aim with the establishment of WMO in 1951 was to create a coordination mechanism for the acquisition and international exchange of such data. WMO data policy, as articulated in Resolution 40 (Cg-XII), Resolution 25 (Cg-XIII) and Resolution 60 (Cg-17), establishes the general framework for the international exchange of weather, climate and water data.

Ref.: 08088/2021-1.0 GS



### Value of global data exchange in weather and climate prediction

- Modern weather and climate services depend on universal access to output from numerical weather prediction (NWP) systems
- Global exchange of observational data as input for NWP is indispensable
- NWP output is also exchanged among centres to monitor and foster continued progress
- There have been decades of systematic improvement in numerical weather predictions, thanks to data exchange coordinated by WMO (plot to the left)

Progress in key quality measure of Numerical Weather Prediction output from five centres over the period 1984–2017; a value of 1.0 indicates a perfect five-day forecast

Source: Taken from Benjamin et al., 2019: 100 years of progress in forecasting and NWP applications. *Meteorological Monographs* 59.

## Climate change – a generational challenge that requires an integrated Earth system approach to monitoring, prediction, mitigation and adaptation efforts

Monitoring and understanding climate change require observations and simulations of the chemical composition of the atmosphere in addition to the traditional meteorological data. Seasonal and inter-annual prediction requires marine observations and coupled atmosphere–ocean modelling. Furthermore, longer-term predictions and projections increasingly depend on observations from the deep ocean. The efforts required to adapt to and mitigate climate change require detailed local information, supported by global reanalysis data. Integration of hydrological observations and model data is essential for research and development, for advisories and warnings, for food security and energy supply. Monitoring freshwater supplies and understanding and adapting to changes in sea-ice cover, permafrost and seasonal snow cover require strong cryosphere-monitoring efforts.

# Proposed WMO unified policy for international exchange of Earth system data

## Data exchange for the 21st century

Ref.: 08088/2021-1.0 GS



**Integrated Earth system data policy** – encompassing all WMO-relevant Earth system data: weather, climate, hydrology, ocean, atmospheric composition, cryosphere, space weather. It builds on existing WMO data policies used successfully in the past: Resolutions 40 (Cg-XII) (weather), 25 (Cg-XIII) (hydrology) and 60 (Cg-17) (climate).



**Clear commitment to free and unrestricted data exchange** – clarifying the explicit and literal interpretation of the term “free and unrestricted” exchange, and expressing clear organizational commitment to it as the core principle of the policy.



**Expanded scope and purpose** – introducing new terminology on data, replacing “Essential” and “additional” data (Resolution 40), with “mandatory” data (standard practice, shall be exchanged) and “Recommended” data (best practice, should be exchanged). The scope and purposes of mandatory and recommended data, respectively, are described in general terms for each domain or discipline.



**Call for subsequent implementation of policy via regulatory material** – specific details of what data are to be considered mandatory and recommended will be included, and regularly updated, in the WMO Technical Regulations.



**Includes guidelines for national implementation and public-private engagement.**

### WMO data policy milestones

- June 2019 – Eighteenth World Meteorological Congress triggered comprehensive review on WMO data policy
- February 2020 – First session of Study Group of Data Issues and Policies (SG-DIP) recommended that a new unified WMO data policy resolution should be drafted
- September 2020 – Seventy-second session of the Executive Council gave green light for SG-DIP to proceed with drafting of new data policy resolution
- November 2020 – WMO Data Conference (preceded by preparatory stakeholder consultations) discussed proposed new policy. More than 1200 participants and strong endorsement
- April 2021 – WMO Infrastructure Commission – first intergovernmental test of new data policy
- June 2021 – Seventy-third session of the Executive Council will provide final recommendation to Congress
- October 2021 – WMO Extraordinary Congress – submission of new WMO data policy

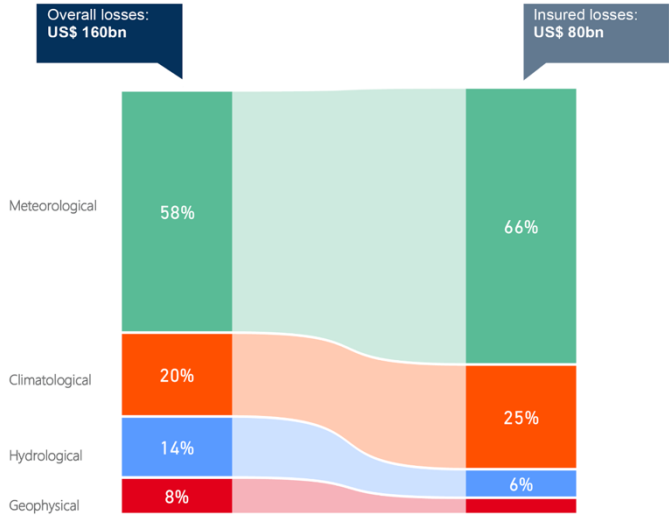
Find the draft Resolution 42 at <https://meetings.wmo.int/INFCOM-1-III/English/Forms/>



# What are the benefits of the new WMO data policy?

More than 90% of all economic losses due to natural disasters in 2018 were caused by weather-, climate- and water-related phenomena.

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Munich Re

Source: Munich Re NatCatSERVICE

The growing number of weather-related disasters and the associated economic losses show the challenge facing the WMO community: How best to serve all Members and their citizens with timely and reliable data products and services?

The proposed data policy update will help the WMO community strengthen and better sustain monitoring and prediction of all Earth-system components, with massive socioeconomic benefits as a result. It will lead to additional exchange of all types of environmental data, which in turn will enable all WMO Members to deliver better, more accurate and timely weather- and climate-related services to their constituencies.



## Data policy enabling interdisciplinary, multi sectoral collaboration

The new WMO data policy will:

- Establish clear guidelines to foster constructive collaboration on weather and climate issues across public and private sectors, as well as academia
- Integrate all WMO guidance on weather, climate, water and related environmental data into a single, clear and modular structure; facilitate interpretation as well as update and review
- Help Members leverage their Earth system capabilities by providing a clear policy framework to guide national implementation and collaboration
- Increase overall return on investments in acquiring and generating Earth system data