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| WEATHER CLIMATE WATER | **World Meteorological Organization****WORLD METEOROLOGICAL CONGRESS****Nineteenth Session**22 May to 2 June 2023, Geneva | **Cg-19/Doc. 4** |
| Submitted by:Chair of Plenary29.V.2023**APPROVED** |

**AGENDA ITEM 4: TECHNICAL STRATEGIES SUPPORTING LONG-TERM GOALS**

# Consideration of the report of the Chair of the hydrological assembly

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# GENERAL CONSIDERATIONS

### Introduction

This document presents the major advice to Congress expected from the Hydrological Assembly at its third session, to be held on 26-27 May 2023, as well as the outcomes from regional consultations with Hydrological Advisers held since March 2023.

Review of the Plan of Action associated to the WMO Vision and Strategy for Hydrology ([Draft Resolution 4/1 Cg-19](#_Draft_Resolution_4/1))

1. The implementation of the WMO Vision and Strategy for Hydrology and its associated Plan of Action (PoA) adopts the “Earth system” approach, aiming to break down barriers between different disciplines looking at the planet, linking the atmosphere, the ocean and the terrestrial and freshwater realms, the cryosphere and even the biosphere. As such, the implementation of the PoA requires the involvement of other WMO entities besides the usual ones dealing with hydrology (i.e. the Standing Committee on Hydrological Services (SC-HYD), the Joint Expert Team on Hydrological Monitoring (JET-HYDMON), and the regional groups on hydrology). A proposed distribution of responsibilities for the implementation of the PoA has been approved by the Executive Council (EC) based on the advice of the Hydrological Coordination Panel (HCP) ([Decision 2/1 (EC-76](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=/EC-76/English/2.%20PROVISIONAL%20REPORT%20(Approved%20documents)/EC-76-d02-CONSIDERATION-REPORTS-approved_en.docx&action=default))). It is acknowledged that technical commissions’ bodies need more time to properly incorporate and adapt the PoA as necessary into their respective workplans. To facilitate the use of the PoA and better implement the activities therewith contained, an [online “living document” version of the PoA](https://www.hydroref.com/wmo/hcp/index.php) has been developed. Moreover, to allow the HCP to monitor and update on a yearly basis the advancements in the implementation of the PoA, based on feedback received by the relevant implementing entities, and consequently adjust the PoA, a methodology has been developed by HCP-5 and it is presented for Congress consideration.

2. Consideration is also given to the outcome of [Decision 5 (EC-75)](https://library.wmo.int/doc_num.php?explnum_id=11550#page=64), requesting “the technical commissions, in cooperation with HCP, the Research Board, and other relevant bodies, to map proposed Water and Climate Coalition (WCC) activities to the WMO Hydrology Action Plan and, where there is alignment with the Action Plan, to accelerate the ongoing activities of the technical commissions that support WCC objectives”, describing how WMO should respond to other requirements from the Water and Climate Leaders’ call based on the WMO PoA for Hydrology.

3. The draft resolution also contains the major recommendations stemming from the Hydrological Assembly, such as, to mention one, to exert care in the use of the term “hydrological services”, better reflecting WMO mandate on operational hydrology.

Consideration of engagement of hydrologists in WMO Governing and subsidiary bodies

4. The integration of hydrological topics in the Commission for Observation, Infrastructure and Information Systems (INFCOM) and the Commission for Weather, Climate, Water and Related Environmental Services and Applications (SERCOM), even though successful for the implementation of the Earth System approach, has unfortunately entailed a reduction in visibility of the hydrological topic and therefore a decrease in attendance of hydrologists in technical commissions. While the number of Members attending the most recent sessions of the former Commission for Hydrology was constantly in the order of fifty or sixty, in the 2022 sessions of INFCOM and SERCOM the number of Members having a hydrologist in their delegations was only about twenty to twenty-five. This may be due to too few agenda items specifically on hydrology, the lack of awareness that many other documents address transversally meteorological, climatological and hydrological topics, and the difficulties for national hydrology experts to be authorized to attend a session whose relevance for hydrology does not appear clearly from its agenda.

5. Following [Resolution 24 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827/#page=98) the nomination of Hydrological Advisers become mandatory (use of the term “shall”) for Members (as opposed to the previous optional nomination by the Permanent Representative), thus strengthening their role and their representation of their national hydrological community. Furthermore, by [Regulation 135](https://library.wmo.int/doc_num.php?explnum_id=11187/#page=78) the regional presidents should be assisted by a regional Hydrological Adviser (RHA). RHA used to be the chair of the regional working group in charge of hydrology and water related issues; however, under the current trend of aligning regional structure with the global one (i.e. one body for infrastructure and one for services) it may be more difficult and less straightforward to identify a RHA (who was usually the Chair of the Working Group on Hydrology), with the risk of leaving the position vacant. In the current institutional framework, the only role left without a formal figure to assist in hydrology related matters is the President of the Organization.

Regional implementation plans for the WMO Hydrological Status and Outlook System (HydroSOS)

6. The WMO Hydrological Status and Outlook System (HydroSOS) is one of the flagship initiatives of WMO to make available current and future assessments of water resources at different spatial and temporal scales, covering a large range of products, including snow, groundwater, soil moisture, lakes, and reservoirs. Since the closure of the HydroSOS pilot phase in 2021 ([Resolution 5 (Cg-Ext(2021)](https://library.wmo.int/doc_num.php?explnum_id=11113/#page=155)), a series of implementation plans have been developed at the regional and national levels. These plans, developed by RHAs with the support of the HydroSOS Technical Development Team, the Implementation Team and regional hydrological groups, have been presented to the Hydrological Assembly for their feedback and endorsement.

**Expected action**

7. Based on the above, the Congress is invited to adopt Resolutions [4/1 (Cg-19)](#_Draft_Resolution_4/1), [4/2 Cg-19)](#_Draft_Resolution_4/2) and [4/3 (Cg-19)](#_Draft_Resolution_4/3).

# DRAFT RESOLUTIONS

## Draft Resolution 4/1 (Cg-19)

## Review and implementation progress of the Plan of Action associated to the WMO Vision and Strategy for Hydrology

THE WORLD METEOROLOGICAL CONGRESS,

**Recalling:**

(1) [Resolution 4 (Cg-Ext(2021))](https://library.wmo.int/doc_num.php?explnum_id=11113/#page=36) – WMO Vision and Strategy for Hydrology and its related Plan of Action (2021), which sets the hydrology related activities for the period 2022‑2030 articulating over the eight Long-Term Ambitions for hydrology,

(2) [Resolution 6 (Cg-Ext(2021))](https://library.wmo.int/doc_num.php?explnum_id=11113/#page=193) - [WMO Water Declaration](https://library.wmo.int/doc_num.php?explnum_id=11264) and Water and Climate Coalition,

**Having examined** [Decision 2/1 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=/EC-76/English/2.%20PROVISIONAL%20REPORT%20(Approved%20documents)/EC-76-d02-CONSIDERATION-REPORTS-approved_en.docx&action=default) – Consideration of reports, on the assignment of responsibilities to other WMO bodies for the implementation of the WMO Vision and Strategy for Hydrology and its associated Plan of Action 2022-2030,

**Having considered** the advancements in the implementation of the Plan of Action presented in Cg‑19/INF. 2.6 and the progress in the Early Warnings for All initiative (Cg-19/INF. 3(1));

**Accepting** that the WMO Plan of Action for Hydrology activities identified as synergistic with the WCC work plan (listed in [SERCOM-2/INF. 9.2](https://library.wmo.int/doc_num.php?explnum_id=11502/#page=458) and [INFCOM-2/INF. 4.3](https://library.wmo.int/doc_num.php?explnum_id=11566#page=73))) will be the sole contribution of the hydrological community of WMO to the WCC workplan, with the expectation that the WCC will add value by increasing outreach and impact of, and potentially mobilizing resources for, the outputs of the implementation of the WMO Plan of Action for Hydrology;

**Noting** that the common use of the term “water services” usually refers to the supply of potable or non-potable water and sanitation (including storage, measurement, treatment and distribution), a topic which falls beyond the mandate of the WMO Convention,

**Takes note** of the recommendation by the Hydrological Assembly that the following are currently key challenges in operational hydrology:

(1) Capacity development, in relation to in-situ hydrological observations and local hydrological services delivery within the Earth system approach;

(2) Dialogue and cooperation between agencies involved in meteorology, hydrology, hydrogeology *[Indonesia]* and disaster management, scientific institutions and academia in order to strengthen the links between operational hydrology and applied research;

(3) The strengthening of subregional transboundary cooperation where appropriate;

**Recognizes** the important role the Regional Associations play in identifying hydrological priorities due to the regional variation in hydrology, the diversity in hydrological institutional capacity, and the different approaches to hydrological data sharing;

**Decides**:

(1) To maintain the [WMO Vision and Strategy for Hydrology and its associated Plan of Action](https://www.hydroref.com/wmo/hcp/index.php) adopted through [Resolution 4 (Cg-Ext(2021))](https://library.wmo.int/doc_num.php?explnum_id=11113/#page=36) as a “living document” in its electronic version;

(2) To adopt the amendment methodology to the WMO Vision and Strategy for Hydrology and its associated Plan of Action contained in [Annex](#_Annex_to_draft) to this resolution;

(3) To accelerate the implementation of the [WMO Vision and Strategy for Hydrology and its associated Plan of Action](https://www.hydroref.com/wmo/hcp/index.php) in the framework of the EW4All to deliver results especially in relation to floods, droughts and cryosphere-related hazards, giving priority to capacity development activities as appropriate;

**Requests the Executive Council**

(1) To continue monitoring the progress *[United Republic of Tanzania]* in the implementation of the WMO Vision and Strategy for Hydrology and its associated Plan of Action based on feedback received by the relevant implementing lead entities, with the assistance of the Hydrological Coordination Panel (HCP);

(2) To keep track of and approve changes to the WMO Vision and Strategy for Hydrology and its associated Plan of Action as outlined in the Annex; *[Germany]*

(3) To prioritize for the next financial period, with the assistance of the Hydrological Coordination Panel, the implementation of elements of the WMO Vision and Strategy for Hydrology and its associated Plan of Action which contribute to the EW4All initiative, and those expressed as a priority by the Hydrological Assembly;

**Requests the Secretary-General** to exert care during the preparation and editing of constituent body session documentation and other official WMO communications in properly representing the mandate of WMO in the domain of hydrology by using “hydrological services” rather than “water service” and in case of doubt to adopt the former;

**Encourages** Members to become acquainted with the content of the Plan of Action to determine how they can benefit from and contribute to its implementation; and

**Invites** the United Nations, the United Nation System organizations, other partner international organizations and relevant public, private and academic institutions, to consolidate their actions in support to the implementation of the WMO Vision and Strategy for Hydrology and its associated Plan of Action, recognizing it as a fundamental and necessary building block in fulfilling the objectives of the Sustainable Development Agenda.

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[Annex: 1](#_Annex_to_draft_3)

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## Annex to draft Resolution 4/1 (Cg-19)

## Process for the update of the WMO Vision and Strategy for Hydrology and its associated Plan of Action

### 1. Minor Changes

1.1 Type of changes included in this category:

(a) General wordsmithing and editorial changes,

(b) Indication of Contributors,

(c) Indication of Partners,

(d) Proposed Linkages with other ongoing activities, or

(e) Yearly updates on implementation.

1.2 Process proposed for this category:

HCP is fully responsible, based on feedback received by the relevant implementing lead entities, to continue monitoring the advancements in the implementation of the WMO Vision and Strategy for Hydrology and its associated PoA. Minor changes will be implemented by HCP and EC will be informed annually through the report of the Chair of HCP on the progress of implementation and on the nature and extent of changes of PoA made over the previous period.

### 2. Moderate Changes

2.1 Type of changes included in this category:

(a) Definition of Milestones,

(b) Changes to activity end-date,

(c) Changes related to the prioritization of activities,

(d) Changes to the success criteria,

(e) Lead responsibility attribution, or

(f) Activity definition or suppression.

2.2 Process proposed for this category:

(a) The Lead responsible entity suggests the change,

(b) HCP assesses its consistency within PoA and addresses a recommendation to the relevant responsible body (at TC level),

(c) The Lead responsible entity (previous and possible proposed entity, in case of change type (e) above) changes its workplan in agreement with the technical commission, and

(d) HCP includes the changes to PoA and further coordinates with the bodies involved. EC will be informed annually through the report of the Chair of HCP.

### 3. Substantive Changes

3.1 Type of changes included in this category:

(a) Changes at the output level.

3.2 Process proposed for this category:

(a) The Lead responsible entity suggests the change,

(b) HCP considers the change and issues a recommendation to EC (in consultation with the relevant technical commission as applicable), and

(c) The Hydrological Assembly further considers the change and issues a recommendation to Congress General for approval.

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## Draft Resolution 4/2 (Cg-19)

## Consideration of engagement of hydrologists in WMO Governing and subsidiary bodies

THE WORLD METEOROLOGICAL CONGRESS,

**Noting with pleasure** the strong and active participation of Members in the Hydrological Assembly*,*

**Having examined** the need expressed by the Hydrological Assembly to increase the engagement of hydrologists in the governing and subsidiary bodies, and the visibility of hydrology related topics in the agendas of their sessions, which is essential to achieving the integrated Earth system approach of the broader mission of WMO,

**Noting** the importance of enabling hydrologists to engage in WMO activities by ensuring an appropriate balance of disciplines when designing agendas, working structures and work programmes of the Organization*,*

**Having considered** the concern of the Hydrological Assembly about the diminished attendance of hydrologists in the sessions of the technical commissions and in the Research Board, hence undermining the success of the “Earth system” approach that aims to break down barriers between different disciplines looking at the Earth via an integrated approach, linking the atmosphere, the ocean, the terrestrial and hydrosphere realms, the cryosphere and even the biosphere,

**Having further considered**, that, while the Permanent Representative of Members and the presidents of Regional Associations can count on their national or regional Hydrological Advisers for consultation and to get advice with respect to operational hydrology and its application to water management, this advisory role does not exist for the President of the Organization,

**Decides**:

(1) To establish the role of a Hydrological Adviser for the President of the Organization;

(2) To assign such role to the elected Chair of the Hydrological Assembly;

(3) To modify the wording of [Regulation 135 (b)](https://library.wmo.int/doc_num.php?explnum_id=11187/#page=78) as follows: “The president of an association ~~should~~shall be assisted by a regional Hydrological Adviser designated at each ordinary session of the association, who should be a representative of a National Hydrological Service responsible for operational hydrology or another national hydrological agency with the following duties:

(1) To maintain contact, through the president of the association, Permanent Representatives and Hydrological Advisers of Members, with Hydrological Services of Members;

(2) To collate information on needs, activities, capabilities and compliance with Technical Regulations in the field of operational hydrology in the Region;

(3) To facilitate adequate representation of hydrological experts in the technical commissions;

(4) Between sessions of the association, to be consulted by and to advise its president on the above matters;

(5) To perform any other duties entrusted by the president of the association.”

**Requests** the Executive Council to decide on the terms of reference *[Norway, Germany]* of the Chair of the Hydrological Assembly as the Hydrological Adviser to the President of WMO in the relevant rules and terms of reference;

**Further requests** the Executive Council, in consultation with *[Germany]* the Hydrological Coordination Panel, to make recommendations to be considered at the next session of Congress concerning how to enhance the engagement of hydrologists in WMO Governing and subsidiary bodies;

**Requests** presidents of technical commissions, presidents of regional associations and the President of WMO to organize the agenda of sessions and name the relevant documents in a way to highlight, as appropriate, the relevance for hydrology of the various topics discussed and attract the participation of hydrologists;

**Requests** the Secretary-General to emphasize in the notification letters to Members for technical commissions sessions the importance to Members of the attendance of hydrologists at such sessions, as hydrological topics are inherent in the Earth System approach even if not explicitly mentioned, and to encourage Members taking this into account when considering the composition of their delegations; and

**Also requests** the Secretary-General to ensure appropriate consultations with regional and national Hydrological Advisers *[Kenya, Costa Rica]* in preparation of activities, conferences, trainings, management group meetings agendas and selection of participants in order to advance in the cooperation between meteorology and hydrology and better contribute to the WMO Vision and Strategy for Hydrology and its associated Plan of Action 2022-2030.

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## Draft Resolution 4/3 (Cg-19)

## Regional implementation plans for the WMO Hydrological Status and Outlook System (HydroSOS)

THE WORLD METEOROLOGICAL CONGRESS,

**Recalling** the need to start operationalizing the global WMO Hydrological Status and Outlook System (HydroSOS) through regional implementation plans led by the regional associations based on the recommendations on the way forward contained in [Annex 3](https://library.wmo.int/doc_num.php?explnum_id=11113#page=177) to [Resolution 5 (Cg‑Ext(2021)](https://library.wmo.int/doc_num.php?explnum_id=11113#page=155)) – Advanced implementation of elements of the Plan of Action for Hydrology,

**Further recalling** the needs expressed by Members to provide a quantitative assessment of available water resources at a global scale on a regular basis, indicated as one of the major outputs of the Plan of Action of Hydrology ([Resolution 4 (Cg-Ext(2021)](https://library.wmo.int/doc_num.php?explnum_id=11113#page=36)) – WMO Vision and Strategy for Hydrology and its associated Plan of Action) and as one of the major focuses in 2020-2023 under objective 1.3 of the WMO Strategic Plan 2020-2023 ([Resolution 1 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827/#page=14) – WMO Strategic Plan),

**Having considered** the prominent role of the HydroSOS in achieving the outputs of the WMO Plan of Action for Hydrology, in particular in relation to the Long Term Ambition for Hydrology “We have a thorough knowledge of the water resources of our world” as per output G.1 of the WMO Vision and Strategy for Hydrology and its associated Plan of Action ([Resolution 4 (Cg‑Ext(2021)](https://library.wmo.int/doc_num.php?explnum_id=11113#page=36))) and having noted the indirect support of HydroSOS in achieving the other Long Term Ambitions,

**Welcomes**:

(1) The establishment by the Hydrological Coordination Panel (HCP) at its third session ([Decision 8, HCP-3](https://wmoomm.sharepoint.com/sites/wmocpdb/eve_activityarea/Forms/AllItems.aspx?id=%2Fsites%2Fwmocpdb%2Feve%5Factivityarea%2FHydrology%20and%20Water%20Resources%20Programme%20%28HWRP%29%5F1a994a92%2D1373%2De911%2Da965%2D000d3a396ff4%2FHCP%2FHCP%2D3%2FHCP%2D3%20%2D%20Final%20Report%2Epdf&parent=%2Fsites%2Fwmocpdb%2Feve%5Factivityarea%2FHydrology%20and%20Water%20Resources%20Programme%20%28HWRP%29%5F1a994a92%2D1373%2De911%2Da965%2D000d3a396ff4%2FHCP%2FHCP%2D3&p=true&ga=1)) of the “Coordination and Support”, “Implementation” and “Technical Development” Teams, and the continuous support and advice by HCP on the integrated delivery of HydroSOS, ensuring the coordination of the technical commissions, the Research Board and the regional associations;

(2) The pilot version of the [State of Global Water Resources report 2021](https://library.wmo.int/index.php?lvl=notice_display&id=22168%22%20/l%20%22.ZC7SBXZBw2y);

(3) The establishment of the Steering committee to oversee and support the production of the State of Global Water Resources report, with the main purpose to increase WMO operational hydrology activities visibility for policy makers at national and regional level, while demonstrating the ability of Members and the large-scale hydrological expert community to join forces and to develop a trusted product based on the best available data and information;

**Takes note** of the report on the progress of regional HydroSOS implementation contained in the report of the third session of the Hydrological Assembly (HA-3), contained in Cg‑19/INF 2.6;

**Further takes note** of the needs expressed by Members to implement HydroSOS and of the Hydrological Assembly recommendations contained in Cg-19/INF 2.6 on the proposed HydroSOS products and the regional HydroSOS implementation plans;

**Endorses** the HydroSOS regional implementation plans contained in the annex to Cg‑19/INF. 2.6;

**Requests** the Regional Associations to present progress on the implementation of HydroSOS at future sessions of Congress so that the structure and viability of their ongoing implementation plans *[Republic of Korea, New Zealand]* can be reviewed;

**Requests** INFCOM to strengthen its activities related to HydroSOS and consider the infrastructure requirements for implementation of HydroSOS at national, basin, regional and global levels based on the initial product specifications developed by the HydroSOS Technical Team;

**Requests** SERCOM to keep supporting HydroSOS implementation to the practical *[Republic of Korea]* outlook components at different spatial and temporal scales;

**Requests** the Secretary-General to enhance the Secretariat support towards the implementation of HydroSOS;

**Further requests** the Secretary-General to work with relevant partners to synergize efforts and secure funding to resource the implementation of HydroSOS; and

**Invites** Members to contribute to the implementation of regional HydroSOS plans.

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