

# Executive Council

Abridged Final Report of the Seventy-second Session

Videoconference

28 September–2 October 2020



WORLD  
METEOROLOGICAL  
ORGANIZATION



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This report contains the text as adopted by Plenary and has been issued without formal editing. Acronyms used in this report may be found in METEOTERM, the WMO terminology database, at <https://public.wmo.int/en/meteoterm>.

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**BACKGROUND INFORMATION SUPPORTING THE WORK OF THE SESSION (PART II TO  
THE PRESENT REPORT)**

## GENERAL SUMMARY OF THE WORK OF THE SESSION

1. The WMO President, Professor G. Adrian, opened the seventy-second session of the Council on 28 September 2020 at 1100 UTC by videoconference. The President welcomed the Council and other participants to this first online session, highlighting the difficult conditions under which the Organization has been operating due to the COVID-19 pandemic and at the same time its ability to react to the emergency and continue its activities through virtual means. The Secretary-General, Professor P. Taalas also welcomed the Council and underlined the progress achieved by the Organization and the support provided by the Secretariat since the last session of the Council despite the impacts of the COVID-19 pandemic. He drew the attention of the Council to the need for Members to pay assessed contributions as established to avoid further disruption of the activities and of the Secretariat itself.
  2. The agenda adopted by the Council is provided in [Appendix 1](#).
  3. The session adopted 18 resolutions given in [Appendix 2](#) and 16 decisions given in [Appendix 3](#).
  4. The list of participants is given in [Appendix 4](#). The ratio of female to male participants was 134:238.
  5. Subject to the evolution of the COVID-19 pandemic, and with a view to maintaining as much as possible the practice of face-to-face meetings, the Council agreed that the seventy-third session (EC-73) would be held at the WMO headquarters from 19 to 21 April 2021 (or from 19 to 23 April if by videoconference) and that the extraordinary session of Congress would be held from 31 May to 4 June 2021, followed by the seventy-fourth session of the Council (EC-74) from 7 to 9 June 2021. The Council also agreed that the session of FINAC would be held from 5 to 6 June 2021.
  6. The Council further tentatively scheduled the seventy-fifth session to be held at the WMO headquarters from 20 to 24 June 2022.
  7. The seventy-second session of the Executive Council closed at 1515 UTC on Friday, 2 October 2020.
-

## **APPENDIX 1. AGENDA**

### **1. Agenda and organizational matters**

- 1.1 Opening of the session
- 1.2 Approval of the agenda
- 1.3 Establishment of committees
- 1.4 Programme of work and arrangements for the session

### **2. Reports**

- 2.1 Report by the President of the Organization
- 2.2 Report by the Secretary-General
- 2.3 Reports by the presidents of regional associations
- 2.4 Reports by the presidents of technical commissions and the Chair of the Research Board
- 2.5 Other reports

### **3. Preparation of the extraordinary session of Congress in 2021**

- 3.1 Constituent body reform Transition Plan and Communication Strategy
- 3.2 Coherence and consistency between the strategic, programmatic and financial frameworks
- 3.3 Comprehensive review of the WMO regional concept and approaches
- 3.4 Operational hydrology in addressing global water challenges
- 3.5 Data policy

### **4. Implementation of Congress decisions: technical matters**

- 4.1 Long-term goal 1: services for societal needs
- 4.2 Long-term goal 2: Earth system observations and predictions
- 4.3 Long-term goal 3: targeted research
- 4.4 Long-term goal 4: capacity development

### **5. General, legal, policy and regulatory matters**

- 5.1 International Meteorological Organization (IMO) Prize and other awards



- 5.2 Public-private engagement
  - 5.3 Constitutional and regulatory matters
  - 5.4 Designation of acting member(s) of the Executive Council
  - 5.5 Review of subsidiary bodies and membership of bodies reporting to the Executive Council
  - 6. Financial and administrative matters**
  - 6.1 Financial matters
  - 6.2 Plan for funding liability for After-Service Health Insurance (ASHI)
  - 6.3 Staff matters
  - 7. Oversight**
  - 8. Review of previous resolutions**
  - 9. Date and place of the next sessions of the Executive Council**
  - 10. Closure of the session**
-

## **APPENDIX 2. RESOLUTIONS ADOPTED BY THE SESSION**

### **Resolution 1 (EC-72)**

#### **EFFECTIVE COORDINATION BETWEEN REGIONAL ASSOCIATIONS, TECHNICAL COMMISSIONS AND THE RESEARCH BOARD**

THE EXECUTIVE COUNCIL,

**Recalling:**

- (1) Resolution 6 (Cg-18) – WMO Regional Associations,
- (2) Resolution 8 (Cg-18) – Research Board,
- (3) Resolution 20 (Cg-18) – WMO contributions to the provision of climate information and services in support of policy and decision-making,
- (4) Resolution 24 (Cg-18) – Vision, strategy and organizational arrangements for hydrology and water resources in WMO,
- (5) Resolution 7 (EC-71) – Capacity Development Panel,

**Noting** the emerging needs and priorities from the WMO regional associations to fulfil the long-term goals and strategic objectives of the Organization,

**Recognizing** the need to improve the working mechanisms, and better integrate the work of the regional associations, the technical commissions, the Research Board and other bodies of the Organization to ensure the complementarity of their roles for more coherent and effective contributions to the WMO long-term goals and strategic objectives,

**Recognizing further** the need for the workplans of the technical commissions and the Research Board to be informed by the needs and priorities of the WMO regional associations and to benefit from the expertise of the WMO regional associations in order to deliver guidance and services that are of relevance to Members and partners,

**Considering** that the Climate Coordination Panel, the Hydrological Coordination Panel, and the Capacity Development Panel represent vehicles for regional associations to input their priorities and needs across both the commissions and the Research Board in order to ensure that these entities are supporting systematically and seamlessly the full value chain of systems and services to support members,

**Considering further** the importance of integrating science into WMO activities and promoting activities to fill the gap between research and operations,

**Mindful that** the efforts of WMO to strengthen its hydrological profile will require working mechanisms that enhance the participation and the sense of commitment of the hydrological community to WMO operational hydrology activities,

**Having examined** the concept of regional association engagement recommended by the first session of the Technical Coordination Committee,

**Having considered** the favourable recommendation by the first session of the Policy Advisory Committee,

**Decides:**

- (1) That technical commissions and the Research Board, with the support of the Secretariat, should consult and share their workplans, before their approval, with the regional associations to ensure that their workplans are aligned with the needs and priorities of the regional associations and to ensure that the requirements for implementation are considered in regional planning;
- (2) That regional associations, at their sessions, should identify areas for which support from technical commissions and the Research Board is required and that these areas should be communicated, with the support of the Secretariat, to the concerned commissions and the Research Board;
- (3) That regional associations, technical commissions and the Research Board shall invite the presidents and the chair of each body to their respective sessions to improve relationships, interactions and working mechanisms;
- (4) That regional associations, technical commissions and the Research Board shall facilitate coordination during the intersessional period by establishing consultative mechanisms involving the management groups of these bodies for technical and operational matters;
- (5) That regional associations, technical commissions and the Research Board shall have at their sessions a standing agenda item on improving working mechanisms and coordination;
- (6) That regional associations, technical commissions, the Research Board shall invite the Chair of the Hydrological Coordination Panel to their sessions and ensure the participation of hydrological experts, including hydrological advisors, in their activities.

**Requests** the presidents of the technical commissions, the Research Board and regional associations:

- (1) To evaluate the effectiveness of the interaction and relationship between these bodies at their sessions and inform the Executive Council as needed;
- (2) To ensure appropriate engagement of national hydrological services, regional hydrological advisors and hydrological advisors in their bodies' activities;
- (3) To ensure the active participation of regional representatives, including representatives from regional centres, in the subsidiary bodies of the technical commissions and Research Board activities;

**Requests** the Secretary-General to provide the necessary resources, to both the regional and technical programmes, to ensure that the presidents of the regional associations are able to effectively pursue this new approach;

**Urges** the presidents of technical commissions, the Chair of the Research Board, the presidents of regional associations and regional hydrological advisors to consider participating in the sessions of each body, and whenever physical participation is not possible, to consider remote participation.

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## **Resolution 2 (EC-72)**

### **ACTIVITIES AND WORKING MECHANISMS OF THE REGIONAL ASSOCIATIONS**

THE EXECUTIVE COUNCIL,

**Recalling:**

- (1) Resolution 6 (Cg-18) – WMO Regional Associations,
- (2) Resolution 7 (Cg-18) – Establishment of WMO technical commissions, for the eighteenth financial period,
- (3) Resolution 8 (Cg-18) - Research Board,
- (4) Resolution 74 (Cg-18) – Closing the capacity gap: scaling up effective partnerships for investments in sustainable and cost-efficient infrastructure and service delivery,
- (5) Resolution 4 (EC-71) – Climate Coordination Panel,
- (6) Resolution 11 (EC-71) – Rules of procedure for the constituent bodies,

**Noting** the need for regional associations to consider the implications of the WMO reform for their structures and working mechanisms and to take the necessary actions to influence and seek to align themselves with all the relevant constituent bodies and structures in supporting the strategic goals of the WMO Strategic Plan,

**Noting also:**

- (1) That Resolution 11 (Cg-18) – WMO reform – next phase, indicates that the World Meteorological Congress agrees that WMO reform efforts should continue during the eighteenth financial period and should focus on a comprehensive review of the WMO regional concept and approaches in order to strengthen the role and enhance the effectiveness of the regional associations, with the support of the WMO Regional Offices,
- (2) The need to establish harmonized structures for the functioning of the regional associations in alignment with the new constituent bodies of the Organization, with due consideration of the characteristics and priorities of the regions and available financial and human resources, to promote common approaches and better cross-regional cooperation,

**Noting further** the pertinence of reviewing the format and function of regional associations' sessions in order to have a stronger regional policy and political footprint by engaging with the UN Development System at the regional level, UN Resident Coordinators, regional economic and political organs, regional development partners and donors in high-level events associated with the regional associations' sessions and by addressing specific themes relevant to the regions with a strong linkage to the WMO priorities articulated in the WMO Strategic Plan for the purpose of increasing the visibility of WMO, the regional associations and NMHSs and their work in contributing to major global agendas and other specific regional relevant agendas,

**Noting with satisfaction** the efforts of WMO towards the provision of services in support of high-level, climate-related United Nations policy processes and joint action through WMO's annual statements on the state of the global climate and the State of Climate Services Report,

**Taking note** of the increasing demand for the production of specific reports on the state of the climate at the regional scale, providing the latest updates on climate variability and change and their impacts,

**Mindful** of the fact that climate and environmental change and the increase of weather, water and climate extremes has become an overarching global concern, manifested by high-level political engagement and high volumes of investments through dedicated financing mechanisms,

**Having examined** the proposals put forward by Resolution 1 (EC-72) for improving the working mechanisms and better integrating the work of the regional associations, the technical commissions, the Research Board and other bodies of the Organization to ensure the complementarity of their roles for more coherent and effective contributions to the WMO long-term goals and strategic objectives,

Having considered the recommendations of the meetings of the Technical Coordination Committee and the Policy Advisory Committee,

**Decides:**

- (1) To establish an EC task force to lead the comprehensive review of the WMO regional concept and approaches according to the decision of Resolution 11 (Cg-18) and to submit recommendations to EC-73 and Extraordinary Congress (2021) for discussions, guidance and decisions;
- (2) That the task force will be led by the Third Vice-President of WMO and composed of all presidents and vice-presidents of regional associations and interested EC members and will be conducted with broad consultations with WMO global and regional partners, taking into consideration the differences (diversity) of WMO regions. Representatives of the technical commissions and the Research Board will be invited to this task force to facilitate links with these bodies;
- (3) To establish harmonized structures for the functioning of the regional associations with due consideration of regional characteristics and priorities of the regions and available financial and human resources in alignment with the new constituent bodies of the Organization by using similar taxonomy or designations of the subsidiary bodies of the technical commissions that will exist during the entire intersessional period to promote common approaches and better cross-regional cooperation;

**Invites** regional associations to consider the following guidance in the organization of their sessions as appropriate:

- (1) Engage regional economic and political organs and participate in their regional high-level events to promote a stronger regional policy and political footprint or support the organization of high-level events associated with the regional associations' sessions, taking into consideration sub-regional working mechanisms and practices addressing specific themes chosen by the regions with a strong linkage with the WMO strategic plan as a means of having a stronger regional policy and political footprint by proactively engaging regional economic and political organs, regional bodies, UN system organizations and WMO global partners and regional development partners to increase the visibility and regional collaborations of WMO, the regional associations and NMHSs and their work in contributing to major global and regional specific agendas;
- (2) Support the publication of the regional state of climate report and the Hydromet Alliance Gap report as flagship reports of WMO, with the appropriate involvement and leadership of the regional associations, and launch these publications as part of the high-level events associated with the regional associations' sessions;

**Requests** the presidents of the regional associations, with the support of the regional offices:

- (1) To make great efforts to strengthen collaboration among regional partners and regional associations, with the appropriate engagement of regional and national hydrological advisors and national hydrological services, and between the regional associations and the Secretariat through regular meetings (formal and informal) to speed up regional associations' reform efforts;
- (2) To be actively engaged in the planning and organization of the high-level events associated with the regional associations' sessions if identified by the Regional Association Management Group as being a priority activity for the delivery of their regional needs;
- (3) To coordinate with Members in the regional associations contributions from NMHSs and stakeholders in the impact areas of the state of regional climate and Alliance for Hydromet Gap reports, including water resources assessments, if identified by the Regional Association Management Group as being a priority activity for the delivery of their regional needs;
- (4) To regularly meet online, formally and informally, with each other and with the President and Secretary-General to develop and communicate harmonized positions, priorities and work programmes and to steer and monitor Secretariat activities and performance to support and strengthen the regional associations;

**Further requests** the presidents of regional associations, supported by their respective management groups, to facilitate the adoption of harmonized taxonomy in their efforts to establish their structures in a coherent and coordinated manner with similar types of subsidiary bodies in other associations;

**Invites** Members to support the new approach to organizing the regional associations' sessions, facilitate the participation of high-level government officials and partners in the high-level segments and support the preparation of the sessions;

**Calls upon** partner organizations to be proactive and actively contribute to the identification of themes of relevance for the high-level events associated with the regional associations' sessions, support the organization and participate in the high-level events;

**Requests** the Secretary-General:

- (1) To provide the necessary resources, taking into consideration sub-regional structures and working mechanisms, to ensure that the regional associations are able to effectively pursue this new approach;
- (2) To take advantage of the Technical Coordination Committee and the Policy Advisory Committee as collaboration and coordination structures to ensure that the regional associations' needs and priorities are effectively considered in WMO strategies, policies, procedures, regulations and partnerships;
- (3) To increase the efficiency and effectiveness of the Secretariat's support to the regional associations, their presidents and their management groups by creating clear lines of accountability;
- (4) To organize regular meetings involving the presidents of regional associations and the WMO president to prioritize the activities of the Secretariat and regional offices in support of strengthening the regional associations;

- (5) To make the necessary amendments in the *Rules of Procedure for Regional Associations* (WMO-No. 1241) and *Rules of Procedure for Technical Commissions* (WMO-No. 1240);
- (6) To bring the present resolution to the attention of all concerned.

See EC-72/INF. 3.3(2) and EC-72/INF. 3.3(3) for more information.

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### **Resolution 3 (EC-72)**

#### **WMO FLOOD FORECASTING INITIATIVE ADVISORY GROUP (WMO FFI-AG)**

THE EXECUTIVE COUNCIL,

**Recalling** Resolution 15 (Cg-XVI) – Establishment of an Advisory Group for the WMO Flood Forecasting Initiative, which defined the scope of the WMO Flood Forecasting Initiative (WMO FFI) to include all the hydrological forecasting activities of the Organization and established the WMO Flood Forecasting Initiative Advisory Group (WMO FFI-AG), and Resolution 25 (Cg-18) – Major hydrological initiatives, which confirmed WMO FFI as one of the major WMO hydrological initiatives in view of its relevance to the fulfilment of the long-term ambitions of the operational hydrological community,

**Noting** that the objective of the WMO FFI is to “improve the capacity of meteorological and hydrological services to jointly deliver timely and more accurate products and services required in flood forecasting and warning and in collaborating with disaster managers active in flood emergency preparedness and response”,

**Noting also** that the premises to establish WMO FFI-AG, namely the need of an overarching advisory group to provide guidance and advice on the hydrological forecasting elements of a number of flood-related initiatives in progress under WMO and to provide broad-based support to improve collaboration between the meteorological and hydrological communities for improved flood forecasting-related practices, are still valid, but that its Terms of Reference need to be updated to take into account the WMO reform process and the implementation of a more integrated approach to the development of Multi-Hazard Early Warning Systems (MHEWS),

**Noting further** that WMO FFI-AG has proven to be a low-cost effective mechanism at the root of important developments such as the concept of an End-to-end Early Warning System (E2E EWS) approach to flood forecasting and the joint independent reviews of the Flash Flood Guidance System (FFGS), Coastal Inundation Forecasting Demonstration Project (CIFDP) and Severe Weather Forecasting Demonstration Project (SWFDP), which eventually led to Resolution 15 (Cg-18) – Strengthening multi-hazard early warning services in areas prone to all flooding types and severe weather,

**Having considered** the recommendation of the Technical Coordination Committee contained in document EC-72/INF. 2.5(2),

**Decides** to adopt the revised Terms of Reference and Composition of WMO FFI-AG as provided in the annex to the present resolution;

**Requests** the President of the Commission for Weather, Climate, Water and Related Environmental Services and Applications (Services Commission), in his capacity as Chair of FFI-AG, to report periodically to the Executive Council on the progress of the activities of WMO FFI-AG.

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### **Annex to Resolution 3 (EC-72)**

#### **FLOOD FORECASTING INITIATIVE ADVISORY GROUP TERMS OF REFERENCE AND COMPOSITION**

##### **Terms of Reference**

The WMO Flood Forecasting Initiative Advisory Group (WMO FFI-AG) shall:

1. Consider and advise on the concept, objectives, expected benefits/costs, strategy, action plan and future development of the WMO FFI, making proposals where necessary for any remedial actions;
2. Review and assess the status of the WMO FFI and progress towards its objectives, making proposals where necessary for any remedial actions;
3. Review and assess specific WMO FFI projects upon request;
4. Advise on standards (including, but not limited to, methodologies, techniques, technologies, and so forth) for the robust and sustainable implementation of the WMO FFI;
5. Advise on measures to strengthen the integration of WMO flood forecasting activities within the development of Multi-Hazard Early Warning System (MHEWS) initiatives and include flood forecasting systems in the GDPFS;
6. Review the relationship of the WMO FFI with other relevant international programmes, particularly from the point of view of coordination and avoidance of overlap, and propose any necessary actions (including establishing coordination mechanisms with other bodies);
7. Identify and evaluate constraints on, and potential risks to, the future implementation and sustainability of the WMO FFI, and propose strategies to minimize those risks. Risks include, inter alia, those of a financial, technical, operational and institutional/political nature;
8. Consider and propose plans for effective advocacy of the WMO FFI (as appropriate), and ways and means to assure its future sustainability and appropriate expansion;
9. Promote awareness about raising the social and economic benefits and value of flood forecasting systems, including a community development approach;
10. Review and advise on its terms of reference and composition.



### **Composition**

The WMO FFI Advisory Group shall be composed of:

1. The President of Services Commission (Chair);
2. One representative (the Chair or an expert designated by her/him) with flood forecasting experience from Standing Committee on Hydrological Services (SC-HYD), Standing Committee on Disaster Risk Reduction and Public Services (SC-DRR) and other Technical Commissions' Standing Committees and Study Groups as required;
3. One representative from the Research Board and one representative from the Hydrological Coordination Panel;

### **Observers (invited on an ad hoc basis)**

1. Representatives from WMO FFI operational projects;
2. Regional Hydrological Advisers and/or other relevant representatives of Regional Associations with flood forecasting experience;
3. One representative from each financial partner involved in or looking to be contributing to the WMO FFI.

The Head, Hydrology and Water Resources Division of the WMO Secretariat shall act as secretary to the WMO FFI-AG.

### **Modalities of work**

FFI-AG would normally meet face-to-face once every two/three years at the request of the Chair, at the WMO headquarters in Geneva, Switzerland. Preparatory work will be conducted by tele/video conference and correspondence including email exchanges and other appropriate online interactions, in order to optimize the duration of the face-to-face meeting.

## **Resolution 4 (EC-72)**

### **STRENGTHENING MARINE SERVICES**

THE EXECUTIVE COUNCIL,

#### **Recalling:**

- (1) Resolution 29 (Cg-18) - Strengthening marine and coastal services,
- (2) Resolution 73 (Cg-18) - Strengthening the capacity of Members in service delivery,
- (3) Resolution 30 (Cg-18) – Exploring cost options for marine services in the future,
- (4) *Technical Regulations (WMO-No. 49), Volume I, Part IV - Meteorological, Hydrological and Climatological Services,*

**Noting:**

- (1) That the fifteenth session of the Joint WMO-Intergovernmental Oceanographic Commission (IOC) Technical Commission for Oceanography and Marine Meteorology (JCOMM) Management Committee (2018) endorsed the recommendation for WMO to propose an international symposium on extreme maritime weather to initiate, for the first time, a dialogue between governments, shipping companies and other interested stakeholders on the critical issue of ships still transiting into hazardous conditions despite the availability of marine weather forecasts and to determine how the meteorological community can minimize the risks posed by extreme weather to ships at sea,
- (2) The recognized gaps in marine service delivery, as shown in the WMO Survey of National Marine and Coastal Services (2018) (see Resolution 29 (Cg-18)/INF. 8.2) and the need for implementation of marine weather competency standards in line with the *Compendium of WMO Competency Frameworks* (WMO-No. 1209),

**Acknowledging:**

- (1) The first joint 'WMO-IMO International Symposium on Extreme Maritime Weather: Towards Safety of Life at Sea and a Sustainable Blue Economy' (hereafter referred to as the 'WMO-IMO Symposium'), held at the IMO Headquarters (London) in October 2019 and endorsed as a contributing event to the United Nations Decade of Ocean Science for Sustainable Development, and the key recommendations from the WMO-IMO Symposium including:
  - (a) Better marine weather forecasts should be provided to inform decisions to keep people and property safe at sea and in ports and harbours,
  - (b) Efforts should be made to close the gap in understanding between the maritime industry and the metocean community, especially through educational trainings for both mariners and metocean forecasters that would increase awareness between mariners and forecasters of each community's needs and operational constraints,
  - (c) Efforts should be made to tighten connections in the value chain between the collection of metocean data, metocean data assimilation, marine weather forecasting, and the dissemination of marine forecasts and services to users and stakeholders,
  - (d) The research community should be looked to in order to inform operational and policy and decision-making, which can in turn inform subsequent research priorities,
  - (e) Requests should be made for more ships to participate in the WMO-IOC Voluntary Observing Ships (VOS) Scheme,
  - (f) Marine services should be encouraged to communicate impact-based weather forecasts as well as ancillary support in decision-making,
  - (g) A second WMO-IMO Symposium should be held to bring together the broad set of stakeholders to continue to address the recommendations outlined during the first WMO-IMO Symposium.
- (2) The successful development of the first Marine Services Capacity Development course 'Enhancing Marine Weather Forecasting Services', intended to be rolled out over a five-year period across more than 70% of Members (see Decision 13 (EC-72) – Developing and sustaining core competencies and expertise), as well as the successful commencement of the course in March 2020, for the Spanish speaking Members in

Regional Association III and Regional Association IV, coordinated by the WMO Education and Training Office and Marine Services Division, with in-kind support from the State Meteorological Agency of Spain (*Agencia Estatal de Meteorología (AEMET)*),

(3) The resources/requirements for addressing points (1) and (2) above,

**Having examined** the outcomes of the first WMO-IMO International Symposium "Extreme Maritime Weather: Towards Safety of Life at Sea and a Sustainable Blue Economy", held at IMO Headquarters in London (UK) from 23 to 25 October 2019,

**Having considered** the recommendation of the Technical Coordination Committee contained in document EC-72/INF. 2.5(2),

**Decides:**

- (1) To commence addressing the key recommendations from the WMO-IMO Symposium via the Standing Committee for Marine Meteorology and Oceanographic Services (SC-MMO) to prioritize these recommended actions in partnership with IMO, IOC and other relevant stakeholders as soon as possible;
- (2) To work closely with NMHSs, WMO Regional Training Centres, appropriate nautical training institutes, and other relevant bodies, in collaboration with SC-MMO and the WMO Capacity Development Panel, to assist with the requested training and capacity development for metocean professionals (including forecasters) to better deliver marine weather forecasts, products and services, and for stakeholders to better understand and use the information from such forecasts, products and services;
- (3) In consultation with IMO and in view of the recommendations of SC-MMO following (1) above, to consider holding a follow-on WMO-IMO Symposium as soon as is practical, to build on the important dialogues between the metocean and maritime communities, and to continue to progress on the recommendations outlined in the first Symposium Report;

**Requests:**

- (1) The Commission for Weather, Climate, Water and Related Environmental Services and Applications (Services Commission) to prioritize and initiate the recommended actions;
- (2) Regional associations, the technical commissions, the Research Board, the Capacity Development Panel and the Joint WMO-IOC Collaborative Board:
  - (a) To contribute advice or expertise, when requested, on matters discussed at the Symposium, when relevant to their mandates, including providing comments and recommendations on any requested information;
  - (b) To ensure effective coordination of information to meet needs at the regional level and appropriate technical responses by the Organization;
  - (c) To contribute to the technical expertise and advice (guided by SC-MMO), and regional assistance required to facilitate and support closing the gap in stakeholder awareness and training, which includes the provision of technical experts to assist the WMO course 'Enhancing Marine Weather Forecasting Services', thereby enhancing marine weather competencies for Members;

**Invites Members:**

- (1) To increase their collaboration between relevant maritime safety agencies in their countries, beyond the traditional meteorological services, for example, port authorities,

maritime safety agencies, and to become more familiar with the needs of their customers, such as shipping companies and private industry (for example, oil and gas);

- (2) To contribute to closing the gap through their relevant staff participating in training initiatives, including, when relevant, the WMO "Enhancing Marine Weather Forecasting Services" course and liaison with training partners and maritime training institutions such as the Nautical Institute;
- (3) To report on their marine services activities carried out within their institutions and, when possible, regarding WMO marine weather competency frameworks;
- (4) To encourage members to operate shipboard observation programmes under the auspices of the Global Ocean Observing System (GOOS) Ship Observations Team (for example, the Voluntary Observing Ship (VOS) scheme, the Ship of Opportunity Programme (SOOP), and/or the Automated Shipboard Aerological Programme (ASAP), as well as to encourage networks in known shipping communities to join such programmes with the aim of increasing observations taken at sea, ultimately leading to improved marine weather forecasts, products and services;
- (5) To consider hosting the next WMO-IMO Symposium, potentially in 2022;

**Requests** the Secretary-General:

- (1) To continue to liaison with IMO to strengthen the partnership in marine meteorology and maritime safety provisions under the Safety of Life at Sea Convention and the Global Maritime Distress and Safety System (GMDSS);
- (2) To provide the necessary support for the priority activities recommended from the WMO-IMO Symposium.

## **Resolution 5 (EC-72)**

### **AMENDMENTS TO THE *TECHNICAL REGULATIONS (WMO-NO. 49)*, VOLUME II – METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION**

THE EXECUTIVE COUNCIL,

**Noting** that Amendment 79 to the International Standards and Recommended Practices, Meteorological Service for International Air Navigation (Annex 3 to the Convention on International Civil Aviation) was adopted by the Council of the International Civil Aviation Organization (ICAO) on 9 March 2020, with an effective date of 20 July 2020 and an applicability date of 5 November 2020, except for those provisions that contain an embedded applicability date of 4 November 2021,

**Acknowledging** established procedures that ensure the necessary alignment of *Technical Regulations (WMO-No. 49)*, Volume II - Meteorological Service for International Air Navigation with ICAO Annex 3 and that Amendment 79 was fully coordinated with WMO,

**Mindful** that, through Resolution 27 (Cg-18) - Report of the sixteenth session of the Commission for Aeronautical Meteorology, Congress endorsed Recommendation 5 (CAeM-16) - World Meteorological Organization regulatory and guidance material addressing the provision of meteorological service for international air navigation, requesting the Secretary-General, in

coordination with ICAO, to undertake steps necessary to discontinue *Technical Regulations* (WMO-No. 49), Volume II, while ensuring that any material of continuing relevance is reviewed before being transferred to other (new or existing) regulatory or guidance material of WMO or ICAO,

**Appreciating** that work in response to Resolution 27 (Cg-18) remains ongoing, with an anticipated discontinuation of *Technical Regulations* (WMO-No. 49), Volume II in the 2022 to 2024 time frame, to be coordinated through the Services Commission (SERCOM),

**Having considered** the recommendation of the Technical Coordination Committee contained in document EC-72/INF. 2.5(2),

**Approves** the amendment to *Technical Regulations* (WMO-No. 49), Volume II to ensure its necessary alignment with Amendment 79 to Annex 3 of the Convention on International Civil Aviation as provided in the annex to the present resolution;

**Requests** the Secretary-General:

- (1) To arrange for the expeditious publication of the amended *Technical Regulations* (WMO-No. 49), Volume II; and
- (2) To review, assisted by the president of SERCOM, and, as necessary, to publish updates to, related WMO guidance material to ensure consistency with the amended *Technical Regulations* (WMO-No. 49), Volume II,

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### **Annex to Resolution 5 (EC-72)**

#### **AMENDMENTS TO THE *TECHNICAL REGULATIONS* (WMO-NO. 49), VOLUME II – METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION**

This amendment to *Technical Regulations* (WMO-No. 49), Volume II - Meteorological Service for International Air Navigation is to align with Amendment 79 to Annex 3 to the ICAO Convention on International Civil Aviation which was adopted by the Council of ICAO on 9 March 2020.

The following text, taken from Amendment 79 to ICAO Annex 3, serves as the basis of the amendment to *Technical Regulations* (WMO-No. 49), Volume II.

Amendment to *Technical Regulations* (WMO-No. 49), Volume II - Meteorological Service for International Air Navigation  
(<https://community.wmo.int/activity-areas/aviation/resources/amendment-79>)

After approval by the Executive Council, *Technical Regulations* (WMO-No. 49), Volume II, incorporating Amendment 79 will be published by WMO as a 2020 update to the 2018 edition.

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## **Resolution 6 (EC-72)**

### **TRIAL PHASE OF THE INTERNATIONAL EXCHANGE OF DAILY CLIMATE DATA**

THE EXECUTIVE COUNCIL,

**Recalling:**

- (1) Resolution 22 (Cg-18) – Manual on High-quality Global Data Management Framework for Climate,
- (2) Resolution 5 (EC-70) – Recommendations of the Commission for Climatology at its seventeenth session, Recommendation 5 (CCI-17) – Trial phase for the international exchange of daily climate observations,

**Recognizing** that the modernization of climate data is a fundamental asset for enhancing WMO and NMHS roles in providing high-quality, well-managed and accessible climate data to inform climate action and disaster risk reduction policy and decisions and for enhancing underpinning climate services,

**Highlighting** the need for countries to have access to and use state-of-the-art Climate Data Management Systems (CDMS) that enable efficient and secure climate data management, and that the completion of the Open CDMS project to deliver a reference open-source CDMS for climate and hydrological data management is a critical element in this regard,

**Noting** that real-time data exchanged via the Global Telecommunication System (GTS) for nowcasting and weather forecasting purposes (Surface Synoptic Observations (SYNOP), METAR messages, and so forth) are not optimally suitable for climate research and applications due to data quality limitations and methodological differences,

**Acknowledging** the need for the operational exchange of daily climate data in addition to the operational monthly exchange of climate data (CLIMAT message) in order to better capture the variability of extremes,

**Taking note** of the background, purpose and outcome of the one-year trial phase for the international exchange of daily climate data (DAYCLI message) (See EC-72/INF. 4.2(1) for more information),

**Having considered** the recommendation of the Technical Coordination Committee contained in document EC-72/INF. 2.5(2),

**Endorses** the extension of the trial phase of the international exchange via the GTS of daily climate data (DAYCLI message) and its transition into a pre-operational phase within 12 months;

**Requests** the Infrastructure Commission, in close collaboration with the Services Commission:

- (1) To oversee the preparation and coordination of the pre-operational phase of the international exchange of daily climate data;
- (2) To report to the Executive Council on the progress of the pre-operational phase with the aim of its full operational implementation at the appropriate point in time;

**Urges** Members to participate in the trial phase for the international exchange of daily climate data for a successful transition to operational implementation.

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## Resolution 7 (EC-72)

### UPGRADED RECOGNITION MECHANISM FOR LONG-TERM CLIMATE OBSERVING STATIONS

THE EXECUTIVE COUNCIL,

**Recalling:**

- (1) Resolution 35 (Cg-17) – WMO recognition of long-term observing stations,
- (2) Resolution 23 (Cg-18) – Recognition of long-term observing stations,
- (3) Decision 40 (EC-68) – WMO mechanism for the recognition of long-term observing stations,
- (4) Decision 8 (EC-69) – Recognition of WMO long-term observing stations,
- (5) Resolution 6 (EC-70) – WMO recognition of long-term observing stations,

**Acknowledging** that preserving long-term observing stations, including centennial stations, is a responsibility of Member governments for sustaining irreplaceable climate heritage to serve current and future generations' needs for long-term high-quality climate records,

**Noting:**

- (1) That, in response to two WMO calls for candidate stations, 140 long-term observing stations from 47 countries representing all WMO regional associations have been recognized formally so far,
- (2) That an assessment was carried out by the Advisory Board for the recognition of long-term observing stations for 119 candidate stations nominated by 30 Members in response to the third call for candidate stations in December 2019 and that the Advisory Board recommends endorsing the recognition of 94 centennial observing stations,

**Noting further** ongoing improvements to the recognition mechanism by the Advisory Board to accelerate and strengthen the mechanism including proposals for broadening the mechanism to include marine and hydrological long-term observing stations,

**Highlighting** that one of the key intentions of the mechanism for WMO recognition of long-term observing stations is to promote WMO technical regulations and good practices, and that the value of long-term observing stations for the national and international communities lies in the availability of long-term time-series data, underpinned by well documented station metadata,

**Endorses:**

- (1) The proposal of Advisory Board to recognize 94 centennial observing stations as long-term observing stations as provided in Annex 1 to the present resolution;
- (2) The upgraded recognition criteria as provided in Annex 2 to the present resolution;

**Requests** the Technical Coordination Committee to coordinate a review of the WMO Recognition Mechanism for Long-term Observing Stations under the new WMO governance structure and submit a proposal to EC-73 that highlights the role of the new Technical Commissions in the further development of the mechanism and aims at reflecting the recognition mechanism in WMO's Technical Regulations;

**Requests** the Secretary-General to further promote WMO recognition of long-term observing stations and to issue another call for nomination of candidate stations in 2020;

**Invites** Members to further strengthen their efforts to achieve sustainable high-quality long-term observations, to continue collaborating on the WMO recognition mechanism and to promote it at the highest local, regional and national governmental levels, as appropriate.

### Annex 1 to Resolution 7 (EC-72)

#### WMO RECOGNITION OF LONG-TERM OBSERVING STATIONS

Summary of Advisory Board review  
List of centennial observing stations recommended for recognition (94 stations)

##### RA I

Member	Station	Station Identifier	Start of observations
Burkina Faso	Bobo-Dioulasso	65510	1907
	Ouagadougou Aeroport	65503	1902
Egypt	Helwan	62377	1912
Madagascar	Antsiranana	0-20000-0-67009/FMNA	1901
	Amborovy Mahajanga	0-20000-0-67027/FMNM	1897
	Taolagnaro	0-20000-0-67197/FMSD	1903
Mali	Kayes	61257	1896
	Nioro du Sahel	61230	1899
	Sikasso	61297	1906
	Ségou	61272	1906
Mauritius	Pamplemousses	--	1862
	Labourdonnais	--	1862
	Beau Vallon Cour	--	1865
	Constance	--	1865
	Britannia	--	1869
Nigeria	Calabar	65264	1899
	Lagos Roof	65203	1892
	Minna	65123	1916



Member	Station	Station Identifier	Start of observations
	Sokoto	65010	1916
	Yola	65167	1914
Senegal	Saint Louis	61600	1897
	Dakar	61641	1904
	Diourbel	61666	1912
	Kédougou	61699	1918
	Matam	61630	1918
Sudan	Kassala	730	1900
	El-Dueim	750	1902
Tunisia	Tunis Cartage	60715	1886
	Bizerte	60714	1920
	Jendouba	60725	1901
	Tozeur	60760	1898

## RA II

Member	Station	Station Identifier	Start of observations
China	Beijing	54511	<b>1724</b>
	Wuhu	58334	1880
	Qingdao	54857	1898
	Nanjing	58238	1904
	Qiqihar	50745	1901
India	MC Srinagar	42027	1891
	Port Blair	43333	1866
	Alipore	42807	1877
	Ahmedabad	42647	1893
	Gopalpur	43049	1881
	Puri	43053	1888
	Patna	42492	1867
Kazakhstan <i>Note: Member belongs to RAs II and VI; for ease of file handling listed under RA II only</i>	Atbasar	--	1886
	Irgiz	--	1856
	Kazaly	--	1848
	Turkestan	--	1882
	Zharkent	--	1890

Macao, China	Taipa Grande	45011	1901
Russian Federation <i>Note: Member belongs to RAs II and VI; for ease of file handling listed under RA II only</i>	Ola	25912	1914
	Mezen	22471	1883
	Werkhnejmbatsk	23678	1911
	Taseewo	29379	1901

**RA IV**

Member	Station	WMO number	Start of observations
Canada	Ottawa CDA RCS	0-20000-0-71063	1889
	Victoria Gonzales	0-20000-0-71200	1919
	Nappan Auto	0-20000-0-71311	1890
	Welland-Pelham	0-20000-0-71752	1872
	Creston Campbell Scientific	0-20000-0-71770	1912
United States of America	Downtown Charleston	--	1759

**RA VI**

Member	Station	Station Identifier	Start of observations
Cyprus	Pano Panagia	--	1916
	Saittas	--	1916
	Troodos Square	--	1916
	Platania	--	1916
	Kornos	--	1916
	Panagia Bridge	--	1916
France <i>Note: Member belongs to more than one RA; for ease of file handling listed under RA VI only</i>	Saint-Genis-Laval	69204002	1881
	Sauternes	33504001	1888
	Istres	07647	1920
	Fond-Saint-Denis-Cardet	97208001	1905
	Dunkerque	07010	1917
Hungary	Debrecen	0-20000-0-12882	1853

Member	Station	Station Identifier	Start of observations
	Pecs/Pogany	0-20000-0-12942	1871
	Szeged	0-20000-0-12982	1871
	Szombathely	0-20000-0-12812	1864
Ireland	Phoenix Park	03982	1829
Italy	Osservatorio Cavanis	--	1835
	Aggius	--	1919
	Carloforte Osservatorio	16548	1901
	Montevergine	--	1884
	Piacenza-Collegio Alberoni	--	1802
	Osservatorio Modena	--	1830
	Osservatorio Palermo	--	1791
Norway	Bjornoya (Arctic)	0-20000-0-01028	1920
	Utsira LH	0-20000-0-01403	1867
	Vardo	0-20000-0-01098	1829
	Dombaas	0-20000-0-01233	1864
	Ferder LH	0-20000-0-01482	1885
	Karasjok	0-20000-0-01065	1877
Slovakia	Hurbanovo	0-20000-0-11858	1872
Turkey	Kandilli Observatory	--	1911
United Kingdom	Oxford	--	1772
	Maison St. Louis Observatory - Jersey	03896	1894
Ukraine	Dubno	33296	1885
	Romny	33268	1885

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## Annex 2 to Resolution 7 (EC-72)

### WMO RECOGNITION OF LONG-TERM OBSERVING STATIONS

#### Upgraded recognition criteria

*Note: The Advisory Board for Recognition of Long-term Observing Stations reviewed the performance of the WMO recognition mechanism in November 2019. Various suggestions have been made to improve the mechanism. Those suggestions that help strengthening and/or simplifying the existing criteria and which have been applied already as good practice in previous recognition assessments have been incorporated in the third call for candidate stations already (WMO of 18 December 2019, ref.: 32244/2019/CLW/CLPA/DMA/COS). Other suggestions that imply a modification of the current*

recognition criteria will be tabled at EC-72 for endorsement and will be incorporated in subsequent calls for candidate stations. These modifications, which aim at strengthening the provision of station metadata and observational data, are reflected below (suggested modifications in **bold**). Recognized WMO Centennial Stations will be subject to re-evaluation every ten years according to the then current recognition criteria.

Reference: Final report: Further development of the WMO mechanism for recognizing long-term observing stations, 12-14 November 2019, Hong Kong, China; posted under WMO Recognition Mechanism on <https://public.wmo.int/en/our-mandate/what-we-do/observations/centennial-observing-stations>.

The WMO candidate centennial observing station self-assessment template contains a couple of introductory notes to which the following will be added:

**Station operators shall assign a WIGOS Station Identifier to all nominated stations and populate OSCAR with the minimum station metadata according to criterion 3 below.**

**Mandatory criteria:**

- (1) The observing station was founded at least 100 years ago, observing at least one meteorological element since then, and is in operation as an observing station at the date of nomination;
- (2) Periods of inactivity of the observing station shall not exceed 10 %;
- (3) The minimum historic station metadata for the full duration of station operation shall contain actual or derived geographical coordinates including elevation, known changes of station name and/or station identifier, identified meteorological element(s) and its unit(s) as well as the observing schedule(s);
- (4) Any known observing station relocation or change in the measurement technique have not significantly affected the climatological time-series data;  
*Note: Documented data homogenization for the observing station is considered compliant with criterion 4*
- (5) All historic observational data and metadata have been digitally archived or will be rescued. Members **shall** share their plans for data rescue, if applicable;
- (6) The observing station shall be operated according to WMO observing standards according to the *Manual on the WMO Integrated Global Observing System* (WMO-No. 1160) and the *Guide to Instruments and Methods of Observation* (WMO-No. 8);  
*Note: Explanatory information **shall** be provided for those stations that do not meet current WMO observing standards*
- (7) The current environment of the observing station has been classified or will be classified according to the siting classification defined in the *Guide to Instruments and Methods of Observation* (WMO No. 8). Members **shall** share **(i) the metadata attached to the siting classification in the appropriate WMO metadata repository (currently OSCAR) or (ii) their plans to classify the observing station, if applicable;**
- (8) The observed and measured data shall be subject to routine quality control procedures **according to** current WMO guidelines and practices. The quality control processes as well as its results shall be well documented.  
**Note: A brief description of the routine quality procedures at the observing station shall be included in the References/Remarks column;**

- (9) Members shall do their utmost to maintain nominated stations according to the above recognition criteria;
- (10) Historic observation data and metadata have been made available for scientific research, consistent with Resolution 40 (Cg-XII) - WMO Policy and Practice for the Exchange of Meteorological and Related Data and Products Including Guidelines on Relationships in Commercial Meteorological Activities, and Resolution 60 (Cg-17) - WMO Policy for the International Exchange of Climate Data and Products to Support the Implementation of the Global Framework for Climate Services, or will be made available. Members shall share their plans for data availability, if applicable.

### **Resolution 8 (EC-72)**

#### **COLLABORATION WITH IATA ON THE DEVELOPMENT OF THE AMDAR PROGRAMME (WICAP)**

THE EXECUTIVE COUNCIL,

**Noting** the recommendation of the Technical Coordination Committee contained in documents EC-72/INF. 2.5(2) and EC-72/INF. 4.2(3),

**Recalling** Resolution 39 (Cg-18) – Establishment of collaboration between the International Air Transport Association and WMO on the development and operation of the Aircraft Meteorological Data Relay Programme, which requested the Executive Council, in relation to the establishment of the WMO-International Air Transport Association (IATA) Collaborative Aircraft Meteorological Data Relay (AMDAR) Programme (WICAP):

- (1) To review, finalize, maintain and oversee the undertaking of the WICAP Implementation Plan in accordance with the WICAP Concept of Operations as was summarized in Annex 2 to Resolution 39 (Cg-18),
- (2) To oversee the establishment of the WICAP Governance structure, including the Governing Board, in accordance with the WICAP Concept of Operations,
- (3) To assist regional associations in the establishment of regional AMDAR programmes based on the WICAP Implementation Plan and Concept of Operations,

**Noting** that the that the Working Arrangement, based on the Purpose and Principles endorsed by the Eighteenth World Meteorological Congress (see Cg-18/INF. 6.1(2)) has been drafted and agreed in principle by the two organizations and is expected be formally established by October 2020,

**Noting further:**

- (1) That the original WICAP Implementation Plan that was submitted to Congress within Annex 2 to Resolution 39 (Cg-18) has been updated by the EC Task Team on the IATA-WMO Collaboration on AMDAR (TT-IWCA) in consultation with IATA to document progress made and provide corrected timelines for activities over the coming four-year inter-sessional period of WMO and is provided in EC-72/INF. 4.2(3),
- (2) That a proposed data policy for WICAP has been developed by TT-IWCA following closely the Purpose and Principles of WICAP as endorsed by Congress following Resolution 39

(Cg-18) and ensuring that AMDAR data under WICAP will be available for use by all Members in line with all relevant WMO technical regulations,

- (3) That the WICAP Data Policy is subject to Resolution 40 (Cg-XII) – WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities, that WMO Members have unrestricted access to and use of AMDAR data under WICAP, that the ownership of AMDAR data remains with the providing airlines and that such data are subject to the onward distribution restrictions imposed by the airlines,
- (4) That participation in the WICAP Regional AMDAR Programme by WMO Members will be voluntary and that WICAP will not initially replace existing national and regional AMDAR programmes, although it is expected that these programmes will be offered the opportunity to migrate to WICAP based on a decision, process and timeline that is convenient to the operators,
- (5) That TT-IWCA has developed proposed Terms of Reference for the WICAP Governing Board in accordance with its role as defined in the WICAP Concept of Operations,

**Noting with satisfaction** that TT-IWCA has well fulfilled its role to coordinate the development of the Purpose and Principles and the Concept of Operations for WICAP, supporting the decision of Congress in 2019 (Cg-18) and to continue to coordinate the ongoing development of WICAP in accordance with the WICAP Implementation Plan,

**Having been informed** that the Technical Coordination Committee has reviewed and endorsed both the WICAP Implementation Plan and the WICAP Data Policy and that the Policy Advisory Committee has reviewed and endorsed the proposed Terms of Reference for the WICAP Governing Board,

**Decides:**

- (1) To adopt in principle the Data Policy for WICAP as provided in Annex 1 to the present resolution;
- (2) To approve the Terms of Reference for the WICAP Governing Board as provided in Annex 2 to the present resolution;
- (3) To dissolve TT-IWCA and transfer its remaining role and responsibilities to the Infrastructure Commission under the Standing Committee on Earth Observing Systems and Monitoring Networks (SC-ON);

**Requests** the Secretary-General:

- (1) To coordinate the formal establishment and incorporation of the Terms of Reference of the WICAP Governing Board as an appendix to the IATA-WMO Working Arrangement on the Establishment and Operation of the WMO-IATA Collaborative AMDAR Programme;
- (2) To work with IATA to coordinate the establishment of the WICAP Governing Board in line with its approved Terms of Reference and with WMO membership assigned to the Governing Board subject to the approval of EC;

**Requests** the Infrastructure Commission:

- (1) To review and finalize the Data Policy and have it submitted to EC-73;
- (2) To take over the role and responsibility to coordinate the ongoing establishment of WICAP in accordance with the WICAP Implementation Plan and in collaboration with IATA

and WMO regional associations and to regularly report to EC on progress made on the implementation of WICAP;

**Encourages** WMO regional associations and their members to continue towards the establishment of regional AMDAR programmes under WICAP in accordance with the WICAP Implementation Plan.

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## **Annex 1 to Resolution 8 (EC-72)**

### **WICAP DATA POLICY**

Draft V2, 6 June 2020

The purpose of this Data Policy is to outline the understanding between WMO and IATA, on the definitions, uses and principles applicable to observations and data collected and exchanged or transferred under, and as an integral part of, the framework of the WMO-IATA Collaborative AMDAR Programme (hereinafter the "**Collaborative Programme**" or "**WICAP**") established on [Name of Agreement, dated [...]] as well as to determine the roles of participating entities and their respective contribution to WICAP.

Acceptance of and adherence to this Data Policy is an essential condition for participation in WICAP and this Data Policy is to be included or well-referenced in all contractual arrangements established under WICAP.

#### **Definitions**

Under the Collaborative Programme, the following are defined, in alphabetical order:

##### **AMDAR Data**

AMDAR Data shall consist of any of the following items:

1. Any single distinct AMDAR Observation, or part thereof, derived from AMDAR Reports, or a collection thereof, in either electronic or physical form or format; or
2. Any statistical aggregation of any collection of AMDAR Observations or part thereof, in either electronic or physical form or format.

##### **AMDAR Metadata**

AMDAR Metadata shall be defined as any digital or physical data value or set of values which define physical or any other characteristics of a Participating Aircraft and the AMDAR Data which the Participating Airline has agreed to contribute and make available to WMO, WMO Data Users and WICAP Operators under the Collaborative Programme in order to support the relevant requirements of the WIGOS Metadata Standard as defined in the *Guide to Aircraft-Based Observations, Appendix D*, (WMO-No. 1200) as amended or supplemented from time to time.

##### **AMDAR Observation**

An AMDAR Observation is a set of calculated or measured meteorological captured observations and data, together with other related variables and aircraft metadata derived from instrumentation on a Participating Aircraft platform, which can be grouped together by spatial, temporal and other variables or constant values within the AMDAR Observation to uniquely and specifically locate the meteorological values in three-dimensional space and in time, and identify the platform from which it originates. An AMDAR Observation shall be

consistent with, and further understood by its specified derivation within the current and latest version of the *WMO AMDAR Onboard Software Functional Requirements Specification*, as amended or supplemented from time to time.

The simplest example of an AMDAR Observation is a collection of values including: the nationally registered aircraft identifier, latitude, longitude, altitude, time of the observation and the air temperature.

A more complex AMDAR Observation is one that contains these simple values together with additional meteorological or other values derived or measured from the aircraft platform.

### **AMDAR Report**

An AMDAR Report is a report or message transmitted from a Participating Aircraft containing one or more AMDAR Observations.

Eddy Dissipation Rate (EDR) data generated by Participating Airlines in the IATA Turbulence Aware Programme and made available by or to participants in the Collaborative Programme are also defined to be AMDAR Reports and shall be used in accordance with this Data Policy.

### **Authorized Third-Party**

An Authorized Third-Party is a public or private entity which does not directly participate in the Collaborative Programme but which is authorized under the Collaborative Programme to access unrestricted Historical AMDAR Data only on the WMO Information System, for the purposes of non-commercial activities, without charge, in accordance with the Resolutions adopted by WMO from time to time, including more specifically Resolution 40 (Cg-XII) - WMO Policy and Practice for the Exchange of Meteorological and Related Data and Products including Guidelines on Relationships in Commercial Meteorological Activities, as amended or supplemented from time to time. Examples of Authorized Third-Parties are members of research and education communities.

### **Global Data Centre for Aircraft-Based Observations**

The WMO Global Data Centre for Aircraft-Based Observations (GDC-ABO) provides WMO Data Users and Authorized Third-Parties with access to AMDAR and other aircraft-based observations that have been shared on the WMO Information System (WIS). The role of GDC-ABO is currently provided by the USA, National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Prediction (NCEP), based on the designation of the WMO Executive Council following Resolution 6 (EC-69) - Establishment and Designation of the WMO Global Data Centre for Aircraft-Based Observations.

### **Historical AMDAR Data**

Historical AMDAR Data shall consist of any AMDAR Data and/or AMDAR Observation(s) for which the corresponding UTC time is/are after forty-eight (48) hours of the current UTC real time.

### **Licensed Private Third-Party**

A Licensed Third-Party is any entity which does not participate in the WICAP, nor is an Authorized Third-Party and which must apply for and be granted by IATA a specific and restricted license in order to access AMDAR Data from the Collaborative Programme for the purposes of non-commercial activities and for its own use, in accordance with the Resolutions adopted by WMO from time to time, including more specifically Resolution 40 (Cg-XII) - WMO Policy and Practice for the Exchange of Meteorological and Related Data and Products including Guidelines on Relationships in Commercial Meteorological Activities, as amended or supplemented from time to time. Examples of Licensed Private Third-Parties are private-sector entities purchasing rights directly from a Participating Airline or from IATA.



**Near-Real Time AMDAR Data**

Near-Real Time AMDAR Data consists of any AMDAR Data and/or AMDAR Observation(s) for which the corresponding UTC time is/are within forty-eight (48) hours of the current UTC real time.

**Participating Aircraft**

An aircraft operated by a Participating Airline and on board of which the Participating Airline has installed equipment and/or software specified under the Collaborative Programme for the provision of AMDAR Data through the reporting of AMDAR Observations within transmitted AMDAR Reports.

**Participating Airline**

A Participating Airline is an airline which participates in the Collaborative Programme (WICAP) in accordance with the Collaborative Programme's terms and conditions, based on a contractual arrangement established with one or more WICAP Operator(s) for the collection and provision of AMDAR Data through AMDAR Observations and AMDAR Reports in a prescribed geographical area and altitude.

**Products and Services Derived from Historical AMDAR Data**

Products and Services Derived from Historical AMDAR Data are any products or services derived from the use of, or with the input of, Historical AMDAR Data and/or any aggregation of Historical AMDAR Data in either electronic or physical format, and which do not allow the derivation or re-derivation of the original Historical AMDAR Data used for their derivation.

**Products and Services Derived from Near-Real Time AMDAR Data**

Products and Services Derived from Near-Real Time AMDAR Data are any products or services derived from the use of, or with the input of, Near-Real Time AMDAR Data for use in the provision of meteorological services or related activities that comply with the relevant Resolutions adopted by WMO, and which do not allow the derivation or re-derivation of the original Near-Real Time AMDAR Data used for their production.

**Products and Services Derived from AMDAR Data**

Products and Services Derived from AMDAR Data include Products and Services Derived from Historical AMDAR Data and/or Products and Services Derived from Near-Real Time AMDAR Data.

Examples of Products and Services Derived from AMDAR Data are:

- Gridded numerical weather prediction output or products which use AMDAR Data as inputs.
- Digital or physically reproduced numerical weather prediction output or products overlaid with de-identified Historical AMDAR Data.
- Digital or physically reproduced satellite imagery overlaid with de-identified Historical AMDAR Data.

Examples of products and services that do not comply with the definition of Products and Services Derived from AMDAR Data are:

- AMDAR Data, AMDAR Observations and AMDAR Reports.
- Lists or collections of AMDAR Observations that are not de-identified.

**WICAP Operators**

WICAP Operators are WMO Member National Meteorological and Hydrological Services (NMHS) that are designated by WMO to undertake specific and agreed tasks and perform specific and agreed roles under the Collaborative Programme to support and enable its operation, in keeping with this WICAP Data Policy.

### **WMO Members**

WMO Members are defined in Article 3 of the Convention of WMO.

### **WMO Data Users**

WMO Data Users are WMO Member government agencies or other entities that make use of AMDAR Data shared on the WMO Information System in accordance with Resolution 40 (Cg-XII), for applications, the derivation of products and provision of services associated with WMO Application Areas, as defined under the WMO Rolling Review of Requirements<sup>1</sup>.

## **Data Governance Principles; Rights to Derived Products and Services**

### **1. General Principles**

Under the Collaborative Programme, AMDAR Data and AMDAR Metadata shall be transmitted, distributed, or made available to IATA, WMO Data Users, Participating Airlines and Authorized Third-Parties in accordance with all principles of WMO's legal and regulatory framework and, in particular, in accordance with Resolution 40 (Cg-XII) - WMO Policy and Practice for the Exchange of Meteorological and Related Data and Products including Guidelines on Relationships in Commercial Meteorological Activities, and on the basis of the following general data governance principles:

- Depending on the Collaborative Programme requirements, AMDAR Data contributed may contain identifying information. In all cases and without exception, any information extracted and generated from AMDAR Data under the Collaborative Programme, in whole or in part, shall be de-identified and anonymized.
- De-identification means that all information specific to the Participating Airline and the Participating Aircraft will be removed or redacted.
- All published analyses and reports will be de-identified to assure the anonymity of a Participating Airline, a Participating Aircraft, their routes and flights as well as any other information deemed private or sensitive.
- For clarification, it is acknowledged that the above de-identification stipulations will not prevent the Collaborative Programme from statistically collating and using quality control-related data and information for the purposes of reporting to Collaborative Programme participants on the quality status of AMDAR Data and AMDAR Metadata in the interest of evaluating and assessing data quality and accuracy, identifying causes that may impact quality and accuracy, issuing recommendations for improvement and enhancement, and applying corrective measures as deemed necessary.

### **2. Ownership and Rights to Data**

AMDAR Data, AMDAR Observations and AMDAR Reports collected by and transmitted from a Participating Aircraft and AMDAR Metadata are and shall remain the property of the Participating Airline.

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<sup>1</sup> The WMO Rolling Review of Requirements and related provisions are defined within the *Manual on WMO Integrated Global Observing System* (WMO-No. 1160), Sections 2.2.3, 2.3 and Appendix 2.3.

Near-Real Time AMDAR Data shall be provided to WMO Data Users subject to limited access rights in compliance with the principles of the Collaborative Programme adopted by the WICAP Governing Board under this Data Policy. Less restrictions will apply to Historical AMDAR Data which are accessible to all WMO Data Users and Authorized Third-Parties in accordance with this Data Policy.

### **3. Undertakings by the Participating Airlines**

Participating Airlines under the Collaborative Programme acknowledge, agree and commit to the following:

- (a) Deliver, or facilitate delivery of agreed AMDAR Reports, AMDAR Observations and AMDAR Data to the designated WICAP Operator(s) on a best-efforts basis;
- (b) Enter into a WICAP Participation and Collaboration Agreement formalizing the terms and conditions applying to the Collaborative Programme and respective roles and duties of the parties;
- (c) Grant IATA the non-exclusive, permanent, unconditional, transferable rights and license to receive, access, store, use and reproduce AMDAR Data in order for IATA to use same in compliance with the purpose of the Collaborative Programme, as well as the right to develop Products and Services Derived from AMDAR Data, including the right to treat the data collected, publish and commercialize the AMDAR Data and Products and Services Derived from AMDAR Data in an aggregated anonymized format to Licensed Private Third-Parties in compliance with the principles of the Collaborative Programme, as established from time to time by the WICAP Governing Board;
- (d) Grant to the designated WICAP Operator(s) under a non-exclusive, restricted and non-transferable license, subject to the terms and conditions contained in the WICAP Participation and Collaboration Agreement established between the parties, the rights to receive, access, reproduce and store AMDAR Reports, AMDAR Observations and AMDAR Data, to distribute AMDAR Data according to WMO's legal and regulatory framework, and to use AMDAR Data to develop Products and Services Derived from AMDAR Data in accordance with the governance principles established from time to time by the WICAP Governing Board;
- (e) Grant WMO and WMO Data Users the non-exclusive rights and license to receive, access, use, reproduce, distribute and store AMDAR Data in accordance with WMO's regulatory and legal framework, as well as with the governance principles established from time to time by the WICAP Governing Board, and to use same to develop Products and Services Derived from Near-Real Time AMDAR Data and Products and Services Derived from Historical AMDAR Data;
- (f) Grant Authorized Third-Parties the non-exclusive, non-transferable, restricted rights and license to receive, access, and use Historical AMDAR Data and to use it to develop Products and Services Derived from Historical AMDAR Data;
- (g) Grant the WMO Global Data Centre for Aircraft-Based Observations the non-exclusive rights and license to receive AMDAR Reports, AMDAR Observations, AMDAR Data, retain records of same in archives, provide Historical AMDAR Data to WMO Data Users and other Authorized Third-Parties, use AMDAR Data to develop Products and Services Derived from AMDAR Data, and to manage and define AMDAR Data quality under the WMO Integrated Global Observing System (WIGOS);
- (h) Endeavour to provide the designated WICAP Operators and WMO Data Users with the AMDAR Metadata necessary to support the relevant requirements of the WIGOS

Metadata Standard as defined in the *Guide to Aircraft-Based Observations, Appendix D* (WMO-No. 1200);

- (i) Take reasonable measures to ensure that any data or information in the Collaborative Programme is protected against unauthorized use or disclosure by employees, agents, subcontractors and third-parties; and
- (j) Endeavour to comply with the applicable data release policy applicable to the Eddy Dissipation Rate (EDR) data generated by Participating Airlines who participate in the IATA Turbulence Aware Programme.

#### **4. Undertakings by the WMO, WMO Members and WICAP Operators**

WMO, WMO Members and WICAP Operators acknowledge agree and commit to the following:

- (a) That IATA is hereby granted the rights and licenses as set out in this document;
- (b) To incorporate the principles of this WICAP Data Policy along with the necessary confidentiality undertakings, in all contractual arrangements and procedures with third-party suppliers, technical providers, service providers, subcontractors and agents that are contracted under the Collaborative Programme and seek to ensure that such third-party providers acknowledge and undertake to comply with the principles set out in the WICAP Data Policy and take all necessary measures in order to prevent unauthorized third-parties to access AMDAR Reports, AMDAR Observations, AMDAR Data and AMDAR Metadata;
- (c) To acknowledge that the rights and license granted under the Collaborative Programme are non-exclusive, restrictive, non-transferable and cannot be shared with unauthorized third-parties, including more particularly and without limitation private and commercial parties, unless specifically authorized in advance to do so by IATA, the Participating Airline(s) and the WICAP Governing Board;
- (d) That the Participating Airline retains the right to deal with, sell, lease, license or otherwise make available to other parties the AMDAR Observations, AMDAR Reports and AMDAR Data the Participating Airline has collected and produced. All other Collaborative Programme participants wishing to share AMDAR Data or information outside their organizations must seek prior approval in writing from the WICAP Governing Board; and
- (e) That Participating Airlines and Participating Aircrafts shall comply with the applicable data release policy applicable to the EDR data generated by Participating Airlines who participate in the IATA Turbulence Aware Programme. For reference, the EDR is an objective, aircraft-independent, universal measure of turbulence based on the rate at which energy dissipates in the atmosphere.

#### **5. Rights to Commercialization**

The WMO, WMO Members, WMO Data Users, WICAP Operators and Participating Airlines acknowledge and agree that, in consultation with the WICAP Governing Board of the Collaborative Programme, IATA is granted the exclusive right to commercialize, sublicense or otherwise give access to AMDAR Data to Licensed Private Third-Parties for purposes of entertaining commercial activities, on a non-exclusive, restricted, limited, conditional, non-assignable, non-sublicensable and non-transferable basis.

#### **6. Rights Derived from Historical AMDAR Data and Near-Real Time AMDAR Data**

Subject to the principles set out under sections 2 to 4 above regarding ownership and rights to data, as between the Participating Airlines, IATA, WMO, WMO Data Users, WICAP Operators and Authorized Third-Parties, and unless otherwise provided by way of a specific agreement, IATA, WMO and WMO Data Users will retain their respective rights of and have full ownership and/or licensing of any Products and Services Derived from AMDAR Data. IATA, WMO and WMO Data Users may enjoy all rights and privileges accorded to ownership of and/or right to license of such Products and Services Derived from AMDAR without accounting to the other.

## **7. Trademarks**

WMO shall authorize IATA and the Participating Airlines to make use of the WMO name and logo, as well as the WICAP identification and logo for the promotion of the Collaborative Programme.

## **8. Amendments to Data Policy**

This Data Policy may be amended from time to time by the WICAP Governing Board. Should this Data Policy be found to depart or derogate, in whole or in part, from applicable laws and regulations, it will be deemed to be amended to such extent and as necessary to comply with the said laws and regulations in order to ensure full compliance.

## **9. Interpretation**

All terms and concepts not otherwise defined in this document shall carry the meaning set out under the Resolutions and other documents setting out the Collaboration Programme.

## **10. WMO Privileges and Immunities**

Nothing contained herein shall constitute or be deemed a waiver, express or implied, of any of the privileges and immunities enjoyed by WMO.

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### **Annex 2 to Resolution 8 (EC-72)**

#### **TERMS OF REFERENCE OF THE WMO-IATA COLLABORATIVE AMDAR PROGRAMME (WICAP) GOVERNING BOARD**

The WICAP Governing Board shall act as the authoritative, decision-making body of the WICAP on behalf of the two partner organizations, namely, the International Air Transport Association (IATA) and the World Meteorological Organization (WMO). The Governing Board shall oversee, and ultimately have responsibility for all matters relating to the implementation and operation of the WICAP as established and defined under the Working Arrangement on the Establishment and Operation of the WMO-IATA Collaborative Aircraft Meteorological Data Relay (AMDAR) Programme (WICAP) - the Working Arrangement.

These Terms of Reference shall be established and maintained under the Working Arrangement, having effect from when formally established and so long as the Working Arrangement remains in place.

The WICAP Governing Board shall consist of a group of officials and technical representatives appointed by IATA and WMO, sufficient in number, authority and experience to be able to fulfil its role and duties.

IATA and WMO shall each have equal representation in the operation of the Governing Board and shall each appoint a co-chair from their respective memberships to oversee and manage the business and decision-making processes of the Governing Board.

The Governing Board shall meet at least annually, or more often as required, to fulfil its mandate under these Terms of Reference.

The Governing Board shall be responsible in particular for the following activities and aspects of the WICAP:

- (a) Management and coordination of the implementation and ongoing operation of the WMO-IATA Collaborative AMDAR Programme based on The Working Arrangement;
- (b) Oversight and final approval of the development, establishment and maintenance of the WICAP legal framework, in accordance with the Working Arrangement;
- (c) Oversight of the development, establishment and ongoing operation of the WICAP financial framework, in accordance with the Working Arrangement;
- (d) Maintenance of the WICAP Data Policy associated with the AMDAR Data derived from WICAP, and ongoing oversight of adherence to it through the development, establishment and maintenance of collaborative agreements between the WICAP partners and its operational entities under the WICAP legal framework;
- (e) Establishment and ongoing oversight of the WICAP Oversight Planning and Coordination Team (OPCT) which will oversee and assist in the prescribed developmental and operational processes of WICAP;
- (f) Through the OPCT and other operational entities of the WICAP, establish and operate a reporting process to ensure that the Governing Board can maintain oversight of the ongoing status and progress made in the development and operation of the WICAP;
- (g) Oversee the establishment and ongoing operation of the WICAP Operating Centres operated by designated WMO Members under the authority of the relevant and respective WMO Regional Association (RA);
- (h) Ensure continuing cooperation and collaboration with the relevant WMO Technical Commissions, WMO Regional Associations and IATA industry groups and partners, including Partner Airlines, third-party providers and data users;
- (i) On an ongoing basis and as necessary, monitor, review, refine and revise the internal structure, the operational frameworks and processes and the requirements for AMDAR Data of the WICAP, making and/or authorizing necessary adjustments and changes, including the establishment, activation or disbanding of associated teams and theme leaders, and refining their terms of reference as necessary; and
- (j) Promote and facilitate ongoing support of the WICAP by the partner organizations and among all partner entities, data users and stakeholders.

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## **Resolution 9 (EC-72)**

### **POSTPONEMENT OF THE THIRTEENTH INTERNATIONAL PYRHELIOMETER INTERCOMPARISON**

THE EXECUTIVE COUNCIL,

**Recalling:**

- (1) Resolution 13 (EC-XXXIV) – Development and comparison of radiometers,

(2) Resolution 1 (CIMO-17) – Governance and traceability of atmospheric longwave irradiance,

**Noting:**

(1) That international pyrheliometer comparisons are organized at least every five years to ensure the stability of the World Standard Group and to disseminate the World Radiometric Reference worldwide to regional and national reference instruments,

(2) that the Thirteenth International Pyrheliometer Comparison (IPC-XIII) and the conjointly planned Regional Pyrheliometer Comparisons (RPCs), Fifth Filter Radiometer Comparison (FRC-V) and Third International Pygeometer Comparison (IPgC-III) were scheduled to take place at the World Radiation Centre (Davos, Switzerland) from 28 September to 16 October 2020,

(3) That the expected outcomes of IPC-XIII and IPgC could not be achieved with limited international participation if held in 2020 due to the pandemic and inherent travel restrictions,

**Having considered** the recommendation of the Technical Coordination Committee contained in document EC-72/INF. 2.5(2),

**Decides:**

(1) To exceptionally postpone the organization of IPC-XIII, as well as IPgC-III and FRC-V to 2021 and to maintain the normal cycle of IPCs for the future (IPC-XIV taking place in 2025);

(2) That the time period for the regular comparison/calibration of reference instruments (from regional/national radiation centres, or other radiation centres) against the World Standard Group is exceptionally extended to six years;

**Invites** centres that would face a problem because of this postponement to inform the Secretariat so that the Commission for Observation, Infrastructure and Information Systems (INFCOM) Standing Committee on Measurements, Instrumentation and Traceability (SC-MINT) can develop a solution for those centres;

**Agrees** that the World Radiation Centre shall perform an interim, internal evaluation of the performance of the instruments composing the World Standard Group (WSG) using also all other instruments that are currently available at the Physical Meteorological Observatory Davos (PMOD) and which participated at recent IPCs, based on a measurement campaign conducted at the time at which IPC-XIII was expected to take place (28 September to 16 October 2020) and that a similar evaluation shall be performed for the World Infrared Standard Group (WISG);

**Requests** INFCOM to review the interim evaluations of WSG and WISG performed by the World Radiation Centre;

**Encourages** Regional/national radiation centres to continue the yearly intercomparison of their standard instruments and to provide support to their neighbouring countries as appropriate.

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## Resolution 10 (EC-72)

### WMO REGIONAL TRAINING CENTRES (RECONFIRMATION)

THE EXECUTIVE COUNCIL,

**Recalling** Resolution 8 (EC-68) – Amendments to *Technical Regulations* (WMO-No. 49), Volume I on EC Criteria for Designation and Reconfirmation of the WMO Regional Training Centres (RTCs),

**Noting** Resolution 52 (Cg-17) – Recognition and reconfirmation of WMO Regional Training Centres, Decision 64 (EC-68) – Reconfirmation of the Institute of Biometeorology (Florence, Italy) as a WMO Regional Training Centre (Note: the Institute of Biometeorology changed its name to the Institute of BioEconomy on 1 June 2019), Decision 56 (EC-69) – WMO Regional Training Centres, and Resolution 31 (EC-70) – Education and training, and Resolution 9 (Cg-18) – Joint World Meteorological Organization-Intergovernmental Oceanographic Commission Collaborative Board, regarding the designation, reconfirmation and extension of the status of concerned WMO RTCs until ongoing or future external reviews are concluded and subsequent EC decisions are taken,

**Taking note** that the WMO RTCs in Costa Rica, India, and Russian Federation are currently being reviewed,

**Considering** that the WMO RTCs in Egypt, Madagascar, Philippines, Qatar, South Africa and Uzbekistan have been reviewed and reconfirmation of their status was recommended by the EC Panel of Experts on Education and Training,

**Decides** to reconfirm the status of the WMO RTCs in Egypt, Madagascar, Philippines, Qatar, South Africa and Uzbekistan.

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## Resolution 11 (EC-72)

### GUIDELINES FOR PUBLIC-PRIVATE ENGAGEMENT (EDITION 2020)

THE EXECUTIVE COUNCIL,

**Recalling** Resolution 33 (EC-70) – Public-private engagement, Resolution 79 (Cg-18) – Open Consultative Platform “Partnership and Innovation for the Next Generation of Weather and Climate Intelligence”, and Resolution 80 (Cg-18) - Geneva Declaration – 2019: Building Community for Weather, Climate and Water Actions,

**Noting** that the Congress, with the adoption of the Geneva Declaration – 2019: Building Community for Weather Climate and Water Actions, has set a high-level WMO policy on public-private engagement,

**Considering** that the Policy Framework on Public-private Engagement, endorsed through Resolution 33 (EC-70), provided a stepping stone toward the Geneva Declaration – 2019,

**Having considered** the recommendation of the Policy Advisory Committee contained in document EC-72/INF. 2.5(1),

**Agrees** that the Policy Framework should be transformed into guidelines for global, regional and national actions by WMO and the Members to promote effective engagement between the



public, private, academic and civil society sectors based on the established principles for successful partnerships and helping to enhance socioeconomic benefits;

**Endorses** the Guidelines for Public-private Engagement (edition 2020) as provided in the annex to the present resolution;

**Agrees** that the Guidelines should be reviewed and updated regularly in order to reflect the highly dynamic processes shaping public-private engagement within the weather and climate enterprise, raise awareness and promote good practices;

**Requests** the Policy Advisory Committee to keep both the high-level policy and the Guidelines for Public-private Engagement under review and monitor their impact on relevant policies and practices of Members;

**Requests** the presidents of the regional associations to give due consideration to the Guidelines in planning relevant regional activities, in particular those for raising mutual awareness and building trust between sectors, and in utilizing the potential of public-private engagement in bridging the capacity gap;

**Encourages** Members to use the Guidelines in establishing collaboration and partnerships at the national level across public, private, academic and civil society sectors that pursue the common goals for the public good;

**Requests** the Secretary-General to publish the Guidelines for Public-private Engagement (edition 2020) in all WMO official languages.

Note: This Resolution replaces Resolution 33 (EC-70), which is no longer in force.

## **Annex to Resolution 11 (EC-72)**

### **GUIDELINES FOR PUBLIC-PRIVATE ENGAGEMENT**

(Edition 2020, endorsed by the seventy-second Session of the Executive Council, June 2020)

#### **1. INTRODUCTION**

##### **1.1 Global factors**

The World Meteorological Organization as a United Nations organization, is driven by the Global UN agenda. Today, the 2030 Agenda for Sustainable Development (SDGs, adopted in 2015), the Sendai Framework for Disaster Risk Reduction 2015-2030, and the UN Framework Convention on Climate Change are the principal global agreements framing the goals and objectives of WMO. For the achievement of these goals, cross-sectoral and innovative partnerships will play a crucial role. Actors from different sectors will have to work together in an integrated manner by pooling financial resources, knowledge and expertise.

Sustainable Development Goal 17: "Revitalize the Global Partnership for Sustainable Development", recognizes multi-stakeholder partnerships as important vehicles to support the achievement of the SDGs in all countries, particularly in the developing countries. Goal 17 further seeks to encourage effective partnerships between public, private and academic sectors, as well as civil society, building on the experience and resourcing strategies of partnerships. The majority of United Nations organizations have adapted, or are in the process

of adapting, their respective strategies and policies to reflect the thrust of Goal 17 for public, private and academic engagement.

## 1.2 WMO context

The World Meteorological Congress defined 'partnership' as working with international agencies, other organizations, academia, the media and the private sector to improve the range, quality and delivery of critical environmental information and services. WMO partnerships, some of which were formed decades ago, are in concert with the rolling WMO Strategic Plan which maintains a strategic objective 'Strengthened Partnerships' with the realization that new and strengthened partnerships and cooperation activities are needed to improve the performance of the National Meteorological and Hydrological Services (NMHSs) in delivering services and to demonstrate the value of WMO contributions within the United Nations system, relevant regional organizations, international conventions and national strategies.

An important milestone in the WMO history of partnerships with non-State entities was the adoption by the Twelfth World Meteorological Congress (Cg-XII, 1995) of a policy and practice for the international exchange of meteorological data and products (Resolution 40 (Cg-XII))<sup>2</sup>. An annex to Resolution 40 provided "Guidelines for relations between National Meteorological or Hydrometeorological Services and the commercial sector". It was clearly stated in these guidelines that the purpose was "to further improve the relationship between NMSs and the commercial sector. The development of the exchange of meteorological and related information depends greatly upon sound, fair, transparent, and stable relations between these two sectors""

The WMO World Weather Open Science Conference (WWOSC) held in Montreal, August 2014, put a special focus on the need for a broad dialogue between the public and private sectors, with a strong engagement of academia and other relevant entities such as learned societies, to respond to the changing landscape of the weather, climate and hydrological science and services<sup>3</sup>. The outcomes of the WWOSC discussions encouraged the conduct of a series of multi-stakeholder follow-up dialogues in coordination with partner organizations, such as the Global Facility for Disaster Reduction and Recovery (GFDRR) of the World Bank Group and the Association of Hydro-Meteorological Equipment Industry (HMEI).

The Seventeenth World Meteorological Congress (Cg-17, 2015) gave a new perspective to partnerships by acknowledging the growing involvement of the "private sector entities" (private companies, citizen's associations, bloggers, etc.) in weather, climate, water and related environmental matters<sup>4</sup>. These private sector entities have been active to a varying extent in the full value chain, starting with observations; extending to data acquisition tools and technologies, information generation and processing technologies; and culminating in product dissemination and services. Congress thus recognized this part of the private sector as a set of stakeholders in end-to-end service delivery supporting the WMO vision, mandate and objectives. Congress highlighted the different, and at times, complementary roles and responsibilities of NMHSs, academic institutions, research and technological agencies, and the private sector. It was felt that closer interactions between the public and private sectors would stimulate innovation and facilitate cross-fertilization, ultimately benefitting society. Congress noted that WMO had a unique opportunity to initiate such interaction and emphasized that inaction may limit the benefits to be derived for the users. On the other hand, such activities could also lead to the proliferation of weather and climate information of various nature and quality which could challenge the NMHSs' major mandate in the provision of authoritative weather information and warnings to the public and the disaster management authorities. It

<sup>2</sup> World Meteorological Organization (1995) Twelfth World Meteorological Congress. WMO-No. 827: 125-130

<sup>3</sup> Hayes J, Ahluwalia H, Abraham J (2015) The future of the weather enterprise. WMO Bulletin 64(1):14-15

<sup>4</sup> World Meteorological Organization (2015) Seventeenth World Meteorological Congress. WMO-No. 1157: 215-217

was also recognized that, while the private sector stakeholders could help increase the availability of weather services for the citizens and business, it was of paramount concern to ensure the sustainability of NMHSs over time as the providers of the basic infrastructure and services needed by all stakeholders.

Acknowledging the challenges, Cg-17 recognized that WMO guidance on engagement with the private sector would help NMHSs to keep pace with the activities at the national and international levels and enhance efficiency and service delivery, including in support of the development of observational and communication infrastructures at the local and regional level.

Following the directives given by the Cg-17, several activities have been undertaken with the aim to build awareness and improve the understanding between the public, private and academic sectors. The sixty-eighth session of the Executive Council (EC-68, 2016) held for the first time a Special Dialogue on the "complementary and cooperative contributions of public and private sector institutions to meteorology and hydrology"<sup>5</sup>. In 2017, EC-69 adopted "A Roadmap to the Eighteenth World Meteorological Congress on the Public-Private Engagement (PPE)"<sup>6</sup> and a key element of this Roadmap was the adoption of EC-70 in June 2018 of the WMO Policy Framework on Public-Private Engagement<sup>7</sup>. The aim of the Policy Framework was to assist Members and stakeholders from all sectors by providing a set of guiding principles for successful partnership and highlighting the challenges and opportunities that need to be addressed in order to harness the potential benefits from working together for the benefit of society.

The Eighteenth World Meteorological Congress (Cg-18, 2019) adopted the Geneva Declaration - 2019: Building Community for Weather, Climate and Water Actions – a high-level policy act manifesting the WMO position, policy and guidance on public-private engagement in support of the Sustainable Development Agenda, climate change adaptation and disaster risk reduction<sup>8</sup>. This reflects the new paradigm of cooperation and partnership between stakeholders from all sectors of the weather, climate and water enterprise<sup>9</sup> needed as a collective response to global societal risks related to extreme weather, climate change, water scarcity and other environmental hazards.

An Open Consultative Platform (OCP) entitled "Partnership and Innovation for the Next Generation of Weather and Climate Intelligence"<sup>10</sup> was launched during the Cg-18 as a vehicle for sustainable and constructive dialogue between the sectors. Its intention is to articulate a common vision for the future of the weather enterprise through inclusive of key stakeholders from all sectors of the weather enterprise and formulate ideas and actions fostering mutually-beneficial partnerships.

## **2. OBJECTIVES OF THE GUIDELINES**

The Guidelines for Public-private Engagement are aimed to inform and facilitate global, regional and national actions by WMO and its Members towards proactive engagement between the public, private and academic sectors, and all stakeholders, which would result in better service to their governments, economy and citizens. The Guidelines outline and promote principles aimed at maximizing the benefits of an inclusive weather enterprise approach.

<sup>5</sup> World Meteorological Organization (2016) Executive Council - Sixty-eighth session. WMO-No. 1168:232-237

<sup>6</sup> World Meteorological Organization (2017) Executive Council – Sixty-ninth session. WMO-No. 1196:283-292

<sup>7</sup> World Meteorological Organization (2018) Executive Council – Seventieth session. WMO-No. 1218:102-115

<sup>8</sup> World Meteorological Organization (2019) Eighteenth World Meteorological Congress, WMO-No. 1236: 246-251

<sup>9</sup> Hereafter referred to as "weather enterprise". See Appendix.

<sup>10</sup> World Meteorological Organization (2019) Open Consultative Platform. Geneva

Developed in line with Resolution 67 (Cg-XVII), Decisions 73 (EC-68) and 61 (EC-69), and updated with the high-level policy directions provided in the Geneva Declaration – 2019 (Resolution 80 (Cg-18)), the Guidelines provide the description and explanations related to:

- (a) The evolving potential for engagement of public, private, academic sectors and civil society in the areas of weather, climate and water;
- (b) Principles for public-private sector engagement based on the “Key Issues to be addressed in developing policies and principles for engagement” (Annex 2 to Decision 73 (EC-68));
- (c) Evolving roles of stakeholders at global, regional and national levels;
- (d) Options for public-private engagement in legislative landscape, capacity development and other societal issues, in view of developing a WMO guidance to Members.

The Guidelines are intended to be of a living document with frequent updates in order to address emerging issues and shape a robust way forward in a changing environment. The Guidelines seek to strengthen and enhance opportunities for Members, their NMHSs and the private sector, based on ethical behaviour, to promote a level playing field, enable efficiency and innovation, and utilize an inclusive approach to challenges related to funding fundamental infrastructure and research.

The Guidelines are based upon the WMO Convention, existing policies and related regulations and guidance. The Convention has ensured the world’s nations do cooperate to create and sustain an international system to observe, predict, and provide reliable information and services in support of effective decision-making; reduction of the loss of life and property; sustainable development; and preservation of the environment and the global climate for present and future generations of humankind.

The Guidelines are supplemented by the collection of the good practices, latest updates of the PPE activities and contemporary discussions on emerging issues that are available on the WMO website (<https://public.wmo.int/ppe>), in particular, under “PPE Resources”<sup>11</sup>.

### **3. NEEDS AND DRIVERS FOR PUBLIC-PRIVATE ENGAGEMENT**

The need for a WMO Guidelines on PPE stems from the realization of the new stakeholders’ landscape in all business areas covered by the WMO Convention which form the value chain of the meteorological, climatological, hydrological and related environmental services.

Over the last two decades, all elements of the value chain have experienced a growth and diversification of stakeholders – comprising not only the governments and public sector, but also academia, private sector and citizen science. The flow of activities and the interconnections among the stakeholders in the various parts of the value chain need to be further analysed in the today’s and evolutionary context.

This would allow to identify opportunities and potential for gaining efficiency and improving quality through partnership arrangements with the participation of all sectors, in particular,

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<sup>11</sup> The online contents are for information: Except for the official WMO publications and decisions by the WMO governing bodies, these present the findings of the authors and do not imply the expression of any opinion whatsoever on the part of WMO concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products does not imply that they are endorsed or recommended by WMO in preference to others of a similar nature which are not mentioned or advertised.

partnerships that would enable bridging existing gaps in capacity and improved access to essential information and services in the developing part of the world.

### 3.1 Historic perspective

An enterprise notion and a multi-stakeholder approach could be traced back deeply in the roots of the WMO and its preceding international cooperation initiatives. It could be noticed, for instance, in one of the first meeting invitations sent to the international meteorological community as far back as in 1872:

*"We venture by the present circular to invite the heads of Meteorological Institutes, the Meteorological and other Learned Societies, as well as private scientific men and practical observers in the domain of Meteorology, to this consultative meeting, which is to be held in Leipzig ..."*

*(From the invitation letter to the Meteorological Conference at Leipzig, August 1872<sup>12</sup>)*

The meteorological and related systems and services of the twentieth century were primarily established, operated and funded by the public sector. WMO Member States have collectively built a global infrastructure under the World Weather Watch (WWW) Programme, composed by the three core systems – the Global Observing System (GOS), the Global Telecommunication System (GTS) and the Global Data Processing and Forecasting System (GDPFS). WWW has been realized and made operational on a 365/24/7 basis through an agreed set of global standards for observations, data processing and service delivery which ensured the needed harmonization and interoperability. A number of global and regional centres hosted by Members' NMHSs formed the backbone of the communication and numerical modelling needed for the forecasting of the main atmospheric variables. States cooperated, coordinated and collectively invested in building the expensive satellite segment of the GOS.

While the WWW was a vastly public sector endeavour, it would not have been successful without an essential scientific and technological support from the academia and the private industry. At the early stages, the participation of the private sector in the service delivery was generally limited with the exception of several countries where private companies have become prominent in the provision of weather services, for instance, to media outlets.

### 3.2 Factors of change

Significant changes in the WMO business domains structure started happening during the last two decades. While this change is evident across the globe its manifestations vary greatly by region and country. Five primary factors are influencing change:

- (a) Scientific and technological innovation;
- (b) Growing demand for meteorological, climatological, hydrological, marine and related environmental information and services from commercial interests, the general public and government sector;
- (c) Global action for adaptation to climate change, sustainable development, and disaster risk reduction;
- (d) Public-sector institutional and resource constraints;

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<sup>12</sup> Leipzig Conference (1872) prepared the way for holding, in Vienna in 1873, the First International Meteorological Congress.

- (e) Private-sector increased involvement and investment, consolidation and globalization.

These factors shape the processes within the weather enterprise with a pronounced trend of accelerating growth in terms of stakeholder participation and financial turnover. Amidst this change, it remains in the interest of all parties to have a robust national and global meteorological and hydrological infrastructure, as this forms the information backbone serving all sectors and the whole community. Ensuring the sustainability of this infrastructure requires all countries to reaffirm their commitment to their responsibility in funding and operating national observing networks and communication means, and adherence to respective standards and procedures. In addition, countries should reaffirm their commitment to the free and unrestricted international exchange of the requisite and quality assured essential data and products.

The change process involves the academic sector through internationally coordinated scientific and research efforts that underpin the operational systems and ensure their evolution with uptake of innovation. Continuous human capacity building through education and training is another major contribution of the academic sector.

From being mostly engaged in manufacturing equipment and providing media services, recently, the private sector involvement has been rapidly growing across the whole value chain, including a number of companies building 'end-to-end' capability with regional and global coverage. Such a growth is substantially expanding both opportunities and challenges for all players, including the NMHSs.

### 3.3 Impacts and evolving roles

The impact of these changes on the current institutional arrangements widely accepted by WMO Members for the collection, processing and exchange of meteorological, hydrological, climatological and other environmental data, as well as for the generation and provision of respective information and services, could be far-reaching. The potential exists to improve the efficacy and reach of warnings, forecasts and other services within societies around the world. At the same time, concerns have been raised that these changes might erode the core observational assets usually managed by NMHSs, as well as their status, funding and modes of operation. Such erosion could impact sustained long-term, national observing capabilities, and thereby harm key activities such as national and global climate monitoring. The role of the NMHSs as the (single) national authoritative voice for severe weather warnings and other core governmental purposes could be challenged, which could have negative impacts on public and end-users. There are numerous case studies and practices present in various parts of the community today, and examples from other sectors that can inform best practices for effective PPE to mitigate these risks.

Within the weather enterprise, national, regional and international institutions and business models vary greatly. Regardless the differences, a common goal of the enterprise should be to contribute to the core mission of protecting life and property, as well as helping foster economic growth and improving quality of life. Government, public sector, private sector, academia and civil society all play important roles.

The role of the WMO is set in the Convention which recognizes that "meteorology is best coordinated at the international level by one responsible international organization". Thus, WMO plays a central global role in facilitating the cooperation of Member States and Territories and their weather enterprise stakeholders.

Historically, the public sector has led funding and development of the backbone infrastructure of the weather enterprise. The development of observational networks and provision of weather, climate and hydrological services have been considered as national governments

obligations as “public goods”<sup>13</sup>. Recently, technological changes and changes in users’ requirements have provided new opportunities for the private sector to contribute to the provision of those services in support of public interest as well as to meet specific stakeholder needs.

In the case of weather services, one of its distinguishing characteristics is its dependence on observational data from around the globe. No one nation could provide even basic services to its citizens without continuous, real-time access to such data internationally. While investments in obtaining these observations are made at the national level, the collective benefits only accrue if: (i) a sufficiently large number of nations decide to make these investments; and (ii) these nations share the resulting data with each other. Members have invested in public sector institutions because weather, climate and hydrological services have proved essential to the safety and security of their citizens; a fundamental role of government. These factors should still be true even in the case of both public and private sectors contributing to collection of data.

At the same time, the private sector is also a valued contributor in well-being of nations and has been active in the weather enterprise for decades across all elements of the value chain. It serves a number of very important roles, including as a source of investment, a driver of technological development and innovation, a partner in service development and delivery, and an engine for economic growth and employment.

#### **4. PRINCIPLES OF ENGAGEMENT**

A major role of the Guidelines is to promote a set of basic principles to provide directions, express responsibilities and goals. Such principles step on the core values and goals of the WMO as an organization, and provide a framework to facilitate the formulation and implementation of partnerships between the WMO and the business sector, respectively, between the NMHSs and private sector stakeholders at national and regional levels, while safeguarding the integrity, impartiality and independence of the WMO and preventing and mitigating potential risks of adverse impacts on core mandates and services. The basic principles are also derived from the relevant UN policies, strategies and guidelines on public-private engagement and partnership. Furthermore, the Guidelines are following the high-level WMO policy on PPE set up in the Geneva Declaration – 2019.

##### **4.1 ‘People First’ principle**

Recognizing the core mandate of supporting local-to-global decisions related to saving life, property and economic productivity, by providing essential, meteorological, climatological, hydrological and environmental information, WMO adheres to the “People-first” approach to public-private engagement and partnerships, that has been promoted by the UN Economic Commission for Europe (UNECE) and widely accepted as a vehicle to achieve the UN SDGs<sup>14</sup>.

‘People-first’ principle sets out a clear statement that out of all the stakeholders, ‘people’ should be the priority and main beneficiary. The focus of PPE and PPPs in the weather enterprise should be on improving the safety and quality of life of communities, particularly

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<sup>13</sup> Public goods, in economic terms, are those that exhibit the following two characteristics: *Non-rivalry of consumption* – one person’s consumption does not reduce the amount available to others; and *Non-excludability* – it is impossible or extremely expensive to exclude from benefit a person or organization that refuses to contribute to the cost.

These two characteristics mean that even in free-market economies, market processes do not provide them, or do not provide them at socially optimal levels. (Hal R. Varian HR (1978))

<sup>14</sup> United Nations Economic Commission for Europe (2019) Guiding Principles on People-first Public-Private Partnerships in support of the United Nations Sustainable Development Goals. March 2019

those that are fighting poverty. Such engagement and partnerships should provide increased access to essential, affordable and fit-for-purpose products and services for all, thus contributing to resolve vulnerabilities and sensitivities to weather and climate impacts, which in turn would strengthen the enterprise by creating new demand and opportunities for weather, climate and hydrological services.

WMO contributes to this 'People-first' principle with its programmes supporting meteorological and hydrological service providers including NMHSs with free and open available data and products.

#### 4.2 Fair and transparent relationships between non-commercial and commercial entities

Commercial weather and climate activities have been growing during the last three - four decades. A crucial issue for the WMO and the meteorological community has been to find optimal solutions to maintain and improve the free international exchange of essential meteorological data and products, while safeguarding the economic interests of Members related to the sustainability and development of their national meteorological services.

In response to this, Congress adopted a policy showing that WMO was committing itself to broadening and enhancing the free and unrestricted international exchange of meteorological and related data and products. This policy, known as Resolution 40 (Cg-XII), provided also "guidelines for relations between national meteorological or hydrometeorological services (NMHSs) and the commercial sector" (Annex 3 to Resolution 40), with the understanding that the development of the exchange of meteorological and related information depends greatly upon sound, fair, transparent, and stable relations between the public and 'commercial'<sup>15</sup> sectors. Most of this generic guidance remains valid today, however, it has also been recognized that the adoption and application of these guidelines by Members is highly variable. The Eighteenth World Meteorological Congress (Cg-18, 2019) called for a review and update of the WMO data policy in Resolution 40 (Cg-XII), Resolution 25 (Cg-XIII) and Resolution 60 (Cg-XVII) which includes an updated guidance on the relationships between the non-commercial and commercial sectors.

#### 4.3 Mutual benefit

A successful and sustainable public-private engagement builds on contributions from both sectors, and each sector contributes to the success of the other. While the public sector is more likely to invest in long-term programmes and underpinning core infrastructures needed for sustained high-quality weather and climate monitoring, the private sector can be more responsive to targeted investments to bridge data gaps and to meet special customers' needs. Private sector is also faster in applying innovation and emerging technologies. The public sector's deep understanding of societal needs and trusted connection with governing authorities are critical in assuring community safety through responsiveness to authoritative warnings. At the same time, the technological agility of the private sector may present opportunities to meet novel and emerging service needs. The WMO offers a strong foundation of science, data and global standards which can inform and influence the development of these services and offer assurance to end-users regarding their quality. The private sector depends on the essential scientific and observational underpinning provided by the public sector and can be powerful advocates for sustained government investment in core public infrastructure and capability.

Based on such understanding, fair and equitable exchange of data and products is essential for the success of the entire enterprise as data availability is the key for life-saving missions like disaster risk reduction, and for meeting the breadth of societal demands that is not possible by

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<sup>15</sup> Resolution 40 (Cg-XII) uses the term 'commercial sector' with the understanding that the guidelines apply to the commercial sector engaged in meteorological activities, which includes government organizations engaged in commercial meteorological activities. See Appendix.



a single sector especially in the least developed countries. Realizing and extending an agreed framework for sustainable and affordable conditions for access to data, equally applicable to both private and public sectors, is essential to fully realize the potential of all sectors.

#### 4.4 Guiding principles for public-private engagement

The Geneva Declaration – 2019: Building Community for Weather, Climate and Water Actions, urged all stakeholders from public, private and academic sectors to adhere to the UN Global Compact and WMO established principles of successful partnerships. The following is a set of such guiding principles promulgated through the WMO high-level policy and these Guidelines.

#### **A. Advancing the overarching goals articulated in the WMO Convention,** namely:

- (a) Protection of life and property;
- (b) Safeguarding the environment;
- (c) Contributing to sustainable development;
- (d) Promoting long-term observation, collection and sharing of meteorological, hydrological and climatological data, including related environmental data;
- (e) Promotion of endogenous capacity-building;
- (f) Meeting international commitments;
- (g) Contributing to international cooperation.

**B. Shared value:** Engagement between the public, private and academic sectors should create shared value and seek “win-win” situations whereby both public entities and businesses can recognize opportunities for innovation and growth, based on science, in meeting societal needs. Creating shared value can be done by: leveraging private sector expertise and supporting technology transfer; promoting free and unrestricted data sharing based on national circumstances with intellectual property rights duly respected; accelerating uptake of research and technological developments into operations and stimulating the generation of new services; translation and dissemination of valuable knowledge; investing in local research and developing human capacity through training, thereby supporting the sustainability of the weather enterprise at all levels.

**C. Sustainability:** Public, private and academic sectors should promote sustainability of the global infrastructure by seeking opportunities for multisector engagements that improve efficiency and better serve society. Collaborative efforts – to share both benefits and risks – are needed to ensure the fiscal sustainability of the basic infrastructure for the key modules of the weather enterprise. This requires both long-term sustainability of the public budget and a complementary private financing. The three sectors should seek to identify opportunities to assume complementary roles, minimizing overlap or competition where this would lead to inefficiencies or be detrimental to the sustainability of the core infrastructure and service provision capabilities.

**D. Advancing together:** The rapid development of science and technology carries the risk of widening the gap between the developed and developing countries; the availability of global service providers might lead to marginalization of national agencies if not up to required service quality requirements. At the same time, there is an opportunity for developing countries to leapfrog ahead with a smart adoption of innovative solutions in implementing those activities which WMO defines as the key role of NMHSs, i.e., providing the core observing infrastructure and authoritative voice in public safety services. A new approach involving

effective engagement with private and academic sectors as well as smart capacity development investment policies, both national and through development financing, should be promoted to enhance the provision of high-quality products and services in all countries based on identified users' needs. This includes efforts to help bridge existing capacity gaps of developing countries, LDCs and SIDS, through inclusive 'public-private-academia-donors' partnerships for sustainable development projects. A key principle to be maintained is that all countries, no matter what their state of development, should have the possibility and be helped to advance and to benefit from the modern science and technology.

**E. Level playing field:** Both public and private sectors have much to offer to advance collective objectives in support of the public goods and specific stakeholder needs. As such, public and private sector communities should both have the opportunity to propose cooperative arrangements or other forms of engagement which will facilitate working together, when appropriate. Weather, climate, hydrological, marine and other environmental services provided by both public and private sectors should be provided with an assured level of quality. WMO and Members' governmental agencies should engage with the private sector for the purposes of development and provision of products and services that explicitly support and accelerate achievement of the goals of WMO and those of Member governments. However, to the extent reasonable, engagement should not provide exclusivity or imply endorsement or preference of a particular private-sector entity or its products or services. Moreover, over the past decade, the private sector has invested in various aspects of the weather enterprise, including in observational networks and dissemination mechanisms. This creates a unique opportunity for two-way collaboration and sharing, including of data and expertise, to facilitate the attainment of common objectives and extract maximum benefit from the value chain for all involved. In the interest of a commonly supported level playing field, exclusivity of data ownership existing on both the public and private side of activities of data gathering and dissemination should be avoided.

With due regard to national legislation, members should ensure that access to commercial data with use restrictions is treated equally between private arms of NMHSs and private sector companies. All enterprise stakeholders, including NMHSs, should comply with relevant national legislation and policy with respect to both data provision and the avoidance of anti-competitive behaviour. Where an NMHS operates both public and private arms, these should be treated as distinct entities when engaging in activities including: the exchange of data and products (including computer model output); and the provision of services (including consultancy services). Furthermore, where an NMHS with a private arm receives or generates data or products that it does not completely distribute on a full and unrestricted basis under Resolutions 40 (Cg-XII), 25 (Cg-XIII) or 60 (Cg-XVII) to commercial users, the commercial activities of the NMHS should receive equivalent treatment as commercial users.

**F. Integrity:** WMO, NMHSs and stakeholders from the public, private and academic sectors should seek to engage in mutually beneficial relationships and partnerships that benefit society. The integrity of the WMO and the agencies established by its Members, as well as their credibility, independence and impartiality should be maintained in the engagement.

**G. Sovereignty:** The prerogative of WMO Members in how weather, climate and hydrological services are to be arranged and provided within their sovereign nations should be respected. This includes national or regional policies for making public data and products available on an open and free principle.

**H. Transparency:** Engagement with the private sector should be transparent. Information on the nature and scope of major arrangements should be available to the concerned entities and to the public at large.

## 5. GLOBAL, REGIONAL AND NATIONAL ROLES

Promoting better public-private engagement would require ongoing consultation and action at global, regional and national levels. This will include defining respective roles of WMO constituencies in their interaction with other stakeholders of the weather enterprise.

### 5.1 Global level - The World Meteorological Organization

The WMO facilitates worldwide activities and cooperation around weather, climate and water for the benefit of all nations and humankind overall. The WMO role supporting effective public-private engagement includes:

#### **A. Modernized and clearly articulated standards and recommended practices.**

WMO is a recognized standard-setting organization and its standards and recommended practices are developed to enable a unified global data exchange in the weather, climate, water and environment areas; a highly harmonized data processing and forecasting; as well as, provision of services with an acceptable level of quality and standard to specific economic sectors and the public. Standards are constantly developing based on both evolving requirements and evolving technology. WMO, throughout its existence (and before that time, the International Meteorological Organization (IMO)) managed to mobilize a global community of expertise to support the development, validation and promulgation of standard and recommended practices, which, once approved by the Congress, provided the needed level of standardization, interoperability and investment-sharing that led to the today's highly successful global weather and climate enterprise. With the understanding that these regulations shall be respected by all providers in all Member countries, WMO should in the future engage more experts from the private sector and academia, including through sector's professional associations like the HMEI and other relevant international bodies, in the standard-setting process for shared ownership of these standards. As WMO work in standards and practices setting expands to consider PPE, care should be taken in not prescribing specific solutions but rather should focus on desired outcomes and performance. WMO should also enhance its role to help ensure quality in data and services. In particular, compliance with standards should be promoted in all enterprise sectors and supported by agreed verification and validation measures.

**B. Encouraging free and unrestricted exchange of data.** Governments who signed the WMO Convention have committed to observe and follow the international regulations established by the Organization. This includes standards and practices related to the collection and sharing of data and products between stakeholders as outlined in Resolutions 40 (Cg-XII), 25 (Cg-XIII) and 60 (Cg-XVII), and relevant technical regulations. WMO will develop and adapt guidance for NMHSs and other stakeholders as needed on free and unrestricted international exchange of data and products as it applies to the current environment, in which private sector, academia and civil society entities will play a growing role in the data provision.

**C. Facilitating dialogue between all stakeholders.** WMO should, together with its Members, formulate policy and strategies to better communicate the value of public meteorological and hydrological knowledge and services. Furthermore, WMO has taken the leading role in stimulating and promoting global dialogue between public, private and academic sectors, engaging players and tracking developments and trends. The Open Consultative Platform (OCP) "Partnership and Innovation for the New Generation of Weather and Climate Intelligence", launched at the Eighteenth World Meteorological Congress in June 2019, will serve as an open, constructive and participatory framework for addressing collaboratively the grand challenges before the weather enterprise. In the spirit of mutual respect and trust, the Platform will enable all stakeholders to stay abreast of issues and opportunities, both institutional and technological, to incentivize win-win approaches and to nurture innovation. A new cooperation paradigm will incorporate active sharing ideas and interacting with each other

to move from isolated actions within a single stakeholder to coordinated initiatives that are developed and shared across sectoral and organizational boundaries. The new governance structure of the WMO, including its technical commissions, should actively seek to better engage available expertise not only from the public sector but also from academia and the private sector. Such inclusive approach will require innovation in the way the technical bodies conduct their business engaging efficient use of modern communication and collaboration technology.

**D. Investigate emerging issues as well as new roles, and implementing such roles as appropriate.** As the weather enterprise evolves, WMO should monitor issues emerging around public-private engagement that could impact either its Members or the sustainability of the global weather enterprise. Among those issues, WMO should investigate the feasibility and desirability of taking on new roles to support the assurance of the quality of data and services. For example, with an ever-increasing number of potential service providers, there is a pressing need for an international authority to objectively validate the quality of the provided information and services being provided, thus helping users in their selection of providers based on principles of quality assurance. WMO programmes and expert bodies have been engaged in the development and implementation of verification methodologies, inter-comparison campaigns and quality management guidance whilst the verification of forecasts of different providers from both private and public service providers has also been done by independent third parties. In the future, such quality assurance activities should be better coordinated and criteria should be developed with the participation of the three enterprise sectors in order to distinguish between a "good service" and a "bad service". The WMO Secretariat should also look to continue to expand its dedicated expertise in "meteorology as a business".

## 5.2 Regional level – regional associations

WMO regional associations interface with their Members, liaise with other stakeholders, designate and support regional centres for delivery of regional services to Members. To support engagement with the private sector and other stakeholders, regional associations are urged to take on roles including:

**A. Gathering and disseminating information and guidance.** Regional associations are urged to facilitate change management and advocate for inclusive consultations, including knowledge and experience sharing, in order to enable Members to learn from each other and provide support as needed for effective public-private engagement. Knowledge can be shared globally through the WMO Secretariat to regional and national levels, as well as directly by regional associations with Members and other stakeholders.

**B. Raising awareness and capacity-development to Members.** Regional associations are urged to provide awareness training to NMHSs' staff and leadership in practices needed for effective promotion of the value of the public-private engagement in providing weather and climate services with greater benefits to society. Such an effort to enhance institutional capacity for PPE should highlight practical modalities of public-private-academic partnerships in the light of achieving the UN SDGs, and should be supported with examples of good national practices.

**C. Exploring further cooperation in service provision at regional and sub-regional level.** The regional associations should take a lead in informing their Members of the ongoing development of the public-private-academic engagement in the context of the expected growth of demand for and supply of services. A key element to be well understood and exploited is the increasing internationalization of service delivery. Modern technology allows for a global and regional provision of data and information services which in the past were provided exclusively by national entities. Such a trend poses both opportunities and risks,

which regional associations should address to help their members adapt to this new environment. In particular, regional associations should study and promote examples of regionalization of certain services through bilateral or multilateral cooperation between Members which improve the competitiveness of services and reduce their costs. Such sub-regional and regional approach should again not be limited to the public sector, but to explore achieving more efficiency through public-private cross-border engagement without compromising national mandates or quality requirements.

### 5.3 National level – Members and their NMHSs

Given the increasing participation of the private sector, Members and their designated agencies such as NMHSs are urged to take action to maintain and improve stakeholders engagement with the aim of maximizing the socioeconomic benefits in the short- and long-term. Effective engagement offers opportunities to strengthen NMHSs and the weather enterprise as a whole. Evolving role of Members in this regard include:

- A. Fostering structured dialogue with the private sector.** Members' designated agencies such as NMHSs are urged to reach out proactively to set up a structured dialogue between public, private and academic sector stakeholders on issues of common interest. Regular dialogue would be more effective to improve mutual understanding and foster trustful relationships. In doing this, NMHSs may benefit from recognizing the opportunities where national objectives converge with those of the private sector.
- B. Putting in place appropriate legislation, business models, performing change management and building on core strengths.** In an environment where private sector engagement in meteorological and hydrological services is likely to continue in the decades ahead, NMHSs should continuously enhance the quality and dissemination of their products and services to allow them to thrive in an increasingly competitive environment. They need to adapt to ongoing changes in their business models, including through an enhanced national legislation that enables effective public-private engagement to leverage resources and build upon the strengths of the sectors. The increasing stress on the public budget in many States puts a lot of stress on the NMHSs ability to maintain and develop their infrastructure and service capacity. To cope with this, relevant national legislation should enable effective and equitable public-private engagement and foster 'win-win' solutions that meet the societal needs, including strengthening the authoritative role of NMHSs in the provision of services mandated by governments.
- C. Promoting uptake of WMO standards and guidance.** In fulfilment of their commitment as WMO Members, governments need to establish an effective oversight encompassing all national players providing information and services within the scope of the WMO business areas to ensure compliance with the WMO technical regulations (standards and recommended practices, procedures and specifications). This is the way to guarantee the success of the global standardization and assure the quality of data and products. Members are urged to promote awareness of and compliance with these standards, technical regulations and guidance among all stakeholders and introduce effective measures to correct cases of non-compliance.
- D. Fostering partnerships with civil society entities.** In an evolving world, with societal vulnerabilities to weather and climate risks growing, designated Member agencies such as NMHSs are strongly encouraged to engage with civil society to extend the outreach to communities and citizens in particular to enhance public understanding and response to warnings of natural hazards.
- E. Exploring new partnerships at national and cross-border nature.** In anticipation of growing diversity in multi-stakeholder weather, climate and hydrological service provision landscape, partnerships between national agencies or multi-national service delivery models through bilateral or multilateral agreements for certain services, should be encouraged.

Such models would leverage resources, improve efficiency and allow consistent and seamless services across national borders.

## **6. PUBLIC-PRIVATE ENGAGEMENT FOR CAPACITY DEVELOPMENT**

The UN sustainable development agenda 2030 makes a call to join-up efforts to better serve countries, and it creates a sense of urgency for country-level action. Most of the Sustainable Development Goals (SDGs) are linked to weather-, climate- and water-sensitive areas. Achieving them requires a holistic, multi-stakeholder public-private-academic engagement to develop and expand capability to help reduce the vulnerability of societies to weather and climate extremes. The goals set by the 2030 Agenda, the Sendai Framework for Disaster Risk Reduction and the Paris Agreement are mobilizing an increasing amount of investments, which effectiveness will highly depend on the new generation of weather and climate intelligence for informed decision-making at all levels.

While demands for information and service provision are increasing exponentially, many NMHSs in developing countries are confronted with major performance challenges. Closing this capacity gap requires scaling up collaboration and leveraging expertise and knowledge through strategic partnerships for increased impact.

Capacity development actions to ensure production of and access to high-quality weather, hydrological and climate information needed for sustainable development, will require not only a concerted effort of all stakeholders of the global weather enterprise, but also a mobilization of significant financial resources. This challenging task brings the development finance institutions (DFI) as another important partner in the enterprise. The growing flow of resources for building the capacity of hydrometeorological services including from the Green Climate Fund (GCF), Multilateral Development Banks, and bilateral partners require a more systematic and complementary approach for sustainable investments. Efforts need to focus not only on "more" but also "smarter" investments to increase capacity and relevance of NMHSs as key players in the country's sustainable development planning.

WMO and all stakeholders of weather enterprise including the DFIs, through open and constructive dialogue, should develop sustainable business models to ensure the best use of the available funding mechanisms for raising the capacity of developing countries in a sustainable manner. The interlinkages and interdependencies between the developing and developed world substantiate two main business cases for the enterprise: the business case of a sustainable global infrastructure to run global services, and the business case of enabling developing countries to enhance their local capacity for service delivery based on national needs and with the appropriate utilization of the global services available. A component of the capacity supporting local capabilities throughout the WMO community is currently, and will continue to be, tied to the ability of the growing private sector to create jobs, especially as the government sector shrinks in the face of contracting budgets. In this regard, a focus on the growth of the local workforce with expertise in the IT and science-to-service advancements will go hand-in-hand in the development and growth of local capabilities within the private sector that will be required to sustain the capacity development envisioned for all Members.

Development projects with public-private engagement have the potential to provide sustainable solutions for modernizing national infrastructure and enhancing the access to and the quality of the requisite services needed by the national economy and citizens. To enable such partnerships, it is necessary for both public and private sector stakeholders to build mutual trust, respect a code of ethics and strive to establish long-lasting engagement. Business models based on leveraging of the resources, cost- and revenue-sharing, should be further developed and promoted. The academic sector has also its important role in such partnerships by bringing innovation and training and education opportunities.

At the international level, WMO should work closely with the development financing institutions in designing projects that are based on prioritized national needs following the 'people first' principle, financially viable to ensure sustainability, and reinforcing the capability of the developing countries to be part of the international exchange of data and products through the WMO global systems.

Appendix: 1

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## APPENDIX

### GLOSSARY OF TERMS

*Note: The definition of terms related to public-private engagement is a work in progress. Thus, the definitions of terms below should be seen as related to the context of these Guidelines and not as universally applicable.*

**Academic Sector** means public or private higher education establishments awarding academic degrees, public or private non-profit research institutes whose primary mission is to pursue research. (Source: European Commission)

**Business sector<sup>16</sup>:**

- For-profit and commercial enterprises of any size, whether privately owned, public, or fully governed by governments;
- Corporate foundations and foundations that are directly funded and/or governed by business;
- Business associations, coalitions and alliances, including for example chambers of commerce, employers' associations, cooperatives, and industry and cross-industry initiatives where the participants are for-profit enterprises (Aside from the definition, employers' associations fall outside the scope of these Guidelines).

**Commercial sector:** Governmental or non-governmental organizations or individuals operating for commercial purposes. (Source: Resolution 40 (Cg-12), Annex 4)

**Data and services:** The terms "data and services" are understood as complementary and often overlapping. Their use and definition are expected to develop over time.

**Engagement** with the private sector (or business sector)<sup>17</sup> refers to any type of interaction with private/business entities, with different objectives, ranging from informal talks and discussions, to knowledge-exchange platforms, to full-fledged partnerships entailing funding or brand asset exchanges. These engagements may be implemented through different modalities, including but not limited to partnering, and may entail different levels of public exposure.

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<sup>16</sup> UNSDG Common Approach to Prospect Research and Due Diligence for Business Sector Partnerships, Annex 1.

<sup>17</sup> UNSDG Common Approach to Prospect Research and Due Diligence for Business Sector Partnerships, Annex 1.

**Private sector**<sup>18</sup> is the part of the economy that is run by individuals and companies and is not state controlled. Therefore, it encompasses all for-profit businesses that are not owned or operated by the government, and in some definitions, it may also include privately-owned organizations (e.g. family foundations or associations) or include influential individuals such as high net worth individuals.

**Public-private engagement:** Engagement by NMHSs (and/or other public agents) with the private sector in various modes in the production and delivery of weather, climate, hydrological, marine and related environmental information and services while respecting the public interest and the mandates of NMHSs and keeping in mind budgetary constraints.

**Public-private partnerships** are voluntary and collaborative relationships among various actors in both public (State) and private (non-State) sectors, in which all participants agree to work together to achieve a common goal or undertake specific tasks. Partnerships may serve various purposes, including advancing a cause, to implement normative standards or codes of conduct, or to share and coordinate resources and expertise. They may consist of a specific single activity, or may evolve into a set of actions or even an enduring alliance, building consensus and ownership with each collaborating organization and its stakeholders. While they vary considerably, such partnerships are typically established as structured cooperative efforts with a sharing of responsibilities as well as expertise, resources and other benefits.

**Weather enterprise:** A term used to describe the multitude of systems and entities participating in the production and provision of meteorological, climatological, hydrological, marine and related environmental information and services. For brevity, the name only refers to "weather"; however, the enterprise encompasses all business areas of WMO, including weather, climate and water; and all core activities – observations, modelling, data-processing and forecasting, and other services and related research. The weather enterprise includes public-sector entities (NMHSs and other governmental agencies), private-sector entities (such as equipment manufacturers, service-provider companies and private media companies) and academia, as well as civil society (community-based entities, NGOs, national meteorological societies, scientific associations, etc.). The weather enterprise has global, regional, national and local dimensions.

**Global weather enterprise** is a term describing the global dimension of the multi-national multi-stakeholder weather enterprise encompassing all contributors to the Earth system monitoring, prediction and service provision from public, private and academic sectors, as well as learned or civil society entities.

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## Resolution 12 (EC-72)

### RULES OF PROCEDURE FOR THE NON-CONSTITUENT BODIES ESTABLISHED BY Cg-18 AND EC-71

THE EXECUTIVE COUNCIL,

**Recalling** Resolution 11 (EC-71) — Rules of Procedure for the Constituent Bodies, which requested the Technical Coordination Committee to develop the rules of procedure for the Research Board and for other bodies of the Organization pursuant to such request in

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<sup>18</sup> UNSDG Common Approach to Prospect Research and Due Diligence for Business Sector Partnerships, Annex 1.



Resolution 75 (Cg-18) – Amendments to the General Regulations of the World Meteorological Organization,

**Having considered** the recommendation of the Technical Coordination Committee included in the report by its Chair (EC-72/INF. 2.5(2)),

**Adopts** the rules of procedure for the following bodies as per annexes to this Resolution:

1. Research Board, established by Resolution 8 (Cg-18) – Research Board,
2. Scientific Advisory Panel, established by Resolution 10 (Cg-18) – Scientific Advisory Panel,
3. Panels reporting to the Executive Council:
  - Climate Coordination Panel, established by Resolution 4 (EC-71) - Climate Coordination Panel,
  - Hydrological Coordination Panel, established by Resolution 5 (EC-71) – Hydrological Coordination Panel,
  - Panel of Experts on Polar and High Mountain Observations, Research and Services, established by Resolution 6 (EC-71) – Executive Council Panel of Experts on Polar and High-mountain Observations, Research and Services,
  - Capacity Development Panel, established by Resolution 7 (EC-71) – Capacity Development Panel;

**Requests** the above bodies to conform to the rules of procedure in the conduct of their business;

**Requests** the Secretary-General to publish the above rules of procedure;

**Requests** the Technical Coordination Committee to keep under review the rules of procedure.

## **Annex 1 to Resolution 12 (EC-72)**

### **RULES OF PROCEDURE FOR THE RESEARCH BOARD**

#### **1. General**

1.1 The rules of procedure for the Research Board are adopted to provide procedural arrangements for the Research Board and its subsidiary bodies which are complementary to the Rules of Procedure of the constituent bodies (technical commissions and regional associations).

1.2 These rules of procedure are adopted by the Executive Council under the authority of the Convention and General Regulations of the World Meteorological Organization (WMO). They may be amended by the Executive Council as needed. In the event of any conflict between the provisions of these rules of procedure and any provisions of the Convention or of the General Regulations, the text of the latter two documents shall prevail.

## **2. Purpose, scope and terms of reference of the Research Board**

2.1 The main purpose of the Research Board is to convene, organize and motivate, in an inclusive, flexible and forward-looking way, the scientific and technical community around the three research objectives of the WMO Strategic Plan: (a) Advance scientific knowledge of the Earth system; (b) Enhance the science-for-service value chain ensuring scientific and technological advances to improve predictive capabilities; (c) Advance policy-relevant science.

2.2 The scope of the Research Board includes: (a) all elements of the value chain, from discovery science to science-based decision making; (b) WMO Member's needs in terms of science and technological advancements; (c) facilitating Members' access to advancements in scientific and technological capabilities; (d) increasing the research capabilities of less developed countries and SIDS.

2.3 The terms of reference of the Research Board, as approved by Congress in Resolution 8 (Cg-18), are provided in the appendix to the present rules of procedure.

2.4 The Research Board, in deciding on its work programmes and activities, shall adhere to its terms of reference. The Research Board should keep its terms of reference under review and may propose amendments to ensure that they are up to date. Such amendments should be submitted for approval by Congress or by the Executive Council under delegated authority.

## **3. Chair and Vice-chair**

3.1 The Research Board shall propose candidates for Chair and Vice-chair from among its members who are not acting as representatives of other bodies or organizations for consideration of the Executive Council.

3.2 The term of office of the Chair and Vice-chair should normally be two years with possibility of renewal for a second 2-year term.

3.3 The duties of the Chair of the Research Board shall be:

- (a) To develop the agenda and preside over meetings of the Research Board;
- (b) To facilitate and coordinate the activities of the Research Board and the multi-disciplinary activities across the research programmes;
- (c) To represent the Research Board on the Technical Coordination Committee (TCC).

3.4 The duties of the Vice-chair shall be:

- (a) To support the Chair in all the duties specified above, and to act on behalf of the Chair when delegated or when the Chair is not available to carry out his/her duties;
- (b) To coordinate subject matters in a defined domain of expertise pertinent to the scope and terms of reference of the Research Board, as decided by the Chair.

3.5 In the case that the Chair and/or the Vice-chair of the Research Board resigns or is not able to carry out the functions of the office, a replacement should be arranged as soon as possible in accordance with 3.1.

#### **4. Composition**

4.1 The Research Board composition is defined in the terms of reference (provided in the Annex). The Research Board is composed of around 25 scientific, technological and innovation experts in the fields covered by the terms of reference of the Research Board.

4.2 The Chairs of the oversight bodies of the WMO-sponsored and co-sponsored research programmes should be members of the Research Board.

Note: Current WMO research programmes are the World Weather Research Programme (WWRP), the World Climate Research Programme (WCRP), co-sponsored by WMO, the Intergovernmental Oceanographic Commission (IOC/UNESCO) and the International Science Council (ISC), and the Global Atmosphere Watch Programme (GAW). Each programme is overseen by a respective Joint Scientific (Steering) Committee providing an overall scientific direction of the programme.

4.3 The Executive Council appoints the members based on a proposal by the Chair and criteria defined in the terms of reference of the Research Board.

4.4 The Chair, in consultation with the presidents of regional associations, the presidents of technical commissions, the Members hosting the World Meteorological Centres, co-sponsors of the research programmes and relevant partner organizations, and with the assistance of the Secretary-General, prepares a proposal for membership that maximizes the range of expertise, geographical and gender balance and inclusiveness.

4.5 Experts should be chosen from the WMO Expert Network and concurrence received from either the respective Permanent Representative or appropriate authorities of the international organizations, as appropriate.

4.6 Scientific/technical experts selected to serve on the Research Board or its subsidiary bodies should participate in their personal, expert capacity and not acting as representatives of their nominators.

#### **5. Management Group**

5.1 The Research Board should establish a Management Group with the following composition: the Chair and the Vice-chair of the Research Board serving as Chair and Vice-chair of the Management Group, the chairs of the WMO-sponsored and co-sponsored research programmes and other subsidiary bodies as appropriate, the scientific representatives of the Regional Associations, the Research Board members representing the two Technical Commissions, the representatives of any co-sponsors of the research programmes.

5.2 The Chair may invite additional experts to the Management Group, as necessary, in accordance with rule 4.5.

5.3 The Management Group should coordinate all activities between the sessions of the Research Board, including taking any necessary decisions.

#### **6. Subsidiary bodies**

6.1 The building blocks of the Research Board are the Steering Committees of WMO-sponsored and co-sponsored research programmes. The Chair and Vice-chair of the Research Board and the chairs of the Steering Committees shall maintain regular communication between the Research Board meetings to ensure a high-level of coordination between the activities of the research programmes.

Note: Working Group on Numerical Experimentation (WGNE) is a subsidiary body of the Research Board.

6.2 The Research Board may establish additional subsidiary bodies to carry out certain tasks of its work programme, as necessary. As a principle, the Research Board should keep the number of subsidiary bodies to a necessary minimum with due consideration of the available financial and human resources.

6.3 The terms of reference of each subsidiary body should be established by the Research Board and should be within its overall scope. For subsidiary bodies that fulfil a cross-cutting function for the research programmes, the recommendations of steering committees will be given particular weight in the definition of the terms of reference. The Research Board appoints Chairs and Vice-chairs of subsidiary bodies.

6.4 The Research Board appoints the Chairs and Vice-chairs of the steering committees of the WMO research programmes upon recommendations by the steering committees and the Management Group, and in consultation with the Secretary-General. In the case of co-sponsored programmes, the appointment shall be as specified in the sponsorship agreement.

6.5 The Research Board appoints members of the steering committees of the WMO research programmes upon recommendation by the chairs of the steering committees. The term of members is four years and can be renewed. In the case of co-sponsored programmes, the appointment shall be as specified in the sponsorship agreement.

6.6 Experts should be chosen from the WMO Expert Network and concurrence received from either the respective Permanent Representative or appropriate authorities of the international organizations, as appropriate. The Research Board shall keep the WMO Expert Network up to date in relation to its subsidiary bodies.

6.7 Types of subsidiary bodies

(a) Steering committee

- (i) Any research programme established by the WMO is led by a steering committee with the responsibility as an expert body to provide the overall scientific direction of the programme and carry out tasks related to the terms of reference of the Research Board: to gear up the respective networks, develop and review science and implementation plans, review and assess the development of all elements of the programme, facilitate and prioritize research and development activities in their field of responsibility, facilitate the exchange of information among scientists participating in the programme, and collaborate with the broader scientific community.
- (ii) The steering committees may establish related necessary time-limited subsidiary bodies, such as working groups, projects, task forces or similar. These shall be specified in the research programme implementation plans and reviewed and, if appropriate, be discontinued at the end of every intersessional period. Modifications to the implementation plans shall be presented to the Research Board for approval. Selection of the Chairs and members for the time-limited subsidiary bodies is the responsibility of the scientific Steering Committees of the research programmes.

(b) Expert Network

- (i) A database for a common Expert Network should be established and maintained by the Secretariat and become an integral part of the WMO community platform.
- (ii) Scientific/Technical experts nominated in accordance with rule 6 above should be included in the Expert Network.

- (iii) Experts in the Expert Network should be grouped in Communities of Practice (CoP) in accordance with their qualification and competence.
- (iv) Experts in the Expert Network may be selected to work on or in groups. Such a selection should be notified to the respective Permanent Representative, Hydrological Advisor or Head of international organization to which the expert belongs.

(c) Project steering bodies

Long-term and short-term projects could be established by the Research Board in order to address specific scientific or technological challenges and to deliver scientific or technological advancements. The projects could be proposed by one or more research programmes. The Research Board shall propose projects, which need financial support from Members, to the Executive Council for endorsement.

(d) Task Forces

Task forces may be established by the Research Board during the intersessional period, to accelerate work on a specific urgent and high priority task that does not fall under the responsibility of an individual pre-existing subsidiary body. Task forces may be established jointly with Technical Commissions or other bodies.

## **7. Coordination with Technical Commissions and Regional Associations**

7.1 The Research Board, the two Technical Commissions and Regional Associations will plan joint activities in order to improve seamless Earth system predictions, to enhance the impact of Earth system observations and to foster innovation for weather, climate, water and environmental services.

7.2 The following bodies could be established:

- (a) Joint subsidiary bodies, standing committees or study groups, may be established on proposal by the Research Board and one or more commissions to work on cross-cutting subjects.
- (b) The establishment of joint subsidiary bodies should be approved by the Executive Council upon recommendation by the Presidents/Chairs of the bodies concerned.
- (c) Joint subsidiary bodies should elect Co-Chairs representing each of the collaborating parent bodies.

7.3 The Research Board and Regional Associations may establish joint initiatives (i.e., projects, demonstration events, pilots) in order to promote innovation at regional level on weather, climate, water and related environmental aspects.

## **8. Sessions**

8.1 Sessions of the Research Board should normally be held every year (face-to-face sessions every 2 years). The Chair of the Research Board should establish the dates for the sessions and propose the related agenda.

8.2 The Chair of the Research Board may invite additional experts to the Research Board session, as necessary.

8.3 The default venue for the Research Board sessions should be the WMO headquarters in Geneva, Switzerland. However, if a Member expresses interest to host a session of the Research Board, a formal communication should be sent to the WMO Secretariat.

8.4 The provisional agenda and an explanatory memorandum summarizing the issues to be discussed should also be sent to the addressees of the notification at least 45 days before the date of opening.

8.5 The documents for the session should be made available as soon as possible, and preferably not later than 15 days before the opening of the session.

8.6 The quorum for a meeting shall be a simple majority of the members of the Board. Decisions of the Research Board should be determined preferably by consensus. If consensus cannot be achieved, a vote may be conducted in accordance with the General Regulations. Decisions shall be determined by a simple majority of the votes cast for and against.

8.7 Reports of sessions of the Research Board should be prepared and made available to members and bodies concerned soon after the session.

## **9. Assistance by the Secretariat**

9.1 The Secretariat should carry out the administrative work, including preparation of documents and technical work to the extent compatible with its functions. Scientific/Technical experts in the Secretariat shall be assigned by the Secretary-General to participate in a consultative capacity in the work of each Steering Committee and to carry out such scientific/technical studies as the Research Board may request.

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## **APPENDIX. TERMS OF REFERENCE OF THE RESEARCH BOARD**

(As defined in Resolution 8 (Cg-18))

*Will be added at the stage of publishing.*

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## **Annex 2 to Resolution 12 (EC-72)**

### **RULES OF PROCEDURE FOR THE SCIENTIFIC ADVISORY PANEL**

#### **1. General**

1.1 The Scientific Advisory Panel has been established by the eighteenth World Meteorological Congress through Resolution 10 (Cg-18).

1.2. The rules of procedure for the Scientific Advisory Panel are adopted to provide standardized procedural arrangements for the Panel.

1.3. These rules of procedure are adopted by the Executive Council under the authority of the Convention and General Regulations of the World Meteorological Organization. They may be amended by the Executive Council as needed. In the event of any conflict between the

provisions of these rules of procedure and any provisions of the Convention or of the General Regulations, the text of the latter two documents shall prevail.

## **2. Purpose, scope and terms of reference of the Scientific Advisory Panel**

2.1 The main purpose of the Scientific Advisory Panel is: to provide forward-looking strategic advice on areas in which new technological and scientific advancement would lead to new applications related to WMO core activities; to promote the global standing and visibility of WMO as a leading scientific organization in the fields of weather, climate, water and related environmental and social sciences; to promote science vision, and its downstream trends, with WMO and among its Members as the primary driver for innovation, understanding and the development of new and improved weather, climate, water, ocean and related environmental services and know-how.

2.2 The terms of reference of the Scientific Advisory Panel, as approved by Congress in Resolution 10 (Cg-18), are provided in the Annex to the present rules of procedure.

## **3. Composition**

3.1 The Scientific Advisory Panel is composed of a maximum of fifteen independent leading internationally recognized experts coming from the fields of weather, climate, water, ocean and related environmental and social sciences.

3.2 The Executive Council appoints the members of the Panel taking into account criteria defined in the terms of reference, such as regional and gender balance, and balancing the representation of academia, research bodies, the private sector and user communities.

3.3 The term of engagement of the members shall be four years with possibility of renewal for a second term.

## **4. Chair and Vice-chair**

4.1 The Scientific Advisory Panel shall elect its Chair and Vice-chair among its members. If more than one candidate is proposed, election shall be made by simple majority vote. The election of the Vice-chair follows the election of the Chair and should take place at the session of the Panel. In exceptional circumstances when a face-to-face meeting is not possible, the election should take place by correspondence through a process defined by the Secretariat. The presence of a simple majority of the members serving on the Panel shall constitute a quorum for the purposes of the election.

4.2 Chair and Vice-chair serve one 4-year term with possibility of renewal for a second term.

4.3 The election of the Chair and the Vice-chair should take into account rotation between the regions and gender.

4.4 In the absence of the Chair, the Vice-chair shall act as the Chair; in the absence of both Chair and Vice-chair the members of the Panel should elect from among those members present an acting Chair for that particular session.

## **5. Sessions and reports**

5.1 Sessions of the Scientific Advisory Panel should normally be held every year, either face-to-face or by videoconference. The Chair and Vice-chair should establish the dates for the sessions and propose the related agenda. At least 30 days' advance notice shall be given for each session.

5.2 The default venue for the Panel sessions should be the WMO headquarters in Geneva, Switzerland. However, if a member of the Panel expresses an interest to host a session, a formal communication should be sent to the Secretary-General.

5.3 The Chair shall prepare a session report and report to the Congress and the Executive Council.

5.4 The Scientific Advisory Panel reports to the Congress every four years and to the Executive Council every second year on innovative elements that could be considered in the development of the WMO Strategic Plan.

## **6. Intersessional activities**

6.1 Between sessions the SAP will continue to provide advice to all WMO technical, scientific and policy bodies on technical, scientific, innovative breakthroughs, and give support to key activities, with a main focus on:

- (a) Providing insights on new technological and scientific advances that will lead to new applications related to WMO core activities,
- (b) Enhancing the role of WMO as a leading scientific organization and facilitator of international cooperation in weather, climate, water, ocean, environmental and social sciences,
- (c) Promoting science vision and innovation, and its downstream trends for WMO and its Members,
- (d) Engaging in activities that help to increase the visibility of WMO among different stakeholders at the national, regional and international level.

6.2 The activities of the Panel will be mainly conducted through emails, videoconferences, conference side sessions; if needed, in-person meetings could be considered.



6.3 Assistance to the Panel sessions and activities will be provided by the WMO Secretariat.

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### **Annex 3 to Resolution 12 (EC-72)**

## **RULES OF PROCEDURE FOR THE PANELS REPORTING TO THE EXECUTIVE COUNCIL**

### **COMMON PROVISIONS**

#### **1. General**

1.1 These rules of procedure are adopted to provide procedural arrangements that are complementary to the rules of procedure for the constituent bodies.

1.2 These rules of procedure are adopted by the Executive Council under the authority of the Convention and General Regulations of the World Meteorological Organization. They may be amended by the Executive Council as needed. In the event of any conflict between the provisions of these rules of procedure and any provisions of the Convention or of the General Regulations, the text of the latter two documents shall prevail.

#### **2. Chair and Vice-chair**

2.1 Without prejudice to the procedure established in the terms of reference, the selection or designation of the Chair and the Vice-chair of the panel should be made taking into account rotation between the regions and on the understanding that the Chair and the Vice-chair should normally come from different regions.

2.2 When the Panel is chaired by two Co-Chairs, such Co-Chairs should be considered as equivalent to Chair and Vice-chair, alternating in the function as agreed by the panel.

2.3 Unless otherwise specified in the terms of reference, the Chair and Vice-chair of the panel should normally serve in their office for up to two consecutive terms.

2.4 The duties of the Chair shall be:

- (a) To preside over meetings;
- (b) To guide and coordinate the activities of the Panel and its subsidiary bodies between meetings, in consultation with the Secretariat and other bodies as needed;
- (c) To carry out such specific duties as are prescribed by decisions of Congress and the Executive Council and by the Regulations of the Organization;
- (d) To ensure that the work programme, activities and recommendations of the Panel are in accordance with the provisions of the Convention, decisions of Congress and the Executive Council and the Regulations of the Organization;
- (e) To submit reports to the Executive Council and Congress at their regular meetings on the activities of the Panel;

- (f) To present the views of the Panel at sessions of the Executive Council and Congress and other bodies which he/she may be called upon to attend;
- (g) To act, on behalf of the Panel, on matters requiring urgent decisions.

2.5 The duties of the Vice-chair shall be to act on behalf of the Chair when delegated by the Chair or when the Chair is not available to carry out his/her duties.

2.6 If the Chair or the Vice-chair resigns or is not able to carry out the functions of the office, a replacement should be arranged as soon as possible following relevant procedures.

### **3. Meetings**

3.1 Frequency: The Panel shall normally meet once per year, either face-to-face or by videoconference. The Panel shall make effective use of electronic forms for coordination and collaboration.

3.2 Location: The default venue for face-to-face meetings of the Panel shall normally be the WMO headquarters in Geneva, Switzerland.

3.3 Notification: Notification of the date and place of a meeting of the Panel should be distributed by the Secretary-General 45 days before the meeting, jointly with the provisional agenda and, as necessary, an explanatory memorandum summarizing the items to be discussed.

3.4 Languages: The working languages for meetings of the Panel shall be determined by the Secretary-General, in consultation with the Chair of the Panel, among the official languages as appropriate, with regard to working languages of members participating in the meetings.

3.5 Agenda: The provisional agenda for a meeting of the Panel should be prepared by the Chair in consultation with the Secretary-General and should normally include:

- (a) Report by the Chair on the activities of the Panel;
- (b) Items the inclusion of which has been requested by Congress or the Executive Council;
- (c) Items submitted by members of the Panel, other bodies, partner organizations or the Secretariat;
- (d) Review of the status of recommendations addressed to Congress, the Executive Council or other bodies;
- (e) Work programme.

3.6 Documentation: The documents for the meeting should be made available as soon as possible, and preferably not later than 15 days before the opening of the meeting.

3.7 Records: As soon as possible after each meeting of the Panel, the Secretariat should submit a summary report to the Chair, following the consent of whom the summary report shall be circulated to the members of the Panel for approval and publication by the Secretariat.

3.8 Decisions: Decisions of meetings of the Panel should be recorded in the form of agreed conclusions (when concerning the Panel itself) and recommendations. Such

recommendations (when addressed to other bodies of the Organization) shall require approval by the relevant body before implementation.

3.9 The Panel shall reach conclusions by consensus. Where no such consensus is reached, the fact shall be stated in the report unless all members present agree otherwise.

3.10 Invited participants and observers: The Chair of the Panel may invite experts and/or representatives from partner organizations to attend meetings of the Panel as observers.

#### **4. Subsidiary bodies**

4.1 The Panel may establish time-bound substructures as needed for the discharge of specific tasks during the period between meetings.

4.2 In particular, the panel may assign specific or urgent tasks within its mandate to subsets of its members organized into task teams. Such task teams shall have a defined scope, membership, deliverables, deadlines and a lead responsible to the Panel for the completion of the task. Upon completion of the task, the task teams shall normally be terminated but, if need be, their mandate may be extended, or they may be re-established for a fixed period. When the scope of a task team partly overlaps with, or is of interest to, another body, the necessary coordination will be ensured by the lead of the task team, with the support of the Secretariat.

#### **5. Coordination with other bodies**

5.1 The Panel shall ensure effective coordination with other bodies as mandated by Congress or the Executive Council. Such coordination shall be ensured by the Chair and members of the Panel and the Secretariat through mutual representation in other bodies, as the case may be, sharing of information and documentation, consultations and other means.

#### **6. Assistance by the Secretariat**

6.1 As required by the Panel, the Secretariat should carry out the administrative work, including preparation of documents, and technical work to the extent compatible with its functions. Technical experts in the Secretariat shall be assigned by the Secretary-General to participate in a consultative capacity in the work of the Panel and to carry out such technical studies as the Panel may request.

### **PROVISIONS SPECIFIC TO INDIVIDUAL PANELS**

*[Based on the terms of reference adopted by EC-71, the following provisions are specific to individual panels.]*

#### **Climate Coordination Panel**

##### **2. Chair and Vice-chair**

2.1 As stipulated in Resolution 4 (EC-71) — Climate Coordination Panel, the Panel is chaired by a Vice-president of WMO. The Panel Chair is designated by the President of WMO, who may also designate a Vice-chair or Co-Chair(s), and who may also serve as chairperson. Selection or designation of the Chair and the Vice-chair of the Panel should be made taking

into account rotation among regions and on the understanding that the Chair and the Vice-chair should normally come from different regions.

2.2 The Chair and Vice-chair of the panel should normally serve in their office for up to two consecutive terms.

[...]

#### **4. Subsidiary bodies**

4.1 The Partner Advisory Committee of the Global Framework for Climate Services (GFCS PAC), originally established at the first session of the Intergovernmental Board on Climate Services, is continued under the remit of the Panel (Resolution 21 (Cg-18)) – Implementation of the Global Framework for Climate Services, the composition of which includes GFCS PAC representation (Resolution 4 (EC-71)) – Climate Coordination Panel.

4.2 The membership of the current mechanism for WMO contributions to the GFCS (Decision 16 (EC-68)) – Country-focused Results-based Framework and Mechanism for WMO Contributions to the Global Framework for Climate Services, for supporting country-level service delivery by Members is also subsumed into the Panel, at the same time the Panel is assigned an enlarged scope that also encompasses the provision of services to high-level climate-related policy processes (Resolution 20 (Cg-18)) – WMO Contributions to the Provision of Climate Information and Services in Support of Policy and Decision-making.

4.3 The GFCS PAC, mechanism for WMO contributions to the GFCS, and representatives of Members and international organizations engaged in United Nations Framework Convention on Climate Change policy processes, have been convened separately under the auspices of the Panel to inform the formalization of subsidiary bodies at the Panel's first meeting.

### **Hydrological Coordination Panel**

#### **2. Chair and Vice-chair**

2.1 The terms of reference of the Hydrological Coordination Panel, as adopted in Resolution 5 (EC-71), establish that "The Hydrological Coordination Panel shall be chaired by the Chair of the Hydrological Assembly. The Panel shall elect a Vice-chair from among the Vice-president(s) of technical commissions or EC members."

2.2 Without prejudice to the procedure established in the terms of reference, the selection or designation of the Chair and the Vice-chair of the Panel should be made taking into account rotation between the regions and on the understanding that the Chair and the Vice-chair should normally come from different regions.

[...]

2.5 In case the Chair resigns or is not able to carry out the functions of the office, the Vice-chair shall serve as acting Chair for a period not exceeding the remainder of the term of office of the Chair. The Vice-chair, acting as Chair, shall have the same powers and duties as the Chair.

2.6 In case the Vice-chair resigns or is not able to carry out the functions of the office, a replacement should be arranged as soon as possible following relevant procedures.

**2bis. Duration of membership** *(overall numbering to be updated)*

2bis.7 For the ex-officio members of the Panel, the term of membership in the HCP is for as long as they held the position which justified their membership.

2bis.8 For the representatives of other WMO bodies or external partners, the term of membership will be determined by the respective WMO body or partner.

2bis.9 The residual flexibility in the membership of the Panel should be used to ensure a better geographical and gender balance and to engage partner organizations, such as UNESCO-IHP, IAHS, GWP, UNECE, FAO, UNEP, IAHR, UNDRR.

**Panel of Experts on Polar and High-mountain Observations, Research and Services****2. Chair and Vice-chair**

2.1 The Panel is chaired by two Co-Chairs who shall be nominated from the Panel members, at least one being a member of the Executive Council, and representing the Northern and Southern Hemispheres respectively, as identified in the terms of reference annexed to Resolution 6 (EC-71) – Executive Council Panel of Experts on Polar and High-mountain Observations, Research and Services.

2.2 As the Panel is chaired by two Co-Chairs, such Co-Chairs are considered as equivalent to Chair and Vice-chair, alternating in the function as agreed by the Panel.

**4. Subsidiary bodies**

4.1 The Panel may establish time-bound substructures as needed for the discharge of specific tasks during the period between meetings, as identified in the terms of reference annexed to Resolution 6 (EC-71).

4.2 The Global Cryosphere Watch (GCW) Steering Group works under the remit of the Panel, during the pre-operational phase of GCW, with terms of reference annexed to Resolution 6 (EC-71).

**Capacity Development Panel****2bis. Membership** *(overall numbering to be updated)*

2bis.1 In addition to the Chair, the Panel will consist of a maximum of twelve core members, each of whom will sit in a personal capacity and will serve for a period of four years.

2bis.2 The remaining ten core members will be appointed by the Executive Council, based on the nominations of Permanent Representatives, on the basis of their professional expertise in institutional infrastructure, procedural and human resources capacity development in the fields of meteorology, climatology, hydrology, institutional, legal and education and training matters, taking into account the need for the Panel to be balanced across the different components of capacity development to have an appropriate technical, geographical and gender balance in considering the most highly qualified candidates.

## Resolution 13 (EC-72)

### RULES OF PROCEDURE FOR THE EXECUTIVE COUNCIL

THE EXECUTIVE COUNCIL,

**Recalling** Resolution 75 (Cg-18) – Amendments to the General Regulations of the World Meteorological Organization and Resolution 11 (EC-71) – Rules of Procedure for the Constituent Bodies, which requested the Policy Advisory Committee to review and update the Rules of Procedure for the Executive Council (2012 edition),

**Having examined** the proposed amendments to the Rules of Procedure for the Executive Council recommended by the Policy Advisory Committee,

**Adopts** the amended Rules of Procedure for the Executive Council as provided in the annex to the present resolution,

**Requests** the Policy Advisory Committee to keep these Rules of Procedure under review and submit updates as necessary, including provisions that may be needed for conduct of remote sessions of the Council and other provisions for addressing relevant Joint Inspection Unit (JIU) recommendations based on the outcomes of examination and in accordance with the UN Common System standards.

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Note: This resolution replaces Resolution 18 (EC-LX) – Amendment to the Rules of Procedure of the Executive Council, Resolution 13 (EC-LXIII) – Amendments to the Rules of Procedure of the Executive Council and Resolution 22 (EC-64) – Selection process of the External Auditor, which are no longer in force.

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### Annex to Resolution 13 (EC-72)

#### RULES OF PROCEDURE FOR THE EXECUTIVE COUNCIL

2020 edition

WMO No.- xxxx

#### PUBLICATION REVISION TRACK RECORD

<i>Date</i>	<i>Section</i>	<i>Purpose of amendment</i>	<i>Proposed by</i>	<i>Approved by</i>
3.X.2020	All	Editorial changes Numbers of General Regulations as per 2019 edition Consolidation of procedures approved and practices followed by EC	PAC	Resolution 13 (EC-72)

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*[...to be inserted by Secretariat at the stage of publishing]*

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### 1. GENERAL

These rules, established in accordance with Regulation 3, are adopted by the Executive Council under the authority of the Convention and of the General Regulations of the World Meteorological Organization. In the event of any conflict between any provision of these rules and any provision of the Convention or of the General Regulations, the texts of the latter two documents shall prevail.

Note: In these rules of procedure, "Regulation" means "regulation or provision of the WMO General Regulations", unless specified otherwise. Provisions of General Regulations quoted in these procedures are in italics.

### 2. CONDUCT OF SESSIONS

2.1 The sessions should be conducted in accordance with provisions of Regulations 119-129.

2.2 The provisional agenda for a session of the Executive Council shall be prepared by the President in consultation with the Secretary-General in accordance with Regulations 126, 127 and 128.

2.3 Each member or invited organization shall notify the Secretary-General of the names of the persons who will attend the session by virtue of Regulations 113, 114 and 115, or who will accompany them by virtue of Regulation 124. This notification should be conveyed by a letter signed by the member or by a person authorized to do so and, in the case of an international organization, by the responsible officer.

2.4 The sessions should normally be conducted in plenary. Members or their alternates should be present during plenary meetings to ensure required majority quorum for decision-making at any time.

2.5 Confidential matters should be discussed in-camera confined to the members of the Council or their duly designated alternates, to such additional persons as may be agreed by the President and to the Secretariat staff designated by the Secretary-General.

2.6 Committees for the session may be established for detailed consideration of specific documents.

2.7 Selection Committees are established to make recommendation regarding the appointment of the External Auditor, candidates for the IMO Prize and other WMO awards, membership of the WMO Audit Committee, the Scientific Advisory Panel, and other expert bodies reporting to the Executive Council when specific selection procedures apply.

2.8 Recommendations from constituent bodies and other bodies established by Congress or the Executive Council of a strategic and policy nature should normally be submitted to the Executive Council after consideration by the Policy Advisory Committee (PAC), accompanied by a draft decision. Recommendations from constituent bodies and other

bodies established by Congress or the Executive Council on technical matters should normally be submitted after an analytical review by the Technical Coordination Committee (TCC), accompanied by a draft decision. Adoption of such decisions would normally not require further discussion by the Council unless discussion is requested by a member of the Council.

2.9 The Secretary-General designates senior officials of the Secretariat to act in the capacity of Secretary in plenary meetings and committees.

### 3. INVITATIONS TO ATTEND SESSIONS OR PARTICULAR MEETINGS

3.1 Under the provisions of Article 19 (d) of the Convention and Regulation 125, the presidents of technical commissions and the hydrological advisers to the presidents of regional associations should be invited to participate in a session of the Executive Council. The Chair of the Research Board should be invited as well.

3.2 Depending on the items on the agenda, the chairs of the WMO Audit Committee and other bodies established by Congress or the Executive Council may be invited to participate in the session at the discretion of the President.

3.3 Members of the Council are encouraged to include hydrological advisers in their delegations.

3.4 Individual experts or representatives of international organizations may be invited by the President, through the Secretary-General, to participate as observers in a session or meeting of the Council in accordance with Regulation 18. In the case of an invitation to an expert, not previously designated, to attend a session or a meeting of the Council, the invitation shall require the prior concurrence of the Permanent Representative of the Member where the expert lives. In the case of an invitation to an expert from the United Nations or another international organization with which the Organization has concluded arrangements or agreements, the invitation shall require the prior concurrence of the respective organization.

3.5 Pursuant to Resolution 40 (Cg-XVI), representatives of WMO Members formally designated by the Permanent Representatives or Permanent Missions in Geneva can attend the sessions of the Council and its relevant subsidiary bodies, without the right to take the floor and at their own cost.

### 4. DOCUMENTS AND RECORDS

4.1 The nonconfidential documentation (decision documents, information documents, presentations and daily journals) are made available through the public WMO website.

4.2 Confidential documents should be distributed only to the members of the Council or their designated alternate in case of absence of members. Confidential documents are distributed either through the password protected section on the session website or in sealed envelopes.

4.3 Approved documents posted on the session website constitute the provisional report of the session. In accordance with Regulation 95 (a), adopted resolutions, decisions and recommendations are recorded in the final report of the session and after the session published by the Secretariat. Information documents and statements are also included in the final report.



4.4 When requested from the plenary, in accordance with Regulation 95 (b), summarized minutes of the discussion at plenary or in camera meetings will be prepared after the session and adopted by correspondence.

## 5. INDICATION OF PREFERENCE

5.1 When the Executive Council has to select a person from two or more candidates for a post or office, or for the award of a distinction, it will indicate a preference amongst the candidates submitted by secret ballot, in accordance with the procedure described in Regulation 151, substituting the words "member of the Executive Council" for "principal delegate of the Members" and "Executive Council" for "Congress", and the following provision being inserted at the end of subparagraph (a): "If during the separate vote of preference all the candidates receive an equal number of votes, one of them shall be eliminated by the drawing of lots."

5.2 When the Executive Council has to select two or more candidates, the same method shall be applied with the following modifications: each member shall nominate as many candidates as there are posts to fill or distinctions to award, and the procedure shall cease when the number of candidates remaining is equal to the number of candidates to be selected; a candidate who, in any stage of the proceedings, obtains two thirds of the votes for and against shall be appointed or selected and the procedure shall continue only if there are still posts to fill or distinctions to award.

## 6. DESIGNATION OF ACTING MEMBERS

Note: Tenth Congress reiterated the decision of Ninth Congress that the word "designated" in Regulation 116 of the General Regulations should continue to mean "elected" until Congress decides otherwise (paragraph 10.3.2 of the general summary of the abridged report of Tenth Congress).

### 6.1 Designation during session

6.1.1 For the designation, during a session of the Executive Council, of an acting member in accordance with Regulation 116, the Council shall establish a list of eligible candidates fulfilling the conditions of Article 13 (c) of the Convention. It will be confined to those eligible candidates coming from the same Region as the outgoing member proposed by the president of the regional association concerned after consultation with the Members of the same Region within 30 days or as long as possible after the announcement of the vacancy.

6.1.2 When there is only one candidate, the candidate shall be declared elected.

6.1.3 When the list of candidates is complete, the candidate is chosen during a meeting in camera in accordance with the indication of preference procedure (see Rule 5.1 and 5.2), with the exception that this designation of an acting member will be by a simple majority as described in Regulation 47 (b).

### 6.2 Designation by correspondence

6.2.1 The election of an acting member in accordance with Regulation 116 may also be conducted by correspondence if the President of the Organization considers it necessary after consulting the members of the Executive Council and if the vacancy has occurred at least 130 days before the next session of the Executive Council.

6.2.2 In this case, the list of candidates fulfilling the conditions of Article 13 (c) of the Convention and Regulation 16 shall be confined to those eligible candidates coming from the same Region as the outgoing member proposed by the president of the regional association

concerned after consultation with the Members of the same Region within 30 days of the announcement of the vacancy.

6.2.3 The Secretary-General shall verify that all persons whose names have been submitted are willing to be considered as candidates. For this purpose, a period of 20 days shall be allocated, after which the Secretary-General establishes a final list.

6.2.4 When there is only one such candidate, the candidate shall be declared elected.

6.2.5 If the list includes several names, a secret ballot among the members of the Executive Council by correspondence shall be organized. Regulations 54 (a), 56 and 65 shall apply. The candidate who obtains a simple majority as described in Regulation 47 (b) shall be elected as an acting member of the Executive Council. If the designation is not made at the first ballot the decision shall be left to the next session of the Executive Council.

## **7. INTERNATIONAL METEOROLOGICAL ORGANIZATION (IMO) PRIZE**

7.1 The IMO Prize shall be awarded annually by the Executive Council for outstanding work in the field of meteorology or in any other field referred to in Article 2 of the Convention.

7.2 The Secretary-General shall send to all Members of WMO a circular letter informing them of the Executive Council decisions concerning the IMO Prize and inviting them to submit the names of all potential recipients, accompanied in each case by a statement of about one page on the qualifications and merits of each candidate. A curriculum vitae and a list of publications should be attached to the statement.

7.3 The number of candidates submitted by a Member for a given Prize should not exceed three.

7.4 A candidature submitted for a given Prize shall normally be retained on the list of candidates for subsequent Prizes during that financial period.

7.5 Any candidature received after the opening of a session of the Executive Council shall not be considered at that session, but shall be taken into consideration for all subsequent Prizes during that financial period.

7.6 The names of candidates presented by Members will be referred to a Selection Committee if they do not fall into either of the following categories:

- (a) Members of the Executive Council who, as electors, are not eligible for the award during their term of office as members of the Executive Council;
- (b) Candidates who are no longer alive on the date of their nomination. The award may nevertheless be made posthumously to a candidate who dies between the date of nomination and the award of the Prize.

7.7 A Selection Committee consisting of four members of the Executive Council shall be appointed at each session of the Executive Council to prepare, in readiness for the following session of the Executive Council, a list of not more than five names for consideration by the Executive Council, which shall make the final selection by secret ballot. The Selection Committee shall change one member each year.

7.8 A list of candidates designated by the Selection Committee shall be distributed under confidential cover to each member of the Executive Council at least 24 hours before the final decision is taken. The list shall be accompanied by statements on the qualifications and

merits of the candidates appearing therein. These statements shall be reproduced as received from the authorities presenting these candidates.

7.9 The recipient shall be selected during a plenary meeting held in camera, using the indication of preference procedure (see Rule 5).

## **8. PROCESS FOR THE APPOINTMENT OF THE EXTERNAL AUDITOR**

8.1 A detailed request for proposals for the External Auditor is prepared by the Secretary-General taking into account recommendation from the Audit Committee regarding the selection criteria. The request for proposals includes the following: tender procedures and conditions; instructions for the completion of those documents to be submitted as part of the proposal and a description of the requirements including audit approach, experience with the accrual basis of accounting in accordance with International Public Sector Accounting Standards, auditors' curriculum vitae, candidates' fees including travel and other supplementary costs; and other requirements. The approved criteria for selection should not be changed during the selection process. The tender conditions include the submission terms and closing date and an indication that incomplete proposals will be disregarded.

8.2 The request for proposals is reviewed by the Financial Advisory Committee and approved by the Executive Council.

8.3 Invitations and the detailed request for proposals are sent to the representatives of all Members and through them to their national Supreme Audit Institutions, requesting proposals.

8.4 Once the closing date for receipt of formal proposals has expired, the Secretariat summarizes the offers received. The Audit Committee examines the factual compliance of offers to the selection criteria.

8.5 The Selection Committee established by the Executive Council examines the proposals in accordance with the selection criteria and takes into account recommendation of the Audit Committee. The Selection Committee should invite candidates to make oral presentations and be interviewed. The Selection Committee then prepares a recommendation to the Council with detailed explanations.

8.6 The recommendation is reviewed by the Financial Advisory Committee and approved by the Executive Council, which appoints the External Auditor.

8.7 The audit engagement contract is established by the Secretary-General.

## **9. PROCESS FOR THE APPOINTMENT OF THE WMO AUDIT AND OVERSIGHT COMMITTEE MEMBERS**

9.1 The Audit and Oversight Committee (AOC) members shall be appointed by the Executive Council through a transparent process in accordance with the technical qualifications required of the membership as defined in the AOC terms of reference (Resolution 17 (EC-72)). The following procedure for selection and appointment of AOC members decided by the Council should be followed:

	Action	Timelines
(a)	The Secretary-General consults AOC members completing their first term to confirm their willingness to serve for a second term. Those	AOC session October -

	Action	Timelines
	AOC members willing to serve for a second term should be included in the list of candidates and advised that they are not required to apply	November
(b)	The Vacancy Announcement (VA) is placed on the WMO website, circular letters are sent to PRs (as per AOC TOR), and advertised through relevant UN and other professional networks	2 months before EC session
(c)	Deadline for applications	4 weeks after VA release
(d)	The Secretariat reviews the applications as relates to qualifications and minimum requirements and compiles a list of qualified candidates	Before EC session
(e)	The Secretariat submits a list of candidates to the Selection Committee for AOC (under confidential cover) and organizes its meeting	At the beginning of EC session
(f)	The Selection Committee submits its report to the Executive Council (under confidential cover)	During EC session
(g)	The Chair of Selection Committee presents recommendations to EC for appointment and a reserve for any further replacements within the 3 years, if required	During EC session
(h)	EC considers recommendation of the Selection Committee, appoints members of AOC and establishes the reserve list	During EC session
(i)	The AOC members informed on their appointment (re-appointment) by WMO President	After EC session
(j)	In case of resignation of AOC members at intersessional period the President acting on behalf of the EC appoints a replacement from the reserve list	As required

## 10. ACTION TO BE TAKEN BY THE PRESIDENT ON BEHALF OF THE EXECUTIVE COUNCIL

10.1 In accordance with Regulation 8 (5), at the request of the president of a regional association or a technical commission, the President of the Organization shall take action on a recommendation adopted by that body during session or by correspondence, if such action cannot be deferred until the next session of the Executive Council. For this purpose, the Secretary-General provides the President with the comments of other associations and commissions concerned on the recommendation(s) in accordance with the provisions of Regulation 94 (c), as appropriate.

10.2 The President of the Organization establishes the date of implementation of any recommendation approved in accordance with Regulation 8 (5), taking into account of the interval necessary for the Secretary-General to give appropriate notification to Members and others concerned of the decision. The Secretary-General informs the president of the body which submitted the recommendation of the action taken on it.

10.3 When the President of the Organization decides to conduct an exchange of opinion prior to a vote by correspondence, the Secretary-General collects opinions expressed and communicates them to the members of the Council. The same procedure will be followed in the case of an exchange of opinion between Members of the Organization, as a whole, prior to a vote being taken. A period of 30 days should be allotted for such an exchange of opinion between members of the Executive Council. A period of 60 days should be allotted for such an exchange of opinion between Members of the Organization.

10.4 After a vote by correspondence the Secretary-General informs the president of the body which submitted the recommendation of the results of the vote and of the text of the resolution if adopted.

10.5 If the President of the Organization decides that neither a vote by correspondence nor action in accordance with the provisions of Regulation 8 (5) should be taken on a recommendation, the Secretary-General informs the president of the constituent body concerned arranges for the recommendation to be submitted to the next session of the Executive Council.

10.6 In accordance to the provisions (2) and (3) of the General Regulation 8, provision 13.4 of the Financial Regulations and provision 12.3 of the Staff Regulations, the President is authorized to take action or to adopt a decision or directive, if it would not be in the interests of the Organization to defer such action until the next session of Congress or Executive Council.

10.7 The President reports to the Executive Council on any decision made on behalf of the Council since its previous session in order that the Executive Council may confirm such action, decision or directive, when required.

## **11. REVIEW OF PAST RESOLUTIONS AND SUBSIDIARY BODIES OF THE EXECUTIVE COUNCIL**

11.1 In accordance with the provisions of Regulation 126 (7), the Executive Council resolutions in force should be reviewed at each ordinary session of the Council.

11.2 Past resolutions should be incorporated as far as possible in any subsequent resolution adopted on the same subject. Resolutions thus incorporated will not be kept in force. Resolutions which are partly obsolete should be replaced by revised texts containing only those parts which are maintained. When the date on which a resolution ceased to be in force is not specified, that resolution should be cancelled on the date on which the session closes.

11.3 As far as appropriate, the substance of the Executive Council resolutions should be included in an appropriate WMO publication, such as *Technical Regulations, Working Arrangements, Rules of Procedure* and *Staff Rules*, provided that the publication has the required status.

11.4 The Council establishes its subsidiary bodies with a specific mandate and limited term. It reviews the subsidiary bodies structure and outcomes at each session. Once in every financial period, after Congress, the Council renews, amends or terminates mandates of subsidiary bodies to ensure the most effective and efficient implementation of Congress decisions.

Appendix: 1

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### **Appendix**

#### **Rules of procedure for the panels reporting to the Executive Council**

*[Annex 3 to Resolution 12 (EC-72) to be inserted in this document by the Secretariat at the stage of publishing]*

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## **Resolution 14 (EC-72)**

### **FINANCIAL STATEMENTS OF THE WORLD METEOROLOGICAL ORGANIZATION FOR THE YEAR 2019**

THE EXECUTIVE COUNCIL,

**Noting** Article 14 and 15 of the Financial Regulations,

**Having considered** the statement of the Secretary-General on the financial statements of the Organization for the year ended 31 December 2019, the report with recommendations of the External Auditor, and recommendations of the WMO Audit Committee and the Financial and Advisory Committee (see documents EC-72/INF. 6.1(1), EC-72/INF. 6.1(2), EC-72/INF. 7(3), EC-72/INF. 7(4)),

**Noting** the unqualified audit opinion on the Financial Statements,

**Noting further** that the Secretary-General has taken action to implement 11 of the 13 open External Auditor recommendations that were open during 2019 and that additional external audit recommendations were identified during 2019,

**Approves** the audited financial statements for the World Meteorological Organization for the year 2019 (see document EC-72/INF. 6.1(1));

**Authorizes** the transfers shown in the annex between the appropriation parts of the budget of the Organization for the seventeenth financial period (2016–2019) required on the basis of the actual expenditure as of 31 December 2019 (see also EC-72/INF. 6.1(3));

**Requests** the Secretary-General:

- (1) To transmit the financial statements together with his report and the report of the External Auditor thereon to all Members of the World Meteorological Organization;
- (2) To take actions to address the External Auditor's observations and recommendations with a view to implementing all of the recommendations as soon as possible; and
- (3) To report progress on these matters to the Executive Council;

**Notes with concern** the substantial amounts of outstanding assessed contributions of certain Members as well as the growth in the outstanding amounts from the end of 2018 to the end of 2019 and as further described in EC-72/INF. 6.1(2);

**Notes with further concern** the low level of payments of assessed contributions received by the World Meteorological Organization from Members during 2020 and the potential significant negative impact of delayed or non-payment of assessed contributions by Members on the programmes and operations of the World Meteorological Organization;

**Urges** the Members to make the payment of outstanding assessed contributions a matter of highest priority and to make every effort to clear their dues as soon as possible;

**Further requests** the Secretary-General:

- (1) To prepare reports on the programmatic and financial implications of COVID-19 on WMO and on the financial implications of the ongoing WMO reform, for consideration at the Executive Council session following the fortieth session of FINAC; and
  - (2) To develop relevant quarterly financial reporting to Members, including specific information on expenditures.
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### Annex to Resolution 14 (EC-72)

## TRANSFERS BETWEEN APPROPRIATION PARTS FOR THE 17TH FINANCIAL PERIOD (2016-2019)

### STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS FOR THE FINANCIAL PERIOD 2016-2019

(in thousands of Swiss francs)

	Expected Result	Budget amount			Expenditure* on comparable basis	% of total budget spent	Difference s: final budget and actual
		Original	Transfers	Total 2016- 2019			
1	Enhanced capabilities of Members to deliver and improve access to high-quality weather, climate, hydrological and related environmental predictions, information, warnings and services in response to users' needs and to enable their use in decision-making by relevant societal sectors.	26,588.3	544.5	27,132.8	27,132.8	100.0	-
2	Enhanced capabilities of Members to reduce risks and potential impacts of hazards caused by weather, climate, water and related environmental elements.	9,948.3	(163.9)	9,784.4	9,784.4	100.0	-
3	Enhanced capabilities of Members to produce better weather, climate, water and related environmental information, predictions and warnings to support, in particular, reduced disaster risk and climate impact and adaptation strategies.	25,838.4	(963.1)	24,875.3	24,875.3	100.0	-
4	Enhanced capabilities of Members to access, develop, implement and use integrated and interoperable Earth- and space-based observation systems for weather, climate and hydrological observations, as well as related environmental and space weather observations, based on world standards set by WMO.	41,124.1	(2,066.5)	39,057.6	39,057.6	100.0	-
5	Enhanced capabilities of Members to contribute to and draw benefits from the global research capability for weather, climate, water and related environmental science and technology development.	24,195.3	(508.4)	23,686.9	23,686.9	100.0	-
6	Enhanced capabilities of Members' NMHSs, in particular, in developing and least developed countries and Small Island Developing States, to fulfil their mandates.	48,957.6	2,564.5	51,522.1	51,522.1	100.0	-
7	New and strengthened partnerships and cooperation activities to improve NMHSs' performance in delivering services and to demonstrate the value of WMO contributions within the United Nations system, relevant regional organizations, international conventions and national strategies..	19,558.4	1,460.0	21,018.4	21,018.4	100.0	-
8	Ensured effective functioning of policy-making and constituent bodies and oversight of the Organization.	70,009.6	(867.1)	69,142.5	69,142.5	100.0	-



<b>Total expenditures</b>	<b>266,220. 0</b>	<b>-</b>	<b>266,220. 0</b>	<b>266,220.0</b>	<b>100.0</b>	<b>-</b>
* Including actuals and obligations as per UNSAS						

**Proposed transfers between appropriation parts  
for the Seventeenth Financial Period (2016-2019)**

In accordance with Article 4.2 of the Financial Regulations of the World Meteorological Organization, authorization of the following transfers between the appropriation parts of the budget of the Organization for the seventeenth financial period (2016-2019) is requested, noting that the transfers amount to 1.7 per cent of the total maximum expenditure of CHF 266.2 million as approved by Resolution 70 (Cg-XVII) — Maximum Expenditure for the Seventeenth Financial Period (2016-2019), and do not exceed the limit of three per cent as provided in Article 4.2 of the Financial Regulations.

<b>Transfers from</b>	<b>Transfers to</b>
In thousands of Swiss francs	

Expected Result 1		544.5
Expected Result 2	163.9	
Expected Result 3	963.1	
Expected Result 4	2 066.5	
Expected Result 5	508.4	
Expected Result 6		2 564.5
Expected Result 7		1 460.0
Expected Result 8	867.1	
<b>Total</b>	<b>4 569.0</b>	<b>4 569.0</b>

**Resolution 15 (EC-72)**

**CONSIDERATIONS RELATED TO THE AFTER-SERVICE HEALTH INSURANCE  
(ASHI) LIABILITY**

THE EXECUTIVE COUNCIL,

**Recalling** Decision 69 (EC-69) – Plan for funding the after-service health insurance scheme liabilities and Decision 60 (EC-70) – Plan for funding liability for after-service health insurance and Resolution 16 (EC-71) – Considerations related to the After-service Health Insurance Liability,

**Noting** that reports A/70/590, A/71/698 and A/73/662 related to the work of the United Nations Working Group (UNWG) on ASHI were issued in 2015, 2016 and 2018, respectively,

**Noting also** that the Advisory Committee on Administrative and Budgetary Questions' (ACABQ) reports related to the UNWG reports determined that more work on efficiencies and cost-containment related to ASHI should be explored and that the pay-as-you-go approach currently remains appropriate,

**Noting further** that the WMO service provider, UNSMIS, has identified and implemented a number of efficiency and cost containment measures which benefit WMO ASHI liability,

**Noting also** that the full ASHI service cost for staff positions funded by voluntary contributions exceeds the payroll cost charges for the funding of the reserve for after-service health insurance benefits related to these positions,

**Noting with concern** the report of the External Auditor stating that the employee benefit liabilities contribute to ongoing annual deficits and therefore negatively impact the long-term financial health of WMO,

**Approves** the Secretary-General's proposal (see report in EC-72/INF. 6.2) to add a 3 per cent charge on payroll costs for voluntary funded activities in order to appropriately address the funding of the reserve for after-service health insurance benefits for voluntary contribution funded staff as of 1 January 2021;

**Requests** the Secretary-General:

- (1) To continue to liaise with the other UN organizations, particularly those in Geneva within the UNSMIS plan to identify further efficiency and cost-containment measures;
- (2) To monitor developments within the UN system with respect to funding for ASHI liabilities; and
- (3) To prepare a report summarizing the approaches of other UN-system organizations to address the ASHI liability, including relevant best practices, for consideration by the Executive Council session following the fortieth meeting of FINAC.

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## **Resolution 16 (EC-72)**

### **AMENDMENTS TO STAFF REGULATIONS**

THE EXECUTIVE COUNCIL,

**Noting** the amendments to Articles 10 (Disciplinary Measures) and 11 (Appeals) approved by the President of WMO on behalf of the Executive Council in accordance with General Regulations 8(2) and 8(3) on 30 April 2020 to enter in force retroactively from 20 January 2020 (The changes were necessitated further to the WMO accession into the jurisdiction of the United Nations Dispute Tribunal and Appeals Tribunal):

Article 10 Disciplinary Measures

Taking into account the necessity to ensure alignment of WMO Staff Regulations and Rules with those of the United Nations Secretariat and to ensure a more transparent and effective investigation process, a number of changes have taken place.

Firstly, a clear statement of obligation on the part of WMO with regard to undertaking disciplinary measures vis-à-vis staff members who engage in misconduct, sexual exploitation and sexual abuse. In that regard, Staff Regulation 10.1 reads as follows:

The Secretary-General may impose disciplinary measures on staff members who engage in misconduct. Sexual exploitation and sexual abuse constitute serious misconduct.

In conjunction, a revised disciplinary procedure has been implemented ensuring due process for the staff member and a fair and transparent decision-making process. Consequently, Regulation 10.2 relating to the establishment of administrative machinery with staff participation has been removed;

#### Article 11 Appeals

As a consequence of the necessity to ensure a neutral first instance appeal process and as a result of the accession of WMO into the internal justice system of the United Nations, a revised appeals process was established. As such, Regulation 11.1 was changed and reads as follows:

Pursuant to the Agreement between the United Nations and the World Meteorological Organization, the Statute of the Dispute Tribunal and the Statute of the Appeals Tribunal shall apply to the World Meteorological Organization and accedes to the two-tier formal system of justice:

- (a) The United Nations Dispute Tribunal shall, under conditions prescribed in its statute and rules, hear and render judgment on an application from a staff member alleging non-compliance with his or her terms of appointment or the contract of employment, including all pertinent regulations and rules,
- (b) The United Nations Appeals Tribunal shall, under conditions prescribed in its statute and rules, exercise appellate jurisdiction over an appeal of a judgment rendered by the United Nations Dispute Tribunal submitted by either party;

**Noting also** the amendments to the Staff Rules approved by the Secretary-General as reported in EC-72/INF. 6.3(1),

**Noting further** the human resources report with information on the current staffing situation and summary of activities (EC-72/INF. 6.3(2)) as well as the report from the Staff Association (EC-72/INF 6.3) and the points raised within it,

**Urges** the Secretary-General:

- (1) To review the performance management process of staff to ensure continued alignment with UN best practices;
- (2) To carry out a staff survey at an appropriate time and report to the Executive Council or Congress on the results and subsequent actions;
- (3) To further enhance WMO's consultation with the Staff Committee on issues relating to staff welfare and administration;

**Requests** the Secretary-General:

- (1) To report back to the Executive Council (EC-73) on progress on the above matters:

- (2) To provide a cost-benefit analysis of changes to the workforce and the associated impact to EC-73;
- (3) To present to FINAC any proposal of an administrative and human resources nature with financial implications if requested;

**Noting** the Executive Council's expectation that the Organization adhere to all notice and consultation requirements provided for in the WMO basic documents when seeking to amend Staff Regulations in the future to ensure that Member States receive the opportunity to engage in full and proper participation afforded them on such actions in the WMO basic documents,

**Requests** the Secretary-General to align WMO's human resources reporting with common practices of the UN system and to continue providing similar reports on an annual basis and add the reports as a regular agenda item for review and discussion at future Executive Council sessions;

**Noting** Staff Regulation 12.3, which requires that Staff Regulations be amended by Congress, but which allows, if it would not be in the interests of the Organization to defer an amendment until the next session of Congress, such an amendment to be made by the Executive Council and that an amendment made by the Executive Council is subject to approval by Congress at its next session,

**Mindful** of the inadequacy of current Staff Regulation 1 and that it is proposed to amend the provisions to align WMO with the United Nations common system, and that, in that regard, the suggested revised provisions are intended to meet the following three objectives:

- (1) Meet the ethical obligations demanded by member states in areas such as Core Values and Conflict of Interests. In particular, the revised Staff Regulation 1 aims:
  - (i) To clarify and simplify the process to identify conflicts of interests to avoid situations where staff objectivity or motives can be questioned;
  - (ii) To recognize that staff members have personal activities and interests outside of the workplace. Many of staff are involved in outside pursuits in light of the nature of WMO. However, WMO staff are expected to devote their full time and attention to their duties at WMO. Therefore, the Regulations require that staff obtain prior approval before taking part in any outside activities;
  - (iii) To provide further clarification of existing rules regarding gifts. Accepting gifts can give the impression that a staff member will favour the giver in future decisions. In general, staff members are expected to refuse all gifts, honours, decorations, monetary or other awards, meals, entertainment or other favours, from all sources, while working for WMO. There are few exceptions to this rule, such as if staff members are offered an unanticipated honour or gift by a government and to refuse could cause embarrassment to WMO. Such exceptions must be reported.
- (2) Align its provisions with those of Article 10 governing the misconduct process. In particular, Staff Regulation 1 expands the terms related to prohibited conduct to expressly include sexual exploitation and discrimination; and
- (3) Permit the effective functioning of the internal justice system so as to prevent managers or other staff interfering with the judicial process laid out in Article 11,

**Decides**, subject to approval by Congress, to amend the Staff Regulations as follows:

Staff Regulations 1.1, 1.2, and 1.3 shall read:

**Regulation 1.1      Status of staff**

- (a) Staff members are international civil servants. Their responsibilities as staff members are not national but exclusively international. By accepting appointment, they pledge themselves to discharge their functions and to regulate their conduct only with the interests of the Organization in view;
- (b) Staff members shall make the following written declaration witnessed by the Secretary-General or his or her authorized representative:

"I solemnly swear (undertake, affirm, promise\*) to exercise in all loyalty, discretion and conscience the functions entrusted to me as an international civil servant of the World Meteorological Organization, to discharge these functions and regulate my conduct with the interests of the Organization only in view, not to seek or accept instructions in regard to the performance of my duties from any Government or other authority external to the Organization and at all times to observe the Standards of Conduct for the International Civil Service and the WMO Code of Ethics for Staff.

I also solemnly declare and promise to respect the obligations incumbent upon me as set out in the Staff Regulations and Rules.";

- (c) The Secretary-General shall ensure that the rights and duties of staff members, as set out in the WMO Convention, the Staff Regulations and Rules, WMO administrative instructions as well as decisions of The World Meteorological Organization Congress, are respected;
- (d) The Secretary-General shall seek to ensure that the paramount consideration in the determination of the conditions of service shall be the necessity of securing staff of the highest standards of efficiency, competence and integrity;
- (e) The Staff Regulations apply to all staff at all levels holding appointments under the Staff Rules;
- (f) The privileges and immunities enjoyed by WMO by virtue of Article 27 of the WMO Convention are conferred in the interests of WMO. These privileges and immunities furnish no excuse to the staff members who are covered by them to fail to observe laws and police regulations of the State in which they are located, nor do they furnish an excuse for non-performance of their private obligations. In any case where an issue arises regarding the application of these privileges and immunities, the staff member shall immediately report the matter to the Secretary-General, who alone may decide whether such privileges and immunities exist and whether they shall be waived in accordance with the relevant instruments.

## **Regulation 1.2      Basic rights and obligations of staff**

### **Core values**

- (a) Staff members shall uphold and respect the principles set out in the United Nations Charter, including faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women. Consequently, staff members shall exhibit respect for all cultures; they shall not discriminate against any individual or group of individuals or otherwise abuse the power and authority vested in them;
- (b) Staff members shall uphold the highest standards of efficiency, competence and integrity. The concept of integrity includes, but is not limited to, probity,

impartiality, fairness, honesty and truthfulness in all matters affecting their work and status;

### **General rights and obligations**

- (c) Staff members are subject to the authority of the Secretary-General and to assignment by him or her to any of the activities or offices of WMO. In exercising this authority, the Secretary-General shall seek to ensure, having regard to the circumstances, that all necessary safety and security arrangements are made for staff carrying out the responsibilities entrusted to them;
- (d) In the performance of their duties, staff members shall neither seek nor accept instructions from any Government or from any other source external to WMO;
- (e) By accepting appointment, staff members pledge themselves to discharge their functions and regulate their conduct with the interests of WMO only in view. Loyalty to the aims, principles and purposes of WMO, as set forth in its Convention, is a fundamental obligation of all staff members by virtue of their status as international civil servants;
- (f) While staff members' personal views and convictions, including their political and religious convictions, remain inviolable, staff members shall ensure that those views and convictions do not adversely affect their official duties or the interests of WMO. They shall conduct themselves at all times in a manner befitting their status as international civil servants and shall not engage in any activity that is incompatible with the proper discharge of their duties with WMO. They shall avoid any action and, in particular, any kind of public pronouncement that may adversely reflect on their status, or on the integrity, independence and impartiality that are required by that status;
- (g) Staff members shall not use their office or knowledge gained from their official functions for private gain, financial or otherwise, or for the private gain of any third party, including family, friends and those they favour. Nor shall staff members use their office for personal reasons to prejudice the positions of those they do not favour;
- (h) Staff members may exercise the right to vote but shall ensure that their participation in any political activity is consistent with, and does not reflect adversely upon, the independence and impartiality required by their status as international civil servants;
- (i) Staff members shall exercise the utmost discretion with regard to all matters of official business. They shall not communicate to any government, entity, person or any other source any information known to them by reason of their official position that they know or ought to have known has not been made public, except as appropriate in the normal course of their duties or by authorization of the Secretary-General. These obligations do not cease upon separation from service;

### **Honours, gifts or remuneration**

- (j) No staff member shall accept any honour, decoration, favour, gift or remuneration from any government;
- (k) If refusal of an unanticipated honour, decoration, favour or gift from a government would cause embarrassment to WMO, the staff member may receive it on behalf of WMO and then report and entrust it to the Secretary-General, who will either retain

it for WMO or arrange for its disposal for the benefit of WMO or for a charitable purpose;

- (l) No staff member shall accept any honour, decoration, favour, gift or remuneration from any non-governmental source without first obtaining the approval of the Secretary-General;

### **Conflict of interest**

- (m) A conflict of interest occurs when, by act or omission, a staff member's personal interests interfere with the performance of his or her official duties and responsibilities or with the integrity, independence and impartiality required by the staff member's status as an international civil servant. When an actual or possible conflict of interest does arise, the conflict shall be disclosed by staff members to their head of office, mitigated by WMO and resolved in favour of the interests of WMO;
- (n) All staff members at the D-1 level and above shall be required to file financial disclosure statements on appointment and at intervals thereafter as prescribed by the Secretary-General, in respect of themselves, their spouses and their dependent children, and to assist the Secretary-General in verifying the accuracy of the information submitted when so requested. The financial disclosure statements shall include certification that the assets and economic activities of the staff members, their spouses and their dependent children do not pose a conflict of interest with their official duties or the interests of WMO. The financial disclosure statements will remain confidential and will only be used, as prescribed by the Secretary-General, in making determinations pursuant to Staff Regulation 1.2 (m). The Secretary-General may require other staff to file financial disclosure statements as he or she deems necessary in the interest of WMO;

### **Outside employment and activities**

- (o) Staff members shall not engage in any outside occupation or employment without the prior approval of the Secretary-General;
- (p) The Secretary-General may authorize staff members to engage in an outside occupation or employment, whether remunerated or not, if:
  - (i) The outside occupation or employment does not conflict with the staff member's official functions or the status of an international civil servant;
  - (ii) The outside occupation or employment is not against the interest of WMO; and
  - (iii) The outside occupation or employment is permitted by local law at the duty station or where the occupation or employment occurs;

### **Use of property and assets**

- (q) Staff members shall use the property and assets of WMO only for official purposes and shall exercise reasonable care when utilizing such property and assets;
- (r) Staff members must respond fully to requests for information from staff members and other officials of WMO authorized to investigate the possible misuse of funds, waste or abuse.

### **Regulation 1.3      Performance of staff**

- (a) Staff members are accountable to the Secretary-General for the proper discharge of their functions. Staff members are required to uphold the highest standards of efficiency, competence and integrity in the discharge of their functions. Their performance will be appraised periodically to ensure that the required standards of performance are met;
- (b) The whole time of staff members shall be at the disposal of the Secretary-General for the performance of official functions. The Secretary-General shall establish a normal working week and shall establish official holidays for each duty station. Exceptions may be made by the Secretary-General as the needs of the service may require, and staff members shall be required to work beyond the normal tour of duty when requested to do so.

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### **Resolution 17 (EC-72)**

#### **TERMS OF REFERENCE AND MEMBERSHIP OF THE AUDIT AND OVERSIGHT COMMITTEE**

THE EXECUTIVE COUNCIL,

**Recalling** Resolution 10 (EC-LVIII) – Terms of reference of the Audit Committee, Resolution 38 (Cg-XV) – Audit Committee and Resolution 8 (EC-LXIII) – Terms of reference and membership of the Audit Committee,

**Noting** the recommendations of the Audit Committee,

**Noting also** the recommendations of the External Auditor,

**Noting further** the recommendations of the Joint Inspection Unit of the United Nations System in their review of audit and oversight committees in the United Nations (JIU/REP/2019/6),

**Recognizing** the introduction of International Public Sector Accounting Standards (IPSAS) as the accounting standards for WMO and their importance for strengthening the financial management of WMO,

**Having considered** the recommendation of the Policy Advisory Committee,

**Decides** to amend the name and terms of reference of the WMO Audit Committee, reporting to the Executive Council, as provided in the annex to the present resolution;

**Further decides** that, in accordance with best practice in the UN System, Executive Council members shall not serve concurrently on the Audit and Oversight Committee following the last term of service of any Executive Council members currently serving on the Audit and Oversight Committee.

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Note: This resolution replaces Resolution 8 (EC-LXIII), which is no longer in force.

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## **Annex to Resolution 17 (EC-72)**

### **TERMS OF REFERENCE, MEMBERSHIP AND MODE OF OPERATION OF THE AUDIT AND OVERSIGHT COMMITTEE**

#### **1. Mandate of the Audit and Oversight Committee**

- (1) The Audit and Oversight Committee is mandated by the Executive Council to provide objective advice and recommendations to the Executive Council and the WMO Secretary-General on all matters relating to financial management and reporting, systems of internal control and risk management, audit and evaluation processes, monitoring of compliance with financial rules and regulations and the Framework of Ethics, taking into consideration the policies and procedures applicable to WMO and its operating environment.

The Audit and Oversight Committee shall seek to promote proper governance and high ethical standards, as well as the adoption and use by management of best practices in risk and financial management.

- (2) The Audit and Oversight Committee shall be constituted as an independent advisory expert body of the Executive Council in accordance with Regulation 27 of the WMO General Regulations (2019 edition).

#### **2. Responsibilities and duties**

- (3) The Audit and Oversight Committee shall discharge its mandate under these terms of reference through the following responsibilities and duties:
- (a) Review and advise on policies significantly impacting financial management and reporting, the internal audit and investigation function, and the evaluation functions and the effectiveness of WMO's systems of internal control and accountability; including its control assurance statements and risk management and governance practices;
  - (b) Review and assess the suitability of accounting and financial policies and advise on any proposed changes to financial regulations; and assess the adequacy, reliability and accuracy of financial statements, and review and advise the Secretary-General on the financial statements and reports of WMO;
  - (c) Review significant risks impacting WMO and advise on the adequacy, effectiveness and development of risk management policies and processes (including cybersecurity);
  - (d) Assess the strengths and weaknesses of, and consider improvements to, the internal and external audit functions for effective oversight coverage;
  - (e) Review the Internal Oversight Office (IOO) charter, strategy and work plans (including the adequacy of coverage of major risks facing WMO such as cybersecurity, compliance and ethics risks in the internal oversight plan); budget, staffing and other resources required for the functioning of IOO and organizational structure;

- (f) Monitor the quality and effectiveness of internal control and governance mechanisms and the content of assurances that underpin any Statement on Internal Control to ensure best practices;
- (g) Review and advise on the appointment, performance evaluation and termination of the Director of IOO;
- (h) Review and advise on the status of appointment, replacement, dismissal, terms and fees of an External Auditor;
- (i) Review the External Auditor's work plans and the effectiveness of the external audit function;
- (j) Review and discuss all relevant reports and management letters including reports of internal and external auditors on WMO's financial statements, risk assessment reports and other internal control reports;
- (k) Assess the adequacy of assurances received from the Internal and External Auditors in their annual reports and opinions and highlight, as necessary, audit issues that may need further investigation or review with due considerations to confidentiality and due process;
- (l) Review the timeliness and adequacy of the implementation by WMO management of recommendations of the internal and external auditor and UN Joint Inspection Unit (JIU);
- (m) Review the adequacy of arrangements to prevent and detect fraud, and ensure an appropriate anti-fraud culture;
- (n) Report on any failure by WMO management to comply with WMO regulations and the Organization's code of ethics and provide advice to the Executive Council on such issues, as appropriate;
- (o) Evaluate and advise on WMO's Code of Ethics, whistleblower policy and other ethics-related policies as appropriate and advise on the appointment and dismissal process of the Ethics Officer;
- (p) Review and advise on the governance, development and management of information technology systems that have an impact on financial management and reporting;
- (q) Carry out as appropriate periodic self-assessments relative to the Audit and Oversight Committee's purpose, duties and responsibilities outlined herein and also review its constitution and terms of reference to ensure it is operating at maximum effectiveness and recommend any changes it considers necessary to the Executive Council for approval;
- (r) Perform any other duties consistent with the mandate as requested by the Executive Council.

### **3. Responsibility and liability of members**

- (4) Members shall act in an independent, non-executive capacity while performing their advisory role on the Committee. As such, members shall not be held personally liable for decisions taken by the Committee acting as a whole.

- (5) The Committee has an advisory role and is not a governance body; no language or clauses in the Terms of Reference are intended to imply otherwise.
- (6) It is not the Audit and Oversight Committee's responsibility to prepare and certify WMO's financial statements, to guarantee the external auditor's report, or to guarantee other disclosures by WMO. These are the fundamental responsibilities of management and the external auditor. The Audit and Oversight Committee members are not WMO employees and do not perform any operational functions.

#### **4. Audit and Oversight Committee powers and authority**

- (7) The Audit and Oversight Committee has the power, authority and the responsibility to review any activity relevant to these terms of reference including, but not necessarily limited to:
  - (a) Obtain all information and/or documents it considers necessary to perform its mandate including all internal and external audit reports;
  - (b) Request information generated from WMO's systems and require all WMO personnel to cooperate with any request made by the Committee in performing its mandate; and
  - (c) Invite specialists to supplement the Committee's experience or knowledge on a specialist matter;
  - (d) The Committee shall separately meet with the Director of IOO, Ethics Officer and the representatives of the External Auditor at least annually in a private session and can consult with their respective staff as needed;
  - (e) The Audit and Oversight Committee has the authority to establish their own rules and procedures in conformity with these Terms of Reference;
  - (f) The Committee can obtain independent professional advice and secure the attendance of outside persons with relevant experience and expertise if it is considered necessary.

#### **5. Audit and Oversight Committee reporting**

- (8) The Audit and Oversight Committee shall report annually to the Executive Council and the Financial Advisory Committee (FINAC) and to the WMO Congress in a Congress year. The report should:
  - (a) Confirm that the Committee has discharged its mandate and report on its work for the year;
  - (b) Comment on the assurances underpinning the Statement on Internal Control;
  - (c) Comment on the financial statements and quality of financial reporting;
  - (d) Outline any concerns or observations the Committee deems necessary to report to the Executive Council, including any recommendations;
  - (e) Comment on the adequacy of the Committee's terms of reference and its effectiveness;

- (f) Comment on how IOO addressed and identified high-risk areas through its work plan and the adequacy of its budget to carry out the said plan;
- (g) Provide its views on the annual IOO report including its statement of independence.

## **6. Membership**

- (9) The Audit and Oversight Committee shall consist of seven members, each of whom shall serve in a personal capacity.
- (10) The members shall be appointed by the Executive Council on the basis of their extensive professional expertise in financial, risk, audit, oversight, ethics, investigation and governance matters, including a balanced mix of public and private sector experience at the senior level. The Executive Council shall ensure that the membership as a whole has a blend of relevant expertise, including knowledge and understanding of the operational and strategic direction of WMO, its mandate, culture, legal framework and external environment. The Executive Council shall take into account the need for the Audit and Oversight Committee to have an appropriate geographical and gender balance in considering the most highly qualified candidates.
- (11) The members must be independent of WMO management and may not hold any position or engage in any activity that might be liable to, or appear to, impair their impartiality in the execution of their functions.
- (12) Former staff of WMO cannot be appointed to the Committee for at least five years following their separation from the Organization.
- (13) Members shall serve for a period of three years and may be re-appointed for a further period of three years. No individual may serve for more than six years in total.
- (14) Members shall not be remunerated by WMO for activities undertaken with respect to their membership of the Committee. WMO shall reimburse all committee members for any travel and subsistence costs that are necessarily incurred in relation to participation in Committee meetings.

## **7. Appointment of members**

- (15) The Audit and Oversight Committee members shall be appointed by the Executive Council through a transparent process as follows:
  - (a) A vacancy announcement for Audit and Oversight Committee seats should be advertised and made publicly available to a wide population of individuals with appropriate skills, including financial, accounting, budgeting and audit professionals;
  - (b) Qualified individuals are to submit their credentials for review to the Secretary-General. The Secretariat shall review the qualifications, determine whether they meet the minimum requirements needed to serve, and submit a list of candidates to the Executive Council;

- (c) The Council shall appoint members of the Audit and Oversight Committee from the list of candidates compiled by the Secretariat and authorize the President to fill any positions that fall vacant during the intersessional period.

## **8. Access to meetings**

- (16) The meetings of the Audit and Oversight Committee shall be closed. The Chair shall normally invite the following persons to attend sessions of the Committee, as appropriate: (a) Senior management representatives; (b) Director of IOO; (c) Legal counsel; (d) Representatives of the External Auditor.
- (17) The Committee shall, as required, hold in camera sessions with the Director of IOO and/or representatives of the External Auditor and/or the Secretary-General and the Ethics Officer.

## **9. Meetings**

- (18) The Audit and Oversight Committee shall meet twice a year. Additional sessions of the Audit and Oversight Committee may be convened at the request of the Executive Council or the WMO President, or by two thirds of the Audit and Oversight Committee members, to consider urgent matters within its mandate, some of which may be virtual meetings, either by videoconference or telephone.

The members of the Committee shall normally be given at least ten (10) working days' notice of meetings.

- (19) The quorum of the Committee shall be a majority of its members.
- (20) The members should be present for meetings in person, if possible. Members may not appoint alternates or be accompanied by advisors to meetings of the Committee.

However, with the permission of the Chair, a member may attend by videoconference or telephone and such participation shall be taken into account for the purpose of establishing a quorum. Such members may vote.

- (21) The Secretary-General shall ensure that the Committee has adequate Secretariat support within the Cabinet, which shall include:
  - (a) Assistance to the Chair in preparing the agenda for each meeting;
  - (b) Preparation of documents for the meeting, which shall be circulated at least five working days before the scheduled opening of the meeting;
  - (c) Preparation of reports on summary conclusions and circulation of said reports to the Chair and members of the Committee who attended the meeting within five working days of the close of the meeting;
  - (d) Assistance to the Committee in preparing Audit and Oversight Committee reports to the Executive Council and other WMO bodies as appropriate;
  - (e) Any other reasonable requests from the Committee to assist it in executing its mandate.

- (22) The Audit and Oversight Committee shall appoint a Chair and a Vice-Chair. If the Chair is not present at a meeting, the Vice-Chair shall preside the meeting and in case s/he is absent, members shall elect an acting Chair from among the members present.
- (23) The Committee should strive to achieve decisions on a consensus basis of all members present as the desired option. Should there be a need, the Committee's decisions shall be made by the members present by voting and on the basis of a simple majority. Should the votes be equally divided, the Chair shall have the deciding vote.

#### **10. Disclosure of interest**

- (24) All members of the Committee shall sign a statement of disclosure of interest. A register of interests shall be maintained by the Secretariat to record members' interests in general or on specific matters. Where an actual or potential conflict of interest arises, the interest shall be declared and shall cause the member(s) to either be excused from the discussion or abstain from voting on the matter. In such an event, a quorum shall be required from the remaining members.

#### **11. Confidentiality**

- (25) All members of the Committee shall sign a statement of confidentiality. The deliberations of the Committee and the minutes of the meetings are confidential unless otherwise decided by the Chair. The documents and informational material circulated for the consideration of the Committee shall be used solely for that purpose and treated as confidential.

#### **12. Indemnity of members**

- (26) The Committee members shall be indemnified from actions taken against them as a result of activities performed in the course of business of the Committee, as long as such activities are performed in good faith and with due diligence.

#### **13. Effectiveness of the committee**

- (27) The Committee shall undertake a self-assessment review of its effectiveness preferably annually and an independent performance evaluation, periodically as appropriate. This review should consider the views of the Audit and Oversight Committee members, the Secretary-General, the IOO and External Auditors. This review should be documented in a report to the Executive Council and should include any actions for improvement.
- (28) The Chair shall regularly interact with the WMO Secretariat and the Executive Council on the results of the Committee deliberations as well as on forthcoming issues relevant to business, as appropriate.

#### **14. Administrative matters**

- (29) Financial support for participation by Audit and Oversight Committee members in meetings shall be provided by the Organization.

- (30) The appointment of Committee members shall be confirmed by a letter from the WMO President, which should clearly outline the basis of appointment and cover responsibilities, conflict of interest, indemnities and reimbursement of expenses.
- (31) The Secretary-General shall arrange for new Committee members to receive an appropriate briefing on the work of WMO.
- (32) The Secretary-General shall ensure that Audit and Oversight Committee members receive ongoing briefings and other information on developments in the work of WMO to enable them to be well-informed and effectively discharge the mandate of the Committee.
- (33) The Terms of Reference of the Committee must be published on the WMO website.
- (34) The Committee periodically, and at least every three years, shall review the adequacy of its terms of reference, where appropriate recommending changes to the Executive Council for decision.

### **Resolution 18 (EC-72)**

#### **REVIEW OF PREVIOUS RESOLUTIONS AND DECISIONS OF THE EXECUTIVE COUNCIL**

THE EXECUTIVE COUNCIL,

**Noting:**

- (1) Resolution 17 (EC-71) – Review of previous resolutions and decisions of the Executive Council,
- (2) Article 14 (c) of the Convention regarding the functions of the Executive Council in considering and where necessary taking action on resolutions in accordance with the procedures laid down in the regulations,
- (3) Regulation 126 (7) of the General Regulations (*Basic documents No. 1* (WMO-No. 15), 2019 edition), concerning the review of the Executive Council resolutions and Rule 27 of the *Rules of Procedure of the Executive Council* (2012 edition),

**Taking into account** the body of decisions agreed at the seventy-first session of the Executive Council,

**Having examined** the Council's previous resolutions and decisions still in force, details of which are provided in EC-72/INF. 8,

**Decides:**

- (1) To keep in force the following resolutions:

EC-IV 2  
 EC-XII 6  
 EC-XXXIV 13  
 EC-XXXV 21

EC-XXXVI 6  
 EC-XL 4  
 EC-XLIV 15  
 EC-XLV 13  
 EC-XLVIII 12  
 EC-LVI 9, 18  
 EC-LVII 5  
 EC-LVIII 15  
 EC-LIX 16, 17, 19, 26  
 EC-LX 6  
 EC-LXI 4, 8, 14  
 EC-64 14, 15, 16, 17, 18, 20, 23, 24  
 EC-65 12  
 EC-66 10, 13, 18, 22  
 EC-68 1, 5, 6, 12  
 EC-69 6, 11, 15, 17, 19  
 EC-70 2, 3, 11, 13, 17, 23, 24, 25, 28, 29, 30, 31, 32, 34, 35, 38  
 EC-71 1, 2, 3, 4, 5, 6, 7, 9, 13, 15;

(2) Not to keep in force the other resolutions adopted before its seventy-second session;

**Also decides:**

(1) To keep in force the following decisions:

EC-68: 3, 5, 6, 10, 11, 12, 14, 15, 20, 21, 23, 24, 27, 28, 30, 40, 42, 47, 53, 56, 57, 61, 62, 64, 68, 70, 71, 72, 74, 75, 76, 83, 93;

EC-69: 4, 5, 7, 10, 11, 14, 15, 16, 17, 18, 19, 23, 25, 27, 28, 30, 31, 33, 41, 43, 44, 46, 50, 52, 53, 54, 55, 56, 57, 58, 62, 70;

EC-70: 3, 6, 7, 8, 9, 10, 13, 14, 16, 21, 22, 26, 27, 28, 29, 30, 34, 38, 39, 40, 43, 44, 45, 47, 48, 49, 53, 55, 56;

EC-71: 1, 2, 3, 4, 5;

(2) Not to keep in force the other decisions adopted before its seventy-second session;

**Having further reviewed** the status of implementation of the resolutions of the eighteenth World Meteorological Congress, and **noting** that while a majority of actions and activities are in progress, some may have been delayed as a result of the COVID-19 pandemic,

**Requests** the Secretary-General to make available the text of the in-force resolutions and decisions of the Council, including those with corrigenda in a new issue of *Resolutions and Decisions of Congress and the Executive Council* (WMO-No. 508).

Note: This resolution replaces Resolution 17 (EC-71), which is no longer in force.



## **APPENDIX 3. DECISIONS ADOPTED BY THE SESSION**

### **Decision 1 (EC-72)**

#### **METHODS OF WORK FOR ONLINE SESSIONS OF THE EXECUTIVE COUNCIL**

**The Executive Council decides** to adopt the methods of work for conducting the seventy-second session of the Executive Council online.

See the annex to the present decision.

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Decision justification: Following a series of consultations with members on the holding of the seventy-second session of the Executive Council, in light of the COVID-19 pandemic, the President decided to conduct the session online, via videoconference. General Regulations and *Rules of Procedure of the Executive Council* will be applied as provided in this document.

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#### **Annex to Decision 1 (EC-72)**

##### **METHODS OF WORK FOR CONDUCTING ONLINE SESSIONS OF THE EXECUTIVE COUNCIL**

#### **1. Legal provisions**

1.1 The Convention, General Regulations and the Rules of Procedure of the Executive Council shall continue to apply in full, subject to consideration of any online practice that would be exceptionally required to conduct the online session, as identified in the attached table.

#### **2. Registration**

2.1 Members of the Executive Council (EC), invited observers and representatives of WMO Members shall notify the Secretary-General of the names of the persons who will participate in the session following the normal practice in accordance with the Rules of Procedure of the Executive Council.

2.2 Online registration will follow normal practice. Additional information is provided on the EC-72 website.

2.3 Guidance for identification of participants of online sessions is provided in the attached table.

#### **3. Attendance and quorum**

3.1 Attendance by EC members, invited observers, presidents of technical commissions, chairs of WMO bodies and representatives of WMO Members, shall be through a secured access to the videoconference.

3.2 The number of participants, besides the EC members, simultaneously connected may be limited depending on the capacity of the selected videoconference system.

3.3 Online attendance by EC members (or their alternates) shall be checked and registered in each meeting of the session to ensure the quorum of 2/3 of members of the Council.

#### **4. Documents**

4.1 Documents for the session will be made available and managed following normal practice through the EC-72 website. Confidential documents shall be distributed to EC members or their alternates through the password protected section on the website.

4.2 To optimize discussions of documents in online sessions, members of the Council are encouraged to submit comments on documents to [plenary@wmo.int](mailto:plenary@wmo.int) prior to the session, preferably one week before the opening of the session.

4.3 Confidential documents should be distributed through the password protected section on the session website as per normal practice. EC members should receive passwords by email.

#### **5. Interventions**

5.1 During the online session, members or their alternates/advisors on their behalf shall be provided with the opportunity to take the floor. Individual statements are normally limited to three minutes.

5.2 Any member of the Council wishing to take the floor should signal their wish to speak or to raise a point of order using the videoconference system, as indicated in EC-72/INF. 1(1).

#### **6. Recording of sessions**

6.1 Pursuant to Regulation 95(c), audio recordings of plenary meetings shall be made and retained for record-keeping purposes.

#### **7. Decision-making**

7.1 All decisions of the session should as far as possible be taken by consensus. Should certain matters require substantive debate, the President may propose the establishment of drafting groups, which will meet separately and report back to the plenary.

7.2 For selection of the IMO Prize recipient and, if required, designation of acting members of EC, a voting process should be organized in camera. The voting process will be organized online by the same service supplier that provided voting devices for previous physical sessions. If an online voting session is somehow not feasible, EC will consider voting by correspondence.

#### **8. Committees**

8.1 All business shall be conducted in plenary except for the selection committees or other committees that may be established, which shall meet separately, through an online

platform that will be specified. All matters to be discussed by the committees shall be determined by the plenary.

## **9. Languages**

9.1 General Regulation 97 shall continue to apply, whereby interventions made shall be interpreted into the other working languages of the Executive Council.

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### Explanatory note on online practices in conducting online sessions of the Executive Council

Procedure	Physical session	Reference	Online session
<p><b>EC members registration, attendance and identification</b></p>	<p>EC members send letters regarding their participation and indicate who they will be accompanied by and the capacity in which they will attend (alternate and adviser(s)). Invited observers and representatives of WMO Members notify the Secretary-General of the names of persons who will attend the session.</p> <p>In addition, online registration takes place through the Event Registration System.</p> <p>One nameplate per EC member regardless of the size of the delegation.</p> <p>The number of participants simultaneously present at the meetings is limited by the capacity of the Salle Obasi. If the meeting room proves to be insufficient to accommodate all EC members, alternates, advisers, invited presidents, chairs, experts, observers and Secretariat officials, the Secretariat arranges for video broadcasting in another room.</p>	<p>GR<sup>19</sup> 124, Rule<sup>20</sup> 3 (2.3)</p> <p>Resolution 40 (Cg-XVI) Rule (3.5)</p>	<p>Same.</p> <p>Specific naming convention will be determined by the Secretariat to facilitate the online identification of EC members and their accompanying parties, such as:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> member surname</li> <li><input type="checkbox"/> member surname - alternate surname</li> <li><input type="checkbox"/> member surname - adviser(s) surname(s)</li> <li><input type="checkbox"/> PRA-I (II, ..., VI) for presidents of RAs being ex-officio EC members.</li> </ul> <p>The number of participants, besides EC members, simultaneously connected to the session may be limited depending on the capacity of the selected videoconference system (300 connections foreseen for EC-72). Conference Officer (system administrator) will optimize the number of connections and capacity of the system.</p>

<sup>19</sup> General Regulations, Basic Document 2019 edition (WMO-No. 15)

<sup>20</sup> Rules of Procedure for the Executive Council, Rule number in 2012 edition (number in 2020 edition to be approved by EC-72)

Procedure	Physical session	Reference	Online session
<b>Quorum</b>	<p>Presence of EC members or their duly designated alternates in the room confirmed through presence cards. Quorum of 2/3 of EC members is established at the beginning of the session and confirmed at each plenary meeting.</p> <p>If a quorum according to Article 17 of the Convention is not obtained at a session, the decisions adopted by a two-thirds majority of those members present shall be referred by correspondence to all members of the Executive Council. Any such decision shall be considered as a decision of the Council only when it obtains approval by two-thirds of the votes cast for and against within 60 days after it has been sent to the members, provided that more than half the members of the Executive Council have participated in the vote.</p>	<p>Article<sup>21</sup> 17 Rule (2.4)</p> <p>GR 129</p>	<p>Online presence shall be confirmed based on active connections. A quorum of 2/3 of EC members (25 for EC-72) will be established at the beginning of the session and confirmed at each plenary meeting.</p> <p>In the absence of a quorum, i.e. due to connectivity problems, the meeting could be:</p> <ul style="list-style-type: none"> <li>(i) suspended until connectivity is restored, provided this is within the agreed working hours of the session,</li> <li>(ii) postponed until the following working day,</li> <li>(iii) continued with those present to further adopt the decision by correspondence.</li> </ul>
<b>Interventions and submission of written comments</b>	<p>Request the floor by raising the nameplate.</p> <p>EC members (or their alternates/advisers on their behalf) intervene first, followed by observers. Individual statements are normally limited to three minutes.</p> <p>Submit written comments on documents following the intervention to plenary@wmo.int.</p>	GR 124	<p>Signal wish to speak using the videoconference system, as indicated in EC-72/INF. 1(1).</p> <p>Same.</p> <p>In view of the limited time for online sessions and in order to optimize discussions during the meeting, EC members are encouraged to submit comments on documents to plenary@wmo.int prior to the session, preferably one week before the start of the session.</p>

<sup>21</sup> WMO Convention, Basic Document 2019 edition (WMO-No. 15)

<b>Procedure</b>	<b>Physical session</b>	<b>Reference</b>	<b>Online session</b>
<b>Recording of Sessions</b>	Audio recordings of plenary meetings shall be made and retained for record-keeping purposes.	GR 95 (c)	Same
<b>Conduct of business during sessions (i.e. points of order, motions, amendments)</b>	A point of order may be raised by any EC member by means of a specific gesture from the floor. It shall be immediately addressed by the President in accordance with the Regulations.	GR 79	A point of order may be raised by any EC member through the chat function, writing "Point of Order". It shall be immediately addressed by the President in accordance with the Regulations.
<b>Decision-making</b>	All decisions of the session should as far as possible be taken by consensus. Should certain matters require substantive debate, the President may propose the establishment of drafting groups, which will meet separately and report back to the plenary.	Article 16 (a)	Same
<b>Designation of Acting EC members</b>	Usually elected by regional consensus, through the PRA nomination of the relevant region, announced from the floor. If no consensus is reached, all members of the Council vote in an in camera meeting using the indication of preference procedure (see below).	Rule 15 (6.1)	Same

Procedure	Physical session	Reference	Online session
<b>Voting in camera</b>	<p>For the selection of the IMO Prize recipient and, if required, designation of acting members of EC, the voting process is organized in camera using the indication of preference procedure.</p> <p>EC members or their duly designated alternate only to participate in in camera meetings. Quorum to be established of 2/3-member presence.</p> <p>Confidential report of the Selection Committee is distributed through the password protected section on the session website. EC members receive passwords in sealed envelopes at the registration.</p> <p>Vote through indication of preference procedure using voting devices.</p>	<p>Rule 14 (5.1) Rule 18 (7.2)</p>	<p>Same. Online presence of EC members or alternates shall be confirmed based on active connections.</p> <p>Same</p> <p>Same. Report of the Selection Committee will be distributed through the password protected section on the session website. EC members will receive passwords by email.</p> <p>Online vote through indication of preference procedure. Online vote process to be provided by same service supplier that provided voting devices and described in detail in EC-72/INF. 5.1(2). If an online voting session somehow turns out not to be feasible, EC will consider voting by correspondence.</p>
<b>Languages</b>	<p>Interventions interpreted into the other working languages of the Executive Council. Participants select their desired language from the device at their seat.</p>	<p>GR 97</p>	<p>Same. Participants will be able to select their desired language option from the online menu.</p>

Procedure	Physical session	Reference	Online session
<p><b>Identification of observers and representatives of Members</b></p>	<p>Representatives of observers (invited international organizations), non-Member States and representatives of Members (formally designated by PRs or Permanent Missions in Geneva) should be registered through the Event Registration System. The observer badge should indicate Organization. The badge of representative of Member should indicate the Member State or Territory.</p> <p>Dedicated rows shall be allocated in the meeting rooms with the nameplate "Representatives of Members", if possible. If a meeting room proves insufficient to accommodate Members' representatives, in addition to official participants, observers and members of the Secretariat, the Secretariat shall arrange for video broadcasting of the sessions of the Executive Council in another room, provided that the meeting is being held at the WMO headquarters in Geneva.</p> <p>The representatives of Members shall not be entitled to take the floor.</p>	<p>Resolution 40 (Cg-XVI) Rule (3.5)</p>	<p>Specific naming convention will be determined by the Secretariat to facilitate online identification of observers and representatives of Members, such as:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Name of organization (1, 2, ... if several representatives),</li> <li><input type="checkbox"/> Name of Member State or Territory (1, 2, ... if several representatives),</li> <li><input type="checkbox"/> Name of non-Member State (1, 2, ... if several representatives),</li> </ul> <p>Number of participants simultaneously connected may be limited depending on the capacity of the selected videoconference system.</p> <p>The representative of Members will not be able to speak.</p>
<p><b>Identification of presidents of TCs, chairs and other invited experts</b></p>	<p>Presidents of technical commissions and chairs of relevant bodies invited to the session of EC are identified on their badges and nameplates. Other invited experts and regional hydrological advisers are only identified on their badges.</p>		<p>Specific naming convention will be determined, such as:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> P/INFCOM, P/SERCOM,</li> <li><input type="checkbox"/> Chair body acronym (C/HCP)</li> <li><input type="checkbox"/> HA-RA-I (II, ..., VI)</li> </ul> <p>Expert, surname</p>



## **Decision 2 (EC-72)**

### **CONSIDERATION OF THE REPORTS**

#### **The Executive Council:**

- (1) Noted the reports of the President of WMO, presidents of regional associations and the Secretary-General, highlighting progress in the activities of the Organization, its constituent bodies and the Secretariat, since the last session of the Council;
  - (2) Noted the decisions made by the President on behalf of the Council since its last session under the General Regulation 8 and the Staff Regulation 12.3 (*Basic Document No. 1, 2019 edition* (WMO-No. 15));
  - (3) Dealt with the reports of presidents of technical commissions and the Chair of the Research Board (RB) under the relevant agenda items;
  - (4) Noted in the report of the Scientific Advisory Panel (SAP) that there is a potential overlap between the roles of the SAP and RB and therefore requested that:
    - (a) The work of the SAP be harmonized with that of the RB and aligned to its terms of reference,
    - (b) A report on this work be presented to EC-73,
    - (c) The SAP to go further beyond the current vision and strategic planning of WMO in preparing their recommendations to EC and Congress;
  - (5) Considered recommendations of meetings of other bodies established by the Congress and the Executive Council, among which the Policy Advisory Committee and the Technical Coordination Committee, under the relevant agenda items;
  - (6) Highlighted the different roles of WMO bodies – intergovernmental and non-intergovernmental – and the importance of their coordination through information sharing and cooperation to better support the Council in its decision-making on strategic issues;
  - (7) Appreciated the efforts of the different WMO bodies, led by the respective officers and supported by the Secretariat, to implement their programmes of work despite the impacts of the COVID-19 pandemic;
  - (8) Noted that the reports will be included in the final report of the session.
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## **Decision 3 (EC-72)**

### **EXTRAORDINARY SESSION OF CONGRESS IN 2021**

#### **The Executive Council decides:**

- (1) That the extraordinary session of the World Meteorological Congress should be held from 31 May to 4 June 2021 in Geneva, subject to the evolution of the COVID-19 pandemic and with a view to maintaining as much as possible the practice of face-to-face Congress,
- (2) The provisional agenda for the session should be as shown in Annex 1,
- (3) The invitations to Congress should be extended to the United Nations, international organizations and non-Member countries listed in Annex 2,
- (4) To convene the Hydrological Assembly (General Regulation 26) (*Basic Documents No. 1, 2019 edition* (WMO-No. 15) as a parallel event and to invite Members to include in national delegations the Hydrological Advisers of Members (in accordance with General Regulation 5 (b)) and other representatives of National Hydrological Services or other national hydrological agencies as designated by Members,
- (5) To entrust the President and the Secretary-General with developing the detailed programme, high-level events and arrangements for the Congress.

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Decision justification:

Resolution 2 (Cg-18) – Maximum expenditure for the eighteenth financial period (2020–2023)

Resolution 11 (Cg-18) – WMO reform - next phase

Resolution 7 (Cg-18) – Establishment of WMO technical commissions for the eighteenth financial period

Resolution 21 (Cg-18) – Implementation of the Global Framework for Climate Services

Resolution 24 (Cg-18) – Vision, strategy and organizational arrangements for hydrology and water resources in WMO

Resolution 34 (Cg-18) - Global Basic Observing Network,

Resolution 56 (Cg-18) – Data policies and practices,

Resolution 89 (Cg-18) – Extraordinary session of Congress in 2021.

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### **Annex 1 to Decision 3 (EC-72)**

#### **PROVISIONAL AGENDA FOR THE EXTRAORDINARY SESSION OF CONGRESS IN 2021**

##### **1. AGENDA AND ORGANIZATION OF THE SESSION**

##### **2. WMO REFORM ASSESSMENT AND FURTHER DIRECTIONS**

2.1 Reform status - advancements and impacts of the COVID-19 pandemic

2.2 Enhancement of regional working mechanisms

2.3 Elections of vice-president of the Services Commission

**3. WMO SUPPORT TO GLOBAL WATER AGENDA**

- 3.1 Hydrology in the twenty-first century – WMO strategy and plan of action
- 3.2 Water and climate coalition to accelerate implementation of SDG 6

**4. POLICY AND PRACTICE FOR EARTH SYSTEM DATA EXCHANGE**

- 4.1 Enhancing data access and sharing for Earth system monitoring and prediction - outcomes of the WMO Data Conference
- 4.2 Towards a unified WMO data policy and practice – outcomes of the comprehensive review and new data resolution
- 4.3 WMO response to global crises – ensuring continuity of observations, operations and essential services  
*[Based on COVID-19 experience, promote development of national and regional contingency plans to support operations and essential services]*

**5. AMENDMENTS TO THE WMO TECHNICAL REGULATIONS****6. CLOSURE OF THE SESSION****Annex 2 to Decision 3 (EC-72)****LIST OF INTERNATIONAL ORGANIZATIONS TO BE INVITED TO THE EXTRAORDINARY SESSION OF CONGRESS IN 2021****ORGANIZATIONS WITHIN THE UN SYSTEM<sup>22</sup>**

Economic and Social Commission for Asia and the Pacific (ESCAP)  
 Economic and Social Commission for Western Asia (ESCWA)  
 Economic Commission for Africa (UNECA)  
 Economic Commission for Europe (UNECE)  
 Economic Commission for Latin America and the Caribbean (ECLAC)  
 Food and Agriculture Organization of the United Nations\* (FAO)  
 Intergovernmental Oceanographic Commission of UNESCO\* (IOC/UNESCO)  
 International Atomic Energy Agency\* (IAEA)  
 International Civil Aviation Organization\* (ICAO)  
 International Fund for Agricultural Development\* (IFAD)  
 International Labour Organization (ILO)  
 International Maritime Organization\* (IMO)  
 International Monetary Fund (IMF)  
 International Organization for Migration (IOM)  
 International Telecommunication Union\* (ITU)  
 Joint Inspection Unit of the United Nations (JIU)  
 Office of the High Commissioner for Human Rights (OHCHR)  
 Office of the United Nations High Commissioner for Refugees (UNHCR)

<sup>22</sup> General Regulation 104 (2019 edition) requires that an invitation be sent to the United Nations. The organizations within the UN system marked with an asterisk (\*) have an agreement or a working arrangement with WMO, which provide for reciprocal representation. They should, therefore, normally be invited to Congress.

United Nations Children's Fund (UNICEF)  
 United Nations Conference on Trade and Development (UNCTAD)  
 United Nations Convention on Biodiversity (UNCBD)  
 United Nations Convention to Combat Desertification (UNCCD)  
 United Nations Development Programme (UNDP)  
 United Nations Educational, Scientific and Cultural Organization (UNESCO)  
 United Nations Environment Programme\* (UNEP)  
 United Nations Framework Convention on Climate Change (UNFCCC) Secretariat\*  
 United Nations Human Settlements Programme (UN-Habitat)  
 United Nations Industrial Development Organization (UNIDO)  
 United Nations Institute for Training and Research (UNITAR)  
 United Nations Disaster Risk Reduction (UNDRR)  
 United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA)  
 United Nations Office on Drugs and Crime (UNODC)  
 United Nations Population Fund (UNFPA)  
 United Nations University (UNU)  
 United Nations\*(UN)  
 UN Women  
 Universal Postal Union\*(UPU)  
 World Bank\*  
 World Food Programme (WFP)  
 World Health Organization\*(WHO)  
 World Intellectual Property Organization (WIPO)  
 World Tourism Organization\*(UNWTO)  
 World Trade Organization (WTO)

#### **ORGANIZATIONS WITH AN AGREEMENT OR WORKING ARRANGEMENTS WITH WMO PROVIDING FOR REPRESENTATION**

Abdus Salam International Centre for Theoretical Physics (ICTP)  
 African Union (AU)  
 Agency for the Safety of Air Navigation in Africa and Madagascar (ASECNA)  
 Arab Centre for the Studies of Arid Zones and Dry Lands (ACSAD)  
 Arab League Educational, Cultural and Scientific Organization (ALECSO)  
 Arab Organization for Agricultural Development (AOAD)  
 Assembly of French Speaking International Civil Servants (AFFOI)  
 Association of Hydro-Meteorological Equipment Industry (HMEI)  
 Association of Private Meteorological Services (PRIMET)  
 Baltic Marine Environment Protection Commission (Helsinki Commission)  
 Caribbean Meteorological Organization (CMO)  
 Central African Economic and Monetary Community (CEMAC)  
 Comprehensive Nuclear Test Ban Treaty Organization (CTBTO) Preparatory Commission  
 Cooperation Council for the Arab States of the Gulf (GCC)  
 Danube Commission  
 East African Community (EAC)  
 Economic Community of West African States (ECOWAS)  
 European Centre for Medium-Range Weather Forecasts (ECMWF)  
 European Commission (EC)  
 Economic Interest Grouping for National Meteorological and Hydrological Services in Europe (ECOMET)  
 European National Meteorological Services (EUMETNET)  
 European Organization for Nuclear Research (CERN)  
 European Organization for the Exploitation of Meteorological Satellites (EUMETSAT)  
 European Space Agency (ESA)  
 Green Climate Fund (GCF)

Indian Ocean Commission (IOC)  
 Intergovernmental Council for Hydrometeorology of the Commonwealth of Independent States (ICHHCIS)  
 International Air Transport Association (IATA)  
 International Association for Urban Climate (IAUC)  
 International Committee for Weights and Measures (CIPM)  
 International Council for Research and Innovation in Building and Construction (CIB)  
 International Council for the Exploration of the Sea (ICES)  
 International Energy Agency (IEA)  
 International Federation of Red Cross and Red Crescent Societies (IFRC)  
 International Hydrographic Organization (IHO)  
 International Institute for Applied Systems Analysis (IIASA)  
 International Mobile Satellite Organization (IMSO)  
 International Ocean Institute (IOI)  
 International Organization for Standardization (ISO)  
 International Renewable Energy Agency (IRENA)  
 International Seismological Centre (ISC)  
 International Science Council (ISC)  
 International Space Environment Services (ISES)  
 International Union for the Conservation of Nature (IUCN)  
 International Union of Geodesy and Geophysics (IUGG)  
 Islamic Educational, Scientific and Cultural Organization (ISESCO)  
 Lake Chad Basin Commission (LCBC)  
 League of Arab States (LAS)  
 Niger Basin Authority (NBA)  
 Open Geospatial Consortium (OGC)  
 Organisation internationale de la Francophonie (OIF)  
 Pacific Community (SPC)  
 Parliamentary Assembly of the Mediterranean (PAM)  
 Permanent Inter-State Committee on Drought Control in the Sahel  
 Permanent Joint Technical Commission for Nile Waters (PJTC)  
 Permanent South Pacific Commission (CPPS)  
 Secretariat of the Union for the Mediterranean (UfMS)  
 South Pacific Regional Environment Programme (SPREP)  
 World Farmers' Organization (WFO)  
 World Federation of Engineering Organizations (WFEO)  
 World Organization for Animal Health (OIE)

### **ORGANIZATIONS WITH CONSULTATIVE STATUS**

The consultative status accords to a non-governmental international organization entitlement to be represented by an observer without voting rights as sessions of constituent bodies in conformity with Article 26 (b) of the WMO Convention and Resolution 2 (EC-IV) — Consultative status of non-governmental international organizations.

International Association of Broadcast Meteorology (IABM)  
 International Association of Oil and Gas Producers (OGP)  
 International Astronautical Federation (IAF)  
 International Astronomical Union (IAU)  
 International Commission on Irrigation and Drainage (ICID)  
 International Federation of Airline Pilots' Associations (IFALPA)  
 International Forum of Meteorological Societies (IFMS)  
 International Maritime Radio Committee (CIRM)  
 International Society of Biometeorology (ISB)  
 International Society of Soil Sciences (ISSS)  
 International Union of Radio Science (IURS)

Organization to the ETC Group-Action on Erosion Technology and Concentration (ETC Group)  
 World Energy Council (WEC)  
 World Federation of United Nations Associations (WFUNA)

## **OTHER ORGANIZATIONS**

African Centre of Meteorological Applications for Development (ACMAD)  
 African Development Bank (AfDB)  
 Asian Development Bank (ADB)  
 Asian Disaster Reduction Centre (ADRC)  
 Association of South-East Asian Nations (ASEAN)  
 Arctic Council Secretariat (ACS)  
 Committee on Earth Observations Satellites (CEOS)  
 Centro internacional para la investigación del fenómeno El Niño (CIIFEN)  
 Common Market for Eastern and Southern Africa (COMESA)  
 Comité Regional de Recursos Hidraulicos del Istmo Centroamericano (CRRH)  
 Communauté Economique des Etats de l'Afrique Centrale (CEEAC)  
 Coordination Group for Meteorological Satellites (CGMS)  
 Council for Europe (COE)  
 Economic Cooperation Organization (ECO)  
 European and Mediterranean Plant Protection Organization (EPP)  
 European Bank for Reconstruction and Development (EBRD)  
 European Cooperation in Science and Technology (COST)  
 European Meteorological Society (EMS)  
 Global Water Partnership (GWP)  
 Group on Earth Observations (GEO)  
 Inter-American Development Bank (IADB)  
 International Environmental Data Rescue Organization (IEDRO)  
 Inter-American Institute for Cooperation on Agriculture (IICA)  
 Intergovernmental Authority on Development (IGAD)  
 International Chamber of Shipping (ICS)  
 International Commission for the Hydrology of the Rhine Basin (CHR)  
 International Council of Aircraft Owner and Pilot Associations (IAOPA)  
 International Crop Research Institute for the Semi-Arid Tropics (ICRISAT)  
 International Research Institute for Climate and Society (IRI)  
 Latin American Energy Organization (OLADE)  
 Organization of American States (OAS)  
 Secretariat of the Antarctic Treaty (ATCM)  
 Southern African Development Community (SADC)  
 The International Rice Research Institute (IRRI)  
 World Aerospace Education Organization (WAEO)  
 World Water Council (WWC)

## **INVITATIONS GOVERNED BY RESOLUTION 39 (Cg-VII)**

State of Palestine

## **INVITATIONS TO NON-MEMBER COUNTRIES**

In accordance with Regulation 19 of the General Regulations, the following countries which are not Members of WMO but which are Members of the United Nations or which have been accorded observer status by the United Nations and which maintain Meteorological or Hydrometeorological Services shall be invited to attend Congress as observers.

Equatorial Guinea  
 Grenada

Holy See  
Liechtenstein  
Marshall Islands  
Palau  
San Marino  
Saint Kitts and Nevis  
Saint Vincent and the Grenadines

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## **Decision 4 (EC-72)**

### **FOLLOW UP TO THE CONSTITUENT BODIES REFORM TASK FORCE**

#### **The Executive Council decides:**

- (1) To express great appreciation to the chair and members of the Constituent Bodies Reform Task Force for their engagement and contributions, and guidance on the development and implementation of the governance reform;
- (2) To request the Policy Advisory Committee to: (a) prepare a plan for the evaluation of the reform of WMO constituent bodies and its follow up during the eighteenth financial period and submit it to the seventy-third session of the Executive Council (EC-73); and (b) to review the process for the nomination of experts in the technical commissions and in the Research Board in accordance with the General Regulations (2019 edition) and rules of procedure of these bodies;
- (3) To request further all Officers of the Organization and the Secretary-General to communicate the Governance system of WMO to ensure the engagement of all Members and of all relevant partner organizations in the work of the reformed bodies.

See EC-72/INF. 4(1) for more information.

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#### Decision justification:

- Resolution 36 (EC-70) – WMO Constituent Bodies Reform Transition Plan and Communication Strategy, establishing the Constituent Bodies Reform Task Force (CBRTF) foresaw its mandate until EC-72 for the delivery of a final report to the Council.
  - Resolution 35 (EC-70) – WMO Executive Council structures, established the Policy Advisory Committee as a standing body of the Executive Council dealing with matters concerning the strategy and policy of the Organization, the mandate of which (Annex to the resolution) includes optimizing WMO governance and programme structures, processes and practices.
  - Resolution 11 (Cg-18) – WMO reform - next phase, established the continuation of the reform of WMO constituent bodies during the eighteenth financial period.
-

## **Decision 5 (EC-72)**

### **WMO RESPONSE TO THE COVID-19 PANDEMIC**

#### **The Executive Council decides:**

- (1) To underline the importance of implementing the resolutions and decisions of the Congress and the Executive Council with the adjustments made necessary in light of the restrictions imposed by the COVID-19 pandemic;
- (2) To thank the Secretary-General, the Secretariat staff and the presidents of the technical commissions for the measures taken to ensure the continuity of activities of the Organization, including through the organization of online meetings, and effectively respond to the COVID-19 pandemic;
- (3) To reaffirm the importance of respecting relevant regulations and rules of procedures and fully applying them to online meetings of intergovernmental and other bodies of the Organization;
- (4) To request the Policy Advisory Committee to undertake an analysis of the impacts of the COVID-19 pandemic for the Organization, including implications for the planning of sessions of constituent bodies and their working structures and implementation of the Operating Plan in the first biennium, and provide recommendations to the Council;
- (5) To request the Secretary-General to continue monitoring the impacts of COVID-19 on the functioning of the key networks and facilities of the Organization and its Secretariat and provide an update to the next seventy-third session of the Executive Council.

#### Decision justification:

- EC-72/INF. 2.2 – Report by the Secretary-General
  - EC-72/INF. 2.5(1) – Report by the Chair of the Policy Advisory Committee
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## **Decision 6 (EC-72)**

### **VISION AND STRATEGY FOR HYDROLOGY AND ASSOCIATED PLAN OF ACTION**

#### **The Executive Council decides:**

- (1) To reiterate the benefits of developing the WMO Vision and Strategy for Hydrology and approve the annotated Table of Contents as provided in the Annex,
- (2) To request the Hydrological Coordination Panel (HCP) to:
  - (a) Continue working to provide guidance on the Declaration,
  - (b) Refine the Vision and Strategy, in line with the WMO Strategic Plan,
  - (c) Detail the Action Plan for the eight ambitions, in line with the WMO Operating Plan,



- (d) Conduct a wide consultative process with the Permanent Representatives and National Hydrological Advisers, and
- (e) Submit the resulting final version to EC-73 and then to Cg-Ext (2021).

(See EC-72/INF. 3.4 containing a first draft of the Vision and Strategy and Action Plan developed by the HCP).

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Decision justification:

- (1) Resolution 24 (Cg-18) – Vision, strategy and organizational arrangements for hydrology and water resources in WMO, requested the Executive Council to develop, with the support of the HCP a Plan of Action and draft Declaration for consideration of an extraordinary session of Congress in 2021, and
- (2) Resolution 5 (EC-71) – Hydrological Coordination Panel, in the Terms of Reference of HCP, HCP requested to develop the Vision and Strategy for Hydrology and its associated Plan of Action, to be reviewed by EC-72 in 2020 and submitted for consideration of the extraordinary session of Congress in 2021, and to develop a draft Declaration for consideration of the extraordinary session of Congress in 2021 taking into consideration the reinforcement of the importance of operational hydrology in addressing global water challenges, opportunities in the future in the broader WMO interdisciplinary context and the recommendations of the Hydrology Assembly,
- (3) The HCP at its first meeting in December 2019 and later through electronic means has developed a first draft of the Vision and Strategy and Action Plan, available as EC-72/INF. 3.4, and an annotated Table of Contents, included in the Annex to this Decision,
- (4) With respect to the Declaration, the HCP decided that before the end of 2020 it will take a final decision on whether to recommend one, based on the development of the Vision and Strategy and on an extensive consultative process,
- (5) Recommendations of the Technical Coordination Committee are contained in document EC-72/INF. 2.5(2) and those of the Policy Advisory Committee in document EC-72/INF. 2.5(1).

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## **Annex to Decision 6 (EC-72)**

# **WORLD METEOROLOGICAL ORGANIZATION VISION AND STRATEGY FOR HYDROLOGY AND ASSOCIATED PLAN OF ACTION**

## **Draft Annotated Table of Contents**

### **PART I: Vision and Strategy**

This part will present a vision statement and discuss how the long-term ambitions adopted by Congress contribute to the achievement of the strategy, how they respond to the main socioeconomic and environmental challenges and to the goals set by various international agreements, which overarching principles should guide their implementation and which are the requirements for their successful achievement.

#### **1. Vision Statement**

The HCP adopted a preliminary vision statement and an outline of the Strategic Plan for review by EC-72, to be discussed at the Hydrological Assembly in 2021 in view of its final adoption by Cg-Ext (2021).

#### **2. Context, challenges and drivers of change (Factors)**

In this section an overall analysis of the global context will be provided, emphasizing the socioeconomic drivers and the international agreements that directly and indirectly require a contribution from the hydrological sciences. Political and institutional, economic, social, technological and environmental aspects will be explored (PEST analysis).

#### **3. Long-Term Ambitions**

The eight long-term ambitions adopted by the WMO Congress will be recalled.

#### **4. Guiding Principles**

The core principles proposed by the EC Task Force on Water will be recalled and it will be discussed how they will inform the achievement of the strategy.

#### **5. Conditions for Success (from Task Team document)**

This section will describe the boundary conditions that will promote the successful implementation of the strategy, in terms of resource mobilization, institutional awareness, development of capacity, strengthening of cooperation, measures for success, satisfaction of users' requirement.

### **PART II: Action Plan (2020 to 2030)**

#### **A. Purpose**

This section describes the overall goals of the plan, and the main actors involved in its implementation.

## **B. Outcomes, Outputs, and Activities by Ambition**

Following a short introductory paragraph explaining the structure and content of the following section, for each “ambition” the section will:

- (a) Identify means by which stakeholder needs and gaps in responding to them will be assessed, documented, validated, and prioritized;
- (b) Evaluate the existing eight current WMO Major Hydrological Initiatives, as well as activities authorized by prior resolutions of the CHy as a means to support capacity development and address science and technology solutions to address key service gaps;
- (c) Identify prioritized gaps and associated requirements and propose measures to address them in conjunction with the Research Board, Services Commission, Infrastructure Commission, and other entities as appropriate;
- (d) Identify deliverables, resources required, timeline, and metrics for success;
- (e) Describe assumptions and risk at output level;
- (f) Identify roles and responsibilities among Member states, regional associations, WMO constituent bodies, Secretariat, etc.);
- (g) Specific roles and responsibilities.

## **C. Partnerships**

In this paragraph partners will be identified, the type of collaboration defined and an outreach strategy sketched.

## **D. Way Forward**

This section will highlight future development of the action plan – like regular review and evaluation process.

## **E. Terminology**

Definitions of terms used in the document (Grand Challenges, Pillars, Ambitions, Major Hydrological Initiatives....).

Appendix: 1

## **APPENDIX**

(Cg-18 and EC-71 Resolutions text, and text concerning WMO Strategic Plan)

- Formation of the Hydrological Assembly
- Formation of the Hydrological Coordination Panel
- Mandate for the Vision and Strategy for Hydrology and Associated Plan of Action, Including Major Hydrological Initiatives (Pillars)

- Relationship to the WMO Strategic Plan
- Congress-Approved Reference to Other International Agreements
- Definition of Operational Hydrology

A sample text of the content of each section can be found in EC-72/INF. 3.4.

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## Decision 7 (EC-72)

### WMO DATA POLICY

#### The Executive Council,

**Recalling** Resolution 56 (Cg-18) – Data policies and practices, in which EC was requested to establish a process for the review of the WMO data policies and practices expressed in Resolution 40 (Cg-XII) – WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities, Resolution 25 (Cg-XIII) – Exchange of hydrological data and products, and Resolution 60 (Cg-17) – WMO policy for the international exchange of climate data and products to support the implementation of the Global Framework for Climate Services,

**Further recalling** Resolution 2 (EC-71) – Data policies and practices, in which the Infrastructure Commission was requested “to provide the PAC with its analysis of the WMO data policies {...} and {...} continue the evaluation of the emerging data issue and their implication on Members and weather enterprise as a whole {...}”,

**Noting** that the Infrastructure Commission has established a Study Group on Data Issues and Policy (SG-DIP) tasked with responding to the resolutions cited above,

**Noting further** that as a result of its comprehensive review of WMO data policies and practices, SG-DIP has proposed the development of a draft Resolution on WMO Data Policy (working title: Resolution 42), with the aim of submitting it to EC-73 for its recommendation to the WMO Extraordinary Congress in 2021,

**Noting with appreciation** the updates provided by SG-DIP to the Executive Council via the Policy Advisory Committee (PAC-1, 11-12 May 2020, PAC-2, 17-18 August 2020) and the Technical Coordination Committee (TCC-1, 27-29 April 2020, TCC-2, 13 July 2020 and TCC-3, 1-2 September 2020) regarding the structure and purpose of the resolution and the plans and schedules for stakeholder consultations that form an integral part of the development work,

**Having considered** the recommendation provided by the Policy Advisory Committee concerning the drafting of a single WMO Data Policy,

**Having further considered** the recommendation provided by the Technical Coordination Committee on the comprehensive update of WMO data policies,

**Decides** to endorse the overall approach taken by the Infrastructure Commission and its Study Group on Data Issues and Policy, including the emerging structure of the draft Resolution 42, as shown in the Annex to the present Decision;

**Requests** the Infrastructure Commission, working closely with the Services Commission, the Research Board and other bodies, to finalize the text of the draft Resolution via the work of SG-DIP, the planned stakeholder consultations and the WMO Data Conference in November

2020 and to submit the draft text to EC-73 for its recommendation for Congress to the WMO Extraordinary Congress;

**Further requests** the Infrastructure Commission – via the upcoming TCC and PAC sessions - to continue briefing the Executive Council on the development of the draft Data Policy Resolution;

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Decision justification:

1. Resolution 56 (Cg-18) – Data Policies and Practices
2. Resolution 2 (EC-71) – Data Policies and Practices
3. Final Report of the Ad Hoc Meeting on Data Issues and Policies (11-13 February 2020)

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### **Annex to Decision 7 (EC-72)**

#### **SEPTEMBER 2020: CONCEPT, STRUCTURE AND NEXT STEPS FOR DRAFTING OF RESOLUTION 42, COMPREHENSIVE UPDATE OF WMO DATA POLICIES**

The Study Group on Data Issues and Policies (SG-DIP), taking into account the results of the analysis of national practices in the application of Resolutions 40 (Cg-12), 25 (Cg-13) and 60 (Cg-17), carried out in response to Resolution 2 (EC-71) and published during the upcoming data conference, is making good progress on the proposed update and merging of WMO data policies into a unified single data policy resolution. This document summarizes the rationale for updating WMO data policy, reviews the proposed structure of the new draft data policy resolution, and outlines next steps within the work plan.

The Study Group is pursuing the development of unified data policy resolution based on the conclusions of the ad hoc meeting on Data Issues and Policies (11-13 February 2020), convened in response to Resolution 56 (Cg-18) – Data Policies and Practices, and Resolution 2 (EC-71) – Data Policies and Practices. The ad hoc meeting concluded that, in order to guarantee access to the wealth of data required to achieve the goals laid out in the WMO Strategic Plan – which are based on an Earth system approach to monitoring, understanding and predicting weather, climate and water – a comprehensive update of WMO data policies would be needed. Furthermore, SG-DIP was of the view that WMO would maximize its visibility and impact by striving to adopt one common, overarching data policy, rather than by pursuing a set of separate resolutions structured by discipline, as has been the case in the past. The proposal from SG-DIP was thus to develop a new overarching WMO data policy resolution and submit it for consideration by the Extraordinary World Meteorological Congress in 2021 (Cg (Ext)-21). This proposal was presented and discussed at the First Session of the EC Policy Advisory Committee (PAC-1) in May 2020, during which the PAC expressed its support for the approach taken and agreed that the development of such a new draft data policy resolution should proceed.

## Concept and structure of Resolution 42

Within the overall weather, climate and water value chain, Resolution 42 focuses specifically on those observational data and derived quantitative products that are either necessary ("essential data") or highly desirable ("additional data") to exchange in order for Members to be able to deliver the necessary weather, climate, water-related and other environmental services to their constituencies.

Resolution 42 draws on elements of the three core WMO data policy resolutions for weather, water and climate, Resolutions 40, 25 and 60, respectively, and is building on the experience gathered over the years with the various strengths and weaknesses of these resolutions and their implementations.

Compared to its predecessor Resolution 40, Resolution 42 introduces the following new elements:

- In keeping with the broadening of the remit of WMO and the drive toward Earth system monitoring and prediction, the new draft resolution is intended to cover all of WMO's activity areas, and it therefore encompasses data from all WMO-relevant domains and disciplines;
- Recognizing the difficulty of including in a WMO Congress resolution on data policy a sufficient amount of detail for Members to be able to implement such a policy, the text of the resolution calls for subsequently codifying the policy in the WMO Technical Regulations wherever possible;
- Specific details on which datasets, variables, model products, etc. that belong to the categories of essential and additional data for the different domains is therefore referred to the text of the WMO Technical Regulations wherever possible;
- Recognizing the rapid rate of change of technology, and the speed of scientific developing, the text of the resolution calls for regular review and update of the policy as necessary;
- Also included are requests to the Infrastructure Commission and the Secretary General to propose, develop and implement, respectively, systems to monitor compliance of Members with the policy articulated in the resolution;

Resolution 42 is based on the four-part structure of preamble, policy, practice and guidelines known from Resolution 40. The preamble has been drafted to reflect the current policy context, including a radically transformed data landscape, and an increased and increasing demand for weather, water and climate services.

The draft text reaffirms *"As a fundamental principle of the World Meteorological Organization (WMO) and in consonance with the expanding requirements for its scientific and technical expertise, WMO commits itself to broadening and enhancing the free and unrestricted international exchange of Earth system data"*

In terms of practice, the current draft text maintains the two-part split of data into "essential" and "additional" types, with "essential" data being subject to free and unrestricted exchange. It further defines guidelines on what constitutes "essential" data in Annex 1, within seven (admittedly interlaced) disciplines/domains:

1. Weather
2. Climate
3. Hydrology

4. Atmospheric Composition
5. Cryosphere
6. Oceans
7. Space Weather

Additional annexes yet to be drafted will provide specific guidance to stakeholders in the areas of research (Annex 2), public-private engagement (Annex 3), and terms and definitions (Annex 4). Terms and definitions will be reviewed and refined by a sub-group over the next several months.

### **Work plan: Next steps**

Having agreed on a basic structure for Resolution 42, the Study Group has formed a Drafting Team to finalize the draft of the resolution. Over the next nine months, the Group will continue to review, update and refine the draft in consultations with a gradually broadening group of stakeholders, with the aim to present an effective and broadly supported version for approval at Cg (Ext)-21. Next steps include:

- Elements of the revised draft will be circulated for stakeholder review and comment during four Preparatory Theme Workshops and three Stakeholder Consultations leading up to the WMO Data Conference (16-19 November 2020), and then throughout the Conference itself.
- SG-DIP-2 (January 2021); Input from Data Conference incorporated into draft Congress resolution.
- INFCOM-3 (February 2021); Review of draft resolution, recommendation to Congress.
- PAC-3 (March 2021); final adjustment to draft Congress resolution.
- EC-73 (April 2021); Recommendation to Cg-(Ext)21 on the draft data policy resolution.
- Cg (Ext)-21; Resolution on WMO Data Policy.

## **Decision 8 (EC-72)**

### **ADOPTION OF DRAFT RESOLUTIONS RECOMMENDED BY THE TECHNICAL COORDINATION COMMITTEE**

#### **The Executive Council decides:**

- (1) To accept the recommendations of the Technical Coordination Committee (TCC), included in the report by its Chair (EC-72/INF. 2.5(2)), concerning resolutions on technical and procedural matters being submitted to the seventy-second session of the Executive Council (EC-72);
- (2) To approve by consensus and without debate the documents containing the following draft resolutions recommended by TCC:
  - Resolution 5 (EC-72) – Amendments to the *Technical Regulations, Volume II - Meteorological Service for International Air Navigation* (WMO-No. 49),

- Resolution 6 (EC-72) – Trial Phase of the International Exchange of Daily Climate Data,
- Resolution 9 (EC-72) – Postponement of the Thirteenth International Pyrheliometer Intercomparison,
- Resolution 10 (EC-72) – WMO Regional Training Centres (reconfirmation),
- Resolution 12 (EC-72) – Rules of procedure for the non-constituent bodies established by Cg-18 and EC-71.

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Decision justification: Resolution 35 (EC-70) - WMO Executive Council structures, established the Technical Coordination Committee as a standing body of the Executive Council to act as a two-way interface between the Executive Council and the technical bodies of the Organization (technical commissions, the Research Board, and other relevant bodies) and between those and the regional associations, whose mandate (Annex to the resolution) includes the provision of the necessary analytical information to inform EC decisions on technical matters.

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## **Decision 9 (EC-72)**

### **OPERATIONALIZATION OF OBJECTIVE SEASONAL FORECASTS AND TAILORED PRODUCTS ON SUB-REGIONAL SCALES**

#### **The Executive Council:**

(1) Decides to endorse the proposal on operationalization of objective seasonal forecasts and tailored products on sub-regional scales with country-level service delivery recommended by the Technical Coordination Committee (INF. 2.5(2)) as provided in the annex to the present decision, as the basis for:

- (a) Guiding the further development of operational Climate Services Information System on the sub-regional scale and support country level service delivery;
- (b) Further development of normative and regulatory material to support implementation of this proposal;

(2) Requests:

- (a) The Technical Coordination Committee to identify the activities, and necessary coordination mechanisms amongst WMO bodies and programmes, to be undertaken for implementation of the proposal;
- (b) The WMO Regional Associations and its relevant subsidiary bodies dealing with climate matters to collaborate and contribute to the implementation process, and to facilitate collection of users requirements and the development of a roadmap for mobilizing resources;
- (c) The Climate Coordination Panel to oversee the implementation of the proposal, to monitor and manage the progress and report to the EC and delivery partners on a regular basis;



- (d) The Commission for Observation, Infrastructure and Information Systems (Infrastructure Commission) and Commission for Weather, Climate, Water and Related Environmental Services and Applications (Services Commission) to provide technical coordination for the implementation of the proposal;
  - (e) The Research Board to facilitate the transition of research results into operational practice, recognizing the experience and involvement of the Subseasonal-to-Seasonal Prediction Project in this project and to continue to identify and address the relevant research needs;
  - (f) The Secretary-General to facilitate assistance to WMO Regional Climate Centres (RCCs), Regional Climate Forums (RCFs<sup>23</sup>), and NMHSs in implementing the aforesaid proposal, including through technical coordination, capacity development, and resource mobilization.
- (3) Urges:
- (a) RCCs, RCC networks and other relevant organizations cooperating on Regional Climate Forums (RCFs) worldwide to actively contribute to the implementation of the proposal in the respective regions;
  - (b) WMO Global Producing Centres for Long-Range Forecast and the Lead Centre for Multi-Model Ensemble Long-Range Forecasts to facilitate access to required data sets and ensure timely and regular provision of objective sub-seasonal and seasonal forecast products, in suitable formats to RCCs, RCFs, and NMHSs;
- (4) Invites WMO Members to support the implementation of the activities indicated in the annex.

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Decision justification:

- (1) Decision 16 (EC-68) – Country-focused results-based framework and mechanism for WMO contributions to the Global Framework for Climate Services,
- (2) Decision 18 (EC-69) – Sub-seasonal and seasonal forecasting systems,
- (3) Resolution 20 (Cg-18) – WMO contributions to the provision of climate information and services in support of policy and decision-making,
- (4) Resolution 7 (Cg-18) – Establishment of WMO technical commissions for the eighteenth financial period,
- (5) Resolution 58 (Cg-18) – Future Integrated Seamless Global Data-processing and Forecasting System collaborative framework,
- (6) Resolution 4 (EC-71) – Climate Coordination Panel,
- (7) The World Meteorological Organization Guidance on Operational Practices for Objective Seasonal Forecasting (WMO-No. 1246) published in 2020,
- (8) The results of the meeting of the Climate Coordination Panel Mechanism for WMO contributions to the GFCS held on 4-5 June 2020, which discussed and agreed on the

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<sup>23</sup> The omission of "outlook" in the name of Regional Climate Outlook Forum (RCOF) is intended to accommodate an expanded scope of activities

draft proposal on Operationalization of objective seasonal forecasts and tailored products on sub-regional scales with country-level service delivery.

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## **Annex to Decision 9 (EC-72)**

### **OPERATIONALIZATION OF OBJECTIVE SEASONAL FORECASTS AND TAILORED PRODUCTS ON SUB-REGIONAL SCALES WITH COUNTRY-LEVEL SERVICE DELIVERY**

#### **1. Description**

The current project seeks to strengthen the operationalization of the Climate Services Information System on sub-regional scales (CSIS-R) in support of a service delivery of tailored products and services addressing national and sub-regional priorities. Specifically, the project will place an emphasis on priority sectors including water, agriculture, disaster risk reduction, energy and health, identified in countries' Nationally Determined Contributions (NDC) to the Paris Agreement. A sub-regional approach to the generation of climate information is a fundamental requirement even if there is adequate capacity at national levels, as it is well-known that many countries within a sub-region share common climate drivers and it is important to ensure consistency in the way regional information is optimized and integrated into national and sub-national climate services. For more than two decades now, Regional Climate Outlook Forums (RCOFs) have come to be viewed as effective platforms to facilitate and sustain collaboration among Members within their respective domains. RCOFs, with sustained support from the World Meteorological Organization (WMO) and its partners, have spread around the world and are recognized as key elements of the Global Framework for Climate Services (GFCS) generally, and of CSIS in particular. The WMO Global RCOF Review conducted in 2017 highlighted the need for "Next Generation" RCOF processes, including the adoption of objective seasonal forecasting techniques. The main aim, therefore, is to foster a transition from the currently subjective and consensus-based seasonal outlook generation practices of RCOFs into traceable, reproducible and verifiable objective seasonal predictions, based on multi-model ensembles from dynamical climate models. The project will further enhance country-level capacity to produce and deliver tailored products and services in Africa, Asia and South America and address national and sub-regional priority needs. This will be achieved through strengthening the capacity of WMO Regional Climate Centres (RCCs) and National Meteorological and Hydrological Services (NMHSs) to:

- (a) Access, use, verify, exchange, analyse and interpret high-quality, relevant and skillful probabilistic seasonal forecasts at regional and national levels;
- (b) Co-develop and co-design, with climate information users, tailored climate information-based products and services at a sub-regional scale for Africa, Asia and South America in support of decision-making in sensitive sectors. Hydrological tailored products and services will also need to be co-developed and co-designed, enabling climate models to address the information needs of hydrological models;
- (c) Communicate information at country level and educate users and stakeholders on probabilistic seasonal forecast-based products;
- (d) Assess the socioeconomic benefits generated in the prioritized sectors.

The project takes advantage of recommendations from the "Guidance on Operational Practices for Objective Seasonal Forecasting", prepared under the auspices of the WMO's erstwhile Commission for Climatology and Commission for Basic Systems in 2019. Moreover, the project will endeavour to extend the new outlooks to cover information on hydrological conditions to fully integrate climate and water outlooks on sub-regional scales.

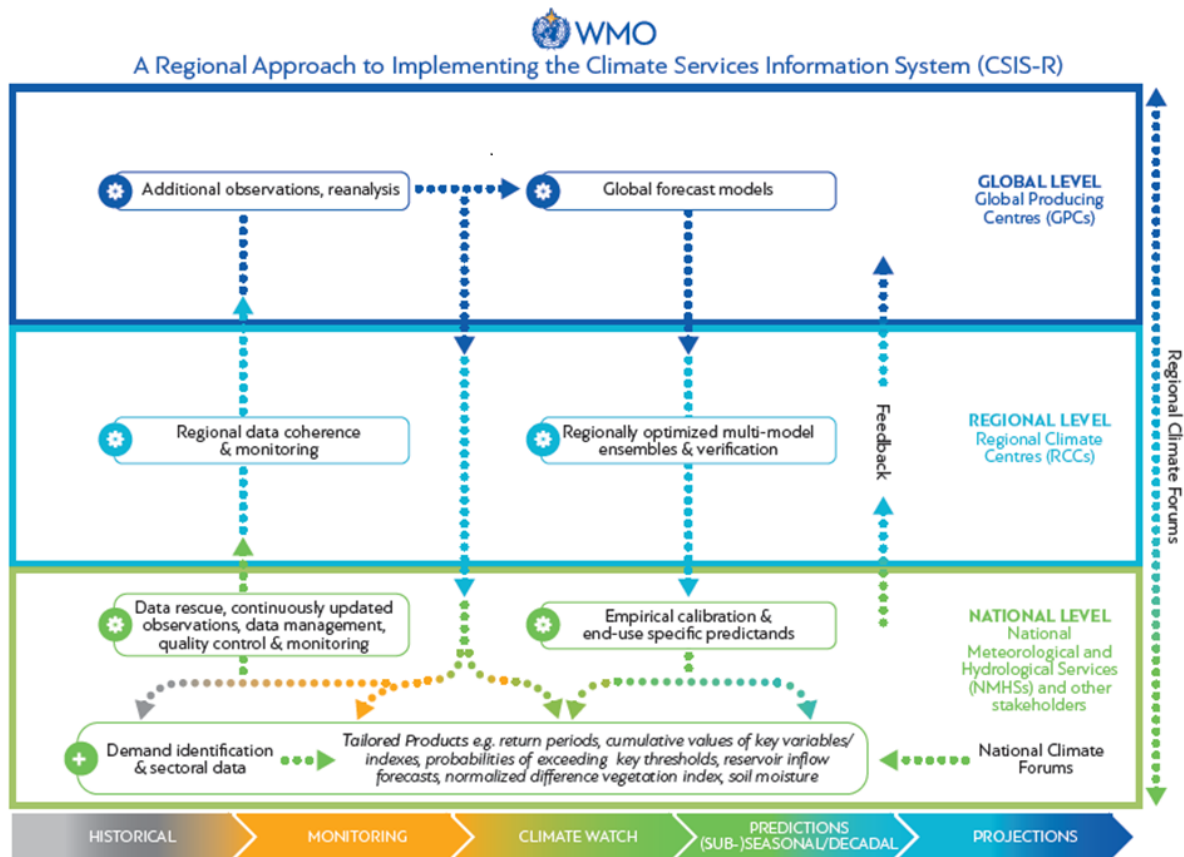
For seasonal forecasts to be beneficial to society, it is essential to identify and respond to users' needs. In this project, three RCOFs are initially engaged for systematically implementing the objective seasonal forecasting approaches: Greater Horn of Africa Climate Outlook Forum (GHACOF) covering Eastern Africa, PRÉvisions climatiques Saisonnières en Afrique Soudano-Sahélienne (PRESASS) covering the Sudano-Sahelian sub-region of Western Africa, and the South ASian Climate Outlook Forum (SASCOF<sup>24</sup>). It is also envisioned to collect expertise and lessons applicable to tropical regions other than the three initially targeted Regional Climate Outlook Forums (RCOFs) and where predictability of numerical models is relatively high including but not limited to CariCOF (Caribbean), WCSACOF (South America), ASEANCOF (Asia), PICOF (Pacific), SARCOF (Africa) and SWIOCOF (Indian Ocean), and to operationally generate a wide range of products that meet the decision-making/stakeholder needs. The project components, as described in the sections below, will be implemented over the course of four years and information regarding the outcomes and the responsible entities for each activity is provided in Table 1.

One of the most important challenges for the project is to deal with the increasingly visible changes across the physical climate system and, more broadly, the entire Earth system, with many of these changes leading to impacts on natural and human systems across various timescales. Such changes are occurring in step with a growing momentum towards Seamless GDPFS and Earth System Modelling and Prediction – from days, to months, to seasons and even a decade ahead – across various spatial scales; an overall increase of Earth system monitoring capability; and scientific advances in the realm of seasonal climate predictions.

There are several entities and functions involved in implementing the CSIS on a sub-regional scale and cascading seasonal climate forecasts from global to regional and national levels. These include the constituents of the WMO Global Data Processing and Forecasting System (GDPFS), which inter alia assimilate historical observational data primarily generated at the national level into regional (e.g., RCCs) and global (e.g., Global Producing Centres of Long Range Forecasts, GPCs-LRF) entities, which in turn generate global and regional products feeding into national operations (Figure 1.). The country and local levels are where demand for products and services is identified through stakeholder interactions. Thus, the challenge is to link together all of the CSIS components and support the full climate services value chain that will meet the specific needs of stakeholder groups (e.g., governmental agencies, farmers, energy planners and providers, health authority services, water resource managers). This context requires WMO Members to consolidate their resources, adopt standardized good practices, share data and knowledge within the region, as well as with the relevant global entities in order to provide advanced climate services.

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<sup>24</sup> See <https://public.wmo.int/en/our-mandate/climate/regional-climate-outlook-products> for more information on the RCOFs and their domains.

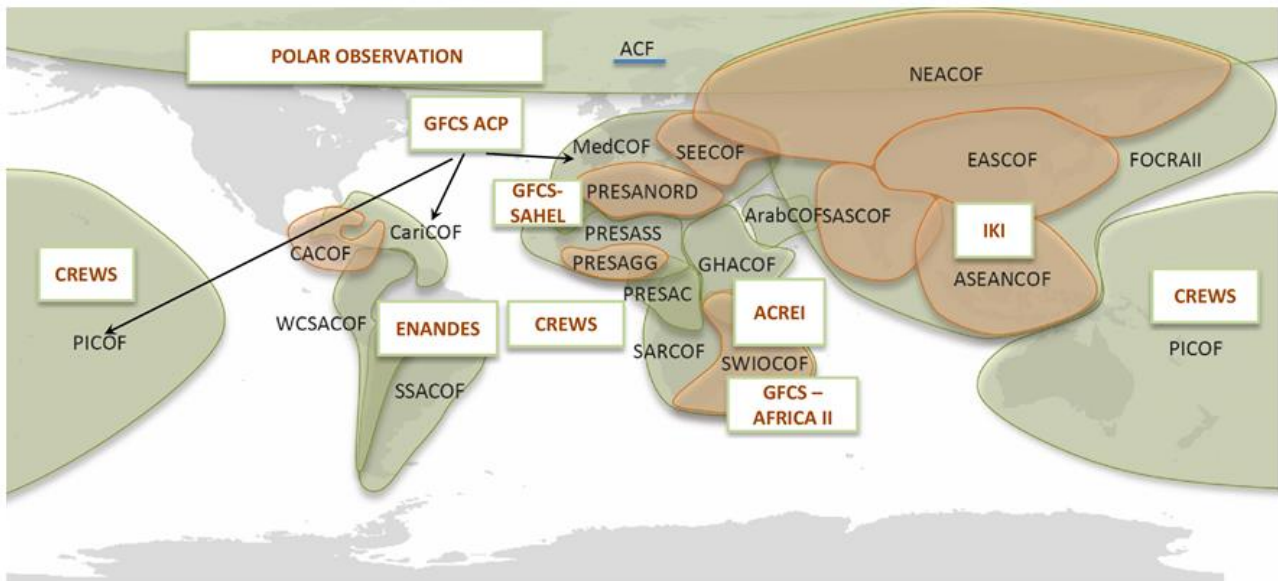


**Figure 1. Climate Services Information System operationalization with a special emphasis on a regional approach in support of country level service delivery**

## 2. Context and the need for a quantum change

At present, RCOFs exist in all regions (Figure 2.) and serve as the established vehicles for co-developing regional climate information products and services for a climatological sub-region with common climate drivers and coherence in seasonal climate variability, and for facilitating user interaction at a regional scale. Further, many RCOFs also consider potential implications of climate variations (including extremes and trends) on the most pertinent socioeconomic sectors. RCOFs bring together international, national and regional climate experts, sectoral users, and stakeholders' representatives to provide consensus-based climate predictions. In most cases, RCOFs are coordinated by the concerned RCCs, and have significantly contributed to regional collaboration and capacity development in the area of seasonal forecasting.

However, current practices in many RCOFs are known to have several drawbacks in the provision of a seasonal climate outlook including: (1) a subjective, consensus-based forecast process that is neither traceable nor reproducible; (2) forecasts are packaged in a fixed, one-size-fits-all tercile probability format that seldom addresses the requirements of specific applications; (3) forecasts are generally unavailable in digitized form, and therefore, if needed, cannot be used in terms of quantitative inputs feeding into application models or decision-support tools; (4) forecasts are not amenable to standardized verification and skill assessments, thereby making forecast quality ambiguous, and also making future improvements difficult; (5) forecast preparation requires a high degree of manual activity, which limits the frequency of forecast updates and the diversity of products.



**Figure 2. Schematic depiction of the distribution of RCOFs and their domains worldwide and the associated ongoing extra-budgetary funded initiatives with WMO engagement. The labels of RCOFs are in black and those of projects are in brown.**

There is therefore an immediate need to bring about a quantum change in RCOF operational practices, as already agreed by the Global RCOF Review 2017 on the way forward towards a new generation of RCOFs, including:

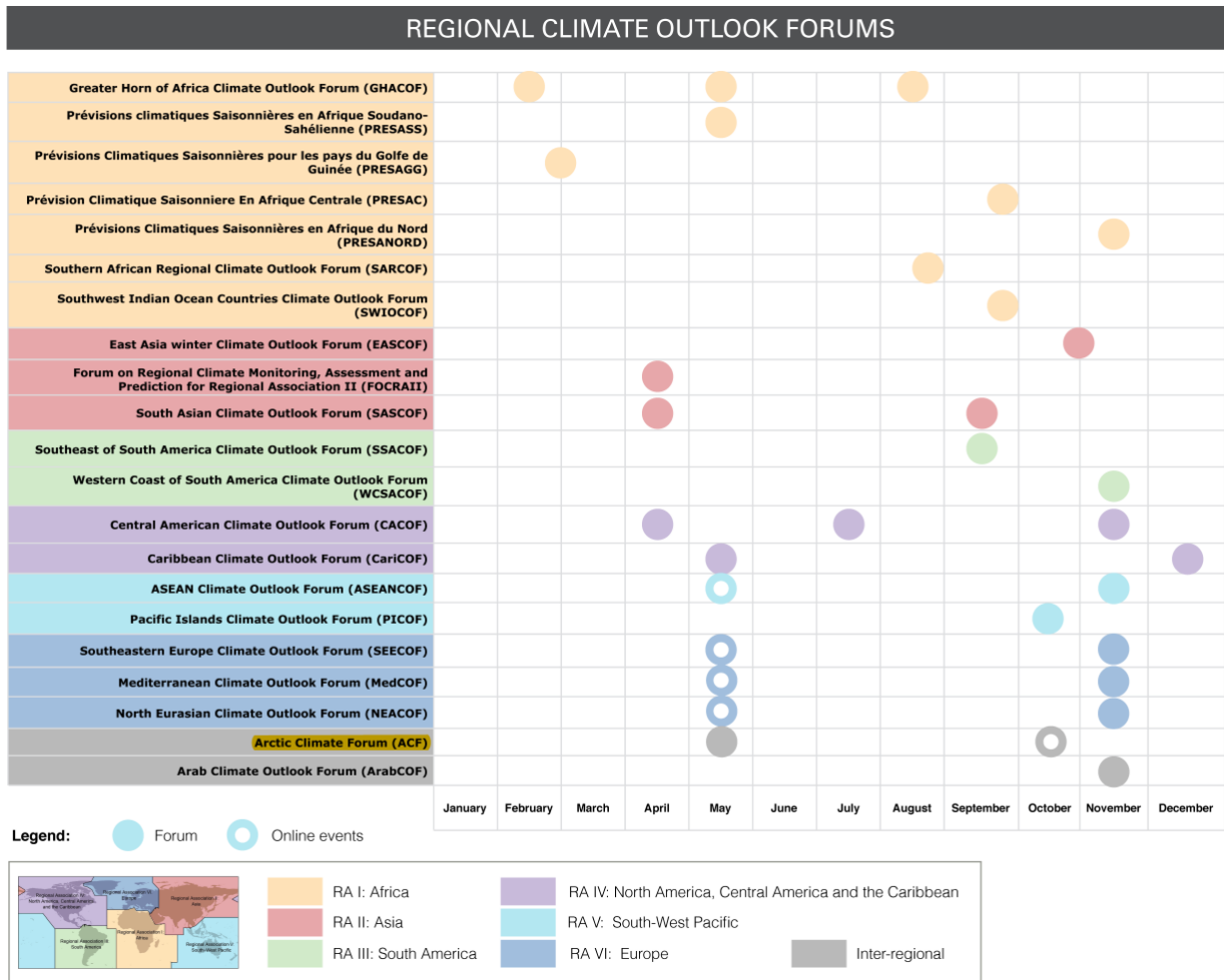
- (a) Mainstreaming objective seasonal climate forecasting underpinning RCOF products;
- (b) New approaches such as an expanded product portfolio, based on standardized operational practices;
- (c) Follow-up integration of seasonal outlooks in the decision-making process at country level;
- (d) Improved partnership engagement to co-design tailored products addressing priority sectors common to countries in the sub-region, to be operationalized in support of country-level service delivery through the RCOF process;
- (e) Organization of "centralized" training workshops to better target capacity development efforts associated with RCOFs.

### 3. Proposed actions

The project will focus on using the RCOFs as platforms for (i) strengthening the operationalization of objectively-based seasonal forecasts and for (ii) providing tailored forecast products addressing variables and thresholds relevant to specific user constituencies. The objective seasonal forecast approach firstly requires the establishment of climatology over the domain of interest and the cataloguing of observational data including WMO Integrated Global Observing System (WIGOS) Station metadata and Information System (WIS) discovery metadata. Furthermore, observational data and model outputs and products from relevant GDPFS centres need to be available and easily accessible to facilitate the production of operational objective seasonal forecasts based on the selection and evaluation of the best forecast scheme as well as model ensembles.

To perform the above-mentioned actions, the following eight specific interrelated components are proposed targeting the generation of new user-tailored outputs, and organized through

regular RCOF sessions (see Figure 3. for the RCOF calendar) in each sub-region. It is expected that these components will gradually be implemented in most WMO regions. In implementing these components, WMO will leverage the expertise of the newly established INFCOM and SERCOM Technical Commissions, the Research Board, particularly the WCRP, partners and organizations, and will build on best practices.



**Figure 3. 2020 Calendar of regional climate outlook forums worldwide**

**Component 1 - Regional Climate Data:** This component will seek to enhance the capacity of RCCs to address the observed climate data requirements for hindcast and forecast verification including the establishment of a common reference period with sector-specific impact considerations, particularly factors that are relevant to hydrologic forecast verification, regional priorities and transboundary regions (e.g., variables of interest, temporal and spatial scales and metrics of interest) – through establishing quality-controlled regional standard observational and quasi-observational (e.g. reanalyses and satellite-based estimates) databases required for routine calibration and bias correction of climate model output for seasonal forecasts, verification and climate monitoring. Observational errors can negatively affect the bias correction and calibration process, intended to correct systematic over- or under-estimation of local conditions by global models in seasonal forecasts, and consequently may introduce additional errors in calibrated seasonal forecasts (see Component 4, below). This component will also enable capacity building and technology to transmit real-time observations, typically obtained in accordance with the *WMO Manual on High Quality Global Data Management Framework for Climate* (<https://library.wmo.int/>) and associated guidelines, including WIGOS and WIS Metadata.

**Component 2 - Global Forecast Data Access:** This component will address the capacity needs of RCCs and NMHSs as regards accessing, using and interpreting long range forecasts in a timely manner, as well as assessing model performance including an improved understanding of climate variability and predictability. This component will be drawn up in close collaboration with the WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME), GPCs-LRFs and other partners operationally producing and disseminating global seasonal forecasts including the Asia Pacific Climate Centre (APCC), the Copernicus Climate Change Service (C3S), and the International Research Institute for Climate and Society (IRI).

**Component 3 - Global Model Evaluation and Selection:** This component will focus on enhancing the capacity of RCCs and NMHSs to select models with adequate skills in representing the region of interest to be used in ensemble seasonal predictions at regional and national levels. It will also help develop the verification criteria with reference to Component 6, refine the understanding of predictability sources at regional and national levels, and assess their representation in models. At present, global operational prediction centres use state-of-the-art ocean-atmosphere Coupled General Circulation Models (CGCMs) to generate multi-model ensemble based seasonal forecasts typically up to 6-12 months into the future. The selection of candidate seasonal forecasting models is a key step in the seasonal forecast development process at a regional level. All 13 models included in the WMO LC-LRFMME can be considered for the initial selection process, but this choice can vary depending on operational constraints and model performance at regional level. A comparison of objective verification scores computed over a common hindcast period provides insight into the quality of different systems that can be used for the model selection process. There is a clear need for a diagnosis of models' respective abilities to simulate the processes of climate variability at regional and national levels. To facilitate the use of multi-model ensembles, a common low complexity base, pertinent to priority sectors in priority regions, needs to be designed with maximum impact for downstream users. This component will also explore the selection of optimum models by considering issues related to the use of objective forecasts in downstream products.

**Component 4 - Regional Calibration and Bias Correction:** This component will address the methodological approaches for correcting systematic errors of dynamical seasonal forecast systems and deriving useful regional climate information. While providing detailed and sophisticated representations of Earth climate processes, GCMs used in dynamical seasonal forecast systems exhibit systematic differences relative to observed climate properties. The process of estimating forecast system quality measures, based on a series of paired hindcasts (or real-time forecasts) and observations, is referred to as verification. Comparing GCM outputs to observations provides insight into shortcomings and the ways in which various processes are represented in climate models. Disentangling the inter-connection between systematic errors in models across different regional climate regimes is crucial to improving the credibility of global climate predictions. Thus, adjusting the GCM's behaviour to match that of the observed climate is a commonly used approach to address systematic errors, and is referred to as "bias correction" or "calibration". The usefulness of this technique depends on the location and forecast lead time. There is also a need to consider the inclusion of hydrology expertise in co-design, leveraging best practice guidelines for seasonal climate and seasonal hydrological prediction guidelines.

**Component 5 - Regional Climate Outlook Statement:** This component will focus on standardizing the regional climate outlook statement, which is the flagship product of all RCOFs. Seasonal forecasts, because of regional and seasonal dependence in skill, present unique challenges to users and good communication is a key factor in how these forecasts are understood and applied in the real-world context. The probabilistic nature of seasonal forecasts should always be emphasized and the skill of the forecasts should always be communicated as part of the forecast product.

**Component 6 - Tailored Seasonal Forecast Products:** This component will focus on enhancing the capacity of RCCs and NMHSs to generate and interpret tailored seasonal prediction products in close collaboration with sectoral experts, as well as the capacity to

support stakeholders in using the tailored information. Tailored information includes forecasts of specific variables of proximate interest to specific stakeholder groups – such as vegetation, soil moisture, wind speeds, reservoir inflow, etc., and of the probabilities of exceedance of key threshold values of those variables. Development of tailored, sector-specific, forecasts relevant to RCCs and NMHSs is a topic of active research collaboration with GPCs-LRF and various sectoral partners and other stakeholders. Component 6 is essential for informing Component 3 and onwards.

**Component 7 - Forecast Schedules and Updates:** This component will address the regular updating of seasonal predictions on a fixed operational schedule tailored to the decision-support context. Seasonal forecasts must be received by users in time to inform the decision-making process. A forecast that arrives after key climate-sensitive decisions have been made will not be used. Most RCOF sessions are held ahead of the target season and typically produce the first forecast for the season. As the season progresses and new global forecasts become available during the course of the season, it is important for RCCs and NMHSs to issue regular updates, at least on a monthly basis. The GDPFS requires GPCs-LRF to adhere to fixed forecast production and dissemination cycles. To promote an active application of seasonal forecasts, RCCs and NMHSs are required to co-design with the relevant stakeholders the integration of forecast schedules and updates into climate services. Steps to operationalize and automate the process of generating objective seasonal forecasts and associated tailored products will reduce the effort needed to generate the forecasts and allow for more frequent updates throughout the season.

**Component 8 - Quality Management:** This component will focus on implementing a suitable quality management mechanism for quality assurance as well as regular assessment and upgrading of regional seasonal forecasting systems.

The overall project is also designed to leverage the expertise and support from the RCOFs steering committee members in the prioritized sub-regions, including:

- (a) PRESASS (West Africa): Seydou TRAORE (AGRHYMET), Abdou ALI (AGRHYMET), Seydou TINNI HALIDOU (AGRHYMET), Ousmane NDIAYE (ANACIM, Senegal), Andre KAMGA (ACMAD), Jean-Pierre CERON (former WMO Technical commission expert);
- (b) SASCOF (South Asia): Sivananda PAI (RCC Pune), RAJEEVAN (MoES, India), Shiromani JAYAWARDEN (DoM, Sri Lanka), Rupa Kumar KOLLI (WCRP, IITM, Pune), G. SRINIVASAN (RIMES), Richard GRAHAM(UKMO), Andrew COLMAN (UKMO), Tamara JANES (UKMO), Francis COLLEDGE (UKMO);
- (c) GHACOF (East Africa): Atheru Zachary (ICPAC), Zewdu SEGELE (ICPAC), Phillip OMONDI (ICPAC), Joseph MUTEMI (ICPAC), Richard GRAHAM (UKMO)

#### **4. Management arrangements and resources**

Overall project implementation coordination will be provided by the Climate Coordination Panel (CCP), supported by the WMO Secretariat. The CCP terms of reference and membership will permit it to convene the members of the Mechanism for WMO contributions to the GFCS (presidents of regional associations supported by regional association climate and hydrology working groups, officers of technical commissions and representatives of WMO centres) and WMO partners separately or together in order to coordinate the work.

The CCP will engage with GFCS/PAC members to foster the enabling environment required for addressing cross-cutting needs between climate service providers and water, agriculture, DRR, health, energy technical entities and stakeholders. WMO Regional Associations and constituent bodies will facilitate technical and administrative arrangements between institutions involved in planning and implementation in specific sub-regions and country groupings.



To account for hydrological considerations, the Hydrology Coordination Panel (HCP) will provide specifications synthesizing user needs and performance benchmarks to demonstrate benefits for the priority regions, i.e. GHACOF/Africa (Lake Victoria basin) and SASCOF (Ganga-Brahmaputra-Meghna GBM basin). This project, together with the HydroSOS pilots in the GBM and Lake Victoria river basins, could potentially expand the scope of RCOFs in these priority regions to include relevant national hydrology agencies, and sessions that allow for socialization through plenaries and domain-specific transboundary discussions.

The successful implementation of the proposal will require cooperation across the two technical commissions and with the research board, as well as across the various bodies within each of the technical commissions, which will be overseen by the Technical Coordination Committee. Key contributions from these entities will include:

- (a) the provision of guidance and other technical and scientific inputs into regional processes (the regional association sessions and bodies) and the operational work of the NMHSs, Regional Climate Centres, and Regional Climate Forums in each region and sub-region;
- (b) the incorporation of operational practices developed through the implementation of the project into WMO technical regulations;
- (c) the further development of normative material as needed to provide additional guidance in response to needs identified through the project.

Financial resources for activities at the sub-region and country level will be drawn from existing extra-budgetary projects where such is available (see Figure 2.). Financial resources for normative, regulatory functions in support of the project, and for coordination, will be drawn from the WMO regular budget, which will be allocated to the relevant outputs in the WMO 2020-2023 Operating Plan.

There is also a need for a seconded Project Manager (PM) based in the WMO Secretariat, or financed by voluntary contributions, or designated by a Member to manage the project from her/his respective institutional location. The PM will have overall responsibility for coordination of all proposed tasks, monitoring progress to ensure that tasks proceed and are completed on time. To this effect, the PM will maintain regular contact and communication with the relevant units within the WMO Services, Infrastructure, Science and Innovation, and Members Services Departments, under the overall supervision of the Deputy Director of the Services Department in charge of Climate.

Progress on implementation at sub-regional scales will be monitored through information submitted by WMO Regional Climate Centres in participating RCOF sub-regions through reports on the status of 28 project outputs in nine outcome areas (see Table 1., which lists the project outcomes and related outputs, as well as the entities and partners expected to contribute to each). Progress reporting on support provided by technical commissions, the Research Board and WMO and co-sponsored programmes, and participating partner organizations will be in relation to their contributions as identified in Table 1., aligned with those same outputs. Additional progress reporting will be extracted from the progress reports of the extra-budgetary projects supporting implementation in the sub-regions where such is available. Finally, the WMO Secretariat will report on the delivery of relevant WMO Operating Plan outputs, such as 1.2.4 Global-regional-national-regional-global exchange of GFCS-relevant data and products operationalized through WIS and GDPFS, 1.2.6 Tailored decision-support products on multiple timescales, ongoing monitoring of user outcomes and feedback, 1.3.9 Regional Hydrological Fora, and others (e.g. 1.2.1, 1.2.2, 1.2.5, 1.2.7-14, 1.2.16, 1.3.3-6, and 1.4.13-14). This information will be compiled, consolidated by the Secretariat and reviewed by the CCP and mechanism for WMO contributions to the GFCS as part of its overall coordination function.

In order to capitalize on the existing mechanism for WMO contributions to the GFCS and the Climate Coordination Panel, some key challenges include:

- (a) efficient technical assistance to support objective seasonal forecasts, including through advice to the Technical Coordination Committee (TCC), in bringing together the various technical contributions across the two commissions, the research board, and other bodies such as the hydrological coordination panel;
  - (b) integrating the work of these technically oriented bodies into these dynamic and ongoing regional processes;
  - (c) linking the work of WMO in this regard with that of GFCS PAC and other partner organizations, which also falls within the Climate Coordination Panel's mandate.
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**Table 1 - Project Log Frame with outcomes, outputs and proposed support**

Outputs	Constituent bodies/substructures	WMO Secretariat technical units	Programme partners
<b>Outcome 1: Regional standard observational and quasi-observational databases established for routine climate model calibration, verification and climate monitoring</b>			
<b>1.1 Historical data and products derived from current and past observations rescued and digitized</b> , and discoverable, accessible and exchangeable through WIS	<input type="checkbox"/> Standing Committee Information Management and Technology; <input type="checkbox"/> Standing Committee for Climate Services; <input type="checkbox"/> Regional Associations, Working Groups on Climate Matters; <input type="checkbox"/> Standing Committee on Earth Observing Systems and Monitoring Networks;	SERVICES/CMP/RCP, INFRASTRUCTURE/WIS, SCIENCE & INNOVATION, MEMBER SERVICES	COPERNICUS, NOAA-NCEI, ECMWF, ACRE, METEO FRANCE, UK MET OFFICE, CRU, KNMI, BOM, IEDRO
<b>1.2 All observations taken at national level incorporated</b> into national and regional datasets, and incorporated into a climate data management system (CDMS)	Standing Committee on Measurements, Traceability and Instrumentation	SERVICES/CMP, SERVICES/RCP, INFRASTRUCTURE, MEMBER SERVICES & DEVELOPMENT DEPARTMENT	COPERNICUS, ECMWF, NOAA-NCEI, ACRE, METEO FRANCE, MET OFFICE, BOM, IEDRO, IRI
<b>1.3 Customized regional reference observational databases implemented:</b> RCCs and NMHS staff members trained to use, access, exchange, and quality control standard regional observational datasets (including reanalysis and blended analysis products) to support the delivery of objective seasonal forecasting at regional and national levels	Standing Committee for Climate Services; Standing Committee Information Management and Technology; Research Board, JCB	SERVICES/CMP/RCP, INFRASTRUCTURE, SCIENCE & INNOVATION	KNMI, DWD NOAA-NCEI Copernicus University of Rovira i virgili, Spain, University of Reading, UK
<b>1.4 Road map for establishing regional reference databases:</b> assessment of observational datasets used to catalogue regional climate variability and its drivers, including reanalysis and blended analysis products. Document shall identify products required and area to be operationalized by RCCs and NMHSs for the provision of objective seasonal forecasts, and establish reference period	Research Board; Standing Committee for Climate Services; Standing Committee Information Management and Technology; Regional association, Working Groups on Climate Matters	SCIENCE & INNOVATION, SERVICES/RCP/CMP, MEMBER SERVICES	WCRP, COPERNICUS, IRI, METEO FRANCE, MET OFFICE, BOM, NOAA

<b>Outcome 2: Enhanced RCCs and NMHSs capacity on objective LRF (Long Range Forecasting)</b>			
<b>2.1 Access to Long Range Forecasts:</b> NMHS staff trained to access and use LRF from WMO LC-LRFMME and other dynamical LRF products, including these products with enhancements from RCCs	Standing Committee on Data Processing for Applied Earth System Modelling and Prediction; Research Board; Standing Committee for Climate Services; Standing Committee Information Management and Technology; Regional association	INFRASTRUCTURE S/RCP, SCIENCE & INNOVATION, MEMBER SERVICES & DEVELOPMENT DEPARTMENT	WCRP, MET OFFICE, NOAA, METEO FRANCE, IRI, GPC-LRF (Beijing, CPTC, ECMWF, Exeter, Melbourne, Montreal, Moscow, Offenbach, Pretoria, Seoul, Tokyo, Toulouse, Washington)
<b>2.2 Understanding drivers of climate variability and predictability:</b> NMHS staff trained on the diagnostics of regional climate drivers and the physical basis of seasonal prediction	Research Board; Standing Committee for Climate Services	SCIENCE & INNOVATION, SERVICES/RCP/CMP	WCRP, WISER, MET OFFICE, NOAA, METEO FRANCE, IRI, RIMES ,BOM, MET OFFICE
<b>2.3 Assessment of model performance, reliability, and sources of predictability over the region:</b> RCC and NMHS staff trained on the assessment of models' ability to capture relevant climate processes/features and selection of best suited models for the region, given the range of forecasting options from multi-model ensembles.	Research Board; Standing Committee for Climate Services;	SCIENCE & INNOVATION, SERVICES/RCP	WCRP, MET OFFICE, RIMES, NOAA, METEO FRANCE, IRI, LC-EPS verification (Tokyo), LC-LRF verification (Melbourne & Montreal)
<b>2.4 Calibration:</b> RCC and NMHS staff trained on selection in all post-processing steps required by the multi-model ensemble (MME) seasonal prediction approach including bias correction and calibration	Research Board; Standing Committee for Climate Services;	SCIENCE & INNOVATION, INFRASTRUCTURE, SERVICES/RCP	WCRP, MET OFFICE, NOAA, METEO FRANCE, IRI

<p><b>2.5 Probabilistic seasonal forecast:</b> RCC and NMHS staff trained on interpreting and emphasizing the probabilistic nature of seasonal forecasts</p>	<p>Standing Committee on Data Processing for Applied Earth System Modelling and Prediction</p>	<p>SCIENCE &amp; INNOVATION, INFRASTRUCTURE, S/RCP</p>	<p>WCRP, MET OFFICE, NOAA, METEO FRANCE, IRI, KMA</p>
<p><b>2.6 Forecast verification:</b> RCC and NMHS staff trained on verification of real-time forecasts in addition to establishing the model average predictive skill of the seasonal forecasting system</p>		<p>SCIENCE &amp; INNOVATION, INFRASTRUCTURE, S/RCP</p>	<p>WCRP, MET OFFICE, NOAA, METEO FRANCE, IRI</p>
<p><b>2.7 Downscaling and generation of national products from regionally optimized inputs:</b> RCC and NMHS staff trained on better understanding the regional and local climate in applying statistical downscaling techniques, including the relevant software tools such as the Climate Predictability Tool (CPT)</p>	<p>Research Board; Standing Committee for Climate Services</p>	<p>SCIENCE &amp; INNOVATION, S/RCP SERVICES/CMP</p>	<p>WCRP, MET OFFICE, RIMES, METEO FRANCE, IRI</p>
<p><b>Outcome 3: Subset of models established for use in ensemble seasonal predictions at regional and national levels</b></p>			
<p><b>3.1 Refinement of models ensemble (sub-set),</b> based on model performance; <b>3.2 Identification of approaches</b> for regional optimization of potential predictability <b>3.3 Understanding sources of predictability at regional and national levels</b> and their representation in models <b>3.4 Provision of seasonal forecasts</b> together with historical model performance including reliability and skill <b>3.5 Global-regional-national data exchanges facilitated</b> or ensemble seasonal forecasts through WIS and GDPS</p>	<p>Research Board; Standing Committee for Climate Services; Standing Committee on Data Processing for Applied Earth System Modelling and Prediction; Study Group on Integrated Energy Services</p>	<p>SCIENCE &amp; INNOVATION, SERVICES/RCP, INFRASTRUCTURE</p>	<p>WCRP, MET OFFICE, RIMES, METEO FRANCE, IRI</p>
<p><b>Outcome 4: Calibration and downscaling approaches identified for use in regional seasonal predictions</b></p>			
<p><b>4.1 Use and customization of approaches/tool</b> for bias correction, calibration and downscaling; <b>4.2 Assessment of downscaling approaches</b> for regional seasonal prediction including gaps and added-value and</p>	<p>Research Board; Standing Committee for Climate Services;</p>	<p>SERVICES/RCP, SERVICES/HWR, SCIENCE &amp; INNOVATION</p>	<p>WCRP, MET OFFICE, RIMES, METEO FRANCE, IRI</p>

assessment of the benefit achieved over simple use of the raw output from the best selected multi-model	Standing Committee on Hydrological Services; Study Group on Integrated Energy Services		
<b>Outcome 5: Regional climate outlook statement standardized</b>			
<b>5.1 Development of feedback mechanism; Co-development and co-design of communication and outreach material</b> including probabilistic nature seasonal forecasts and associated uncertainty	Standing Committee on Services for Agriculture; Standing Committee on Climate Services; Standing Committee on Hydrological Services; Standing Committee on Services for Disaster Risk Reduction and the Public; Study Group for Integrated Health Services; Study Group on Integrated Energy Services; Study Group on Integrated Urban Services	SERVICES/RCP, SERVICES/ACS, MEMBER SERVICES	GFCS, COPERNICUS
<b>Outcome 6: High priority tailored products routinely delivered at country level</b>			
<b>6.1 Enhanced NMHS capacity to generate and interpret tailored</b> seasonal prediction products with input from sectoral experts; <b>6.2 Enhanced NMHS capacity to regularly convene and coordinate National Climate Forums (NCFs)</b> as the primary mechanism for user engagement for communicating seasonal forecasts and co-designing user-tailored products <b>6.3 Identification of users' relevant data needs and climate thresholds</b> through user-oriented workshops; <b>6.4 Co-production of tailored decision-support products</b> in the water, agriculture, health, energy and disaster risk reduction sectors	Standing Committee on Services for Agriculture; Standing Committee on Climate Services; Standing Committee on Hydrological Services; Standing Committee on Services for Disaster Risk Reduction and the Public; Study Group for Integrated Health Services; Study Group on Services for Energy; Study Group on Integrated Urban Services;	S/ACS, S/RCP, S/HWR, MEMBER SERVICES	GFCS, COPERNICUS, UNESCO, WHO, FAO, WEMC, GEIDCO, UNDRR, UNDP

	Regional Associations; Study Group on Integrated Energy Services		
<b>Outcome 7: Climate outlook updated monthly at regional and national levels</b>			
<p><b>7.1 Regular monthly prediction updates</b> tailored to the decision-support context;</p> <p><b>7.2 Digital data access provided for regionally and nationally</b> optimized seasonal prediction products through WIS and GDPFS</p>	<p>Standing Committee on Data Processing for Applied Earth System Modelling and Prediction;</p> <p>Standing Committee on Services for Agriculture;</p> <p>Standing Committee on Climate Services;</p> <p>Standing Committee on Hydrological Services;</p> <p>Standing Committee on Services for Disaster Risk Reduction and the Public;</p> <p>Study Group for Integrated Health Services;</p> <p>Study Group on Services for Energy;</p> <p>Study Group on Integrated Urban Services;</p> <p>Standing Committee Information Management and Technology;</p> <p>Regional Association; Study Group on Integrated Energy Services</p>	S/ACS, S/RCP, S/ACS, S/CMP, S/HWR, INFRASTRUCTURE	MET OFFICE, NOAA, METEO FRANCE, IRI
<b>Outcome 8: Verification and upgrading mechanism established</b>			
<p><b>8.1 Implementation of a quality management mechanism;</b></p> <p><b>8.2 Documentation of operations and risks</b></p> <p><b>8.3 Establishment of Standard Operating Procedures at the regional and national levels, and a system of annual status reports to facilitate monitoring and evaluation as well as changes/enhancements required based on experience.</b></p>	<p>Standing Committee on Data Processing for Applied Earth System Modelling and Prediction;</p> <p>Standing Committee on Climate Services</p>	S/RCP, INFRASTRUCTURE	MET OFFICE, NOAA, METEO FRANCE, IRI

## **Decision 10 (EC-72)**

### **STUDY GROUP ON INTEGRATED HEALTH SERVICES**

#### **The Executive Council decides:**

- (1) To note the WHO-WMO Master Plan on Health, Environment, and Climate Science to Services, including the leadership and resources provided by the WHO to the implementation of the Global Framework for Climate Services Health exemplar, the WHO-WMO joint office for climate and health, and the joint implementation of activities under the Global Atmosphere Watch;
- (2) To consider at EC-73 recommendations of the Study Group regarding its activities, in conformity with the General Regulation 142 and the Rule of Procedure for Technical Commissions 5.4.6 (b), *Rules of Procedure for Technical Commissions 2019 edition* (WMO-No. 1240).

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#### Decision justification:

- Working arrangements with the World Health Organization (1952);
- Resolution 33 (Cg-18) – Advancing integrated health services, by implementing a five-year WHO-WMO Master Plan on Health, Environment, and Climate Science to Services;
- Collaboration Framework on Climate, Environment and Health between the World Meteorological Organization and the World Health Organization (2018);
- Resolution 1 (SERCOM-1) – Annex G, Study Group on Integrated Health Services;
- Recommendation by the Technical Coordination Committee contained in the report of the Chair to the Executive Council (EC-72/INF. 2.5(2)).

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## **Decision 11 (EC-72)**

### **SCALING UP EFFECTIVE PARTNERSHIPS AND SCOPE, SCALE AND PROGRESS OF WMO DEVELOPMENT PROJECTS**

#### **The Executive Council decides:**

- (1) (a) To accelerate implementation of Resolution 74 (Cg-18) - Closing the capacity gap: Scaling up effective partnerships for investments in sustainable and cost-efficient infrastructure and service delivery, related to the Alliance for Hydromet Development and the creation of the WMO Country Support initiative that is expected to provide WMO advisory services to developing and least developed countries and development partners in a structured and efficient manner, harnessing the extensive knowledge and expertise from WMO Members;



- (b) To pursue development of the Systematic Observations Financing Facility to provide financial and technical assistance to countries that otherwise could not comply in a sustainable manner with the Global Basic Observing Network concept approved by Cg-18; with the aspiration to announce the creation of the Facility at UNFCCC COP26;
  - (c) To advance efforts to promote a systematic approach at the regional level through the development of appropriate guidelines for the regional and representative offices engagement on WMO initiatives to strengthen developing country Members' capacity;
  - (d) To advance development and implementation of the new WMO community platform by improving its user-friendliness to allow the provision of high quality and timely data in support of the Country Hydromet Diagnostics, the WMO Country Support Initiative, and the Alliance for Hydromet Development to enable its use as an effective tool for assessing Members capacities, and assisting planning, monitoring, advocacy, project development and informing investments by WMO Members and partners;
  - (e) To advance development and implementation of the Country Hydromet Diagnostics in collaboration with the members of the Alliance for Hydromet Development as a tool and approach to provide NMHS peer-reviewed assessments of capacity and performance of each member and highlighting critical deficiencies to inform and guide investments related to development projects.
  - (f) To base the decision on scope and scale of future development projects implemented by the WMO Secretariat on a strategy that needs to be informed by an independent evaluation of relevance, effectiveness, efficiency and fiduciary risks of the current approach.
- (2) To request Members:
- (a) To support the successful implementation of the WMO community platform by providing on a timely basis relevant data to strengthen information gathering and sharing, as a viable tool for collecting data needed for assessing Member capabilities, planning, informing investments and guiding WMO policy and strategy development;
  - (b) To identify and engage national level partners and stakeholders who can contribute relevant data and information to the WMO community platform;
  - (c) To support the further development of the Country Hydromet Diagnostics tool and provide peer-to-peer support through the Country Support Initiative;
  - (d) To provide regular feedback to the WMO Secretary-General to continually improve the WMO community platform as a viable tool for information gathering and sharing;
- (3) To request presidents of regional associations as part of the comprehensive review of the activities and working mechanisms of the regional associations:
- (a) To actively contribute to further developing and implementing WMO initiatives to strengthen the capacity of developing Members, including the Alliance for Hydromet Development, WMO Country Support Initiative, Country Hydromet Diagnostics, Systematic Observations Financing Facility, CREWS initiative, the Global Framework

for Climate Services, Voluntary Cooperation Programme, and WMO Secretariat implemented projects;

- (b) To contribute to the development of the Country Hydromet Diagnostics in collaboration with the other relevant bodies and the Secretariat in a manner that the Country Hydromet Diagnostics through its peer-review process provides an objective assessment of attained capacity and performance of each Member and also highlights critical deficiencies to be addressed, as requested in Resolution 6 (Cg-18) - WMO Regional associations;
  - (c) To promote and support coordination and synergies among all relevant initiatives to maximize the benefits for Members;
  - (d) To pursue innovative ways of engagement and partnerships with relevant regional structures to promote visibility and support to the work of NMHSs through projects and programmes addressing Member gaps;
- (4) To request the Capacity Development Panel:
- (a) To identify opportunities and complementarity between all WMO initiatives to strengthen capacity of developing Members when reviewing the WMO Capacity Development Strategy;
  - (b) To develop appropriate guidelines supporting the implementation of the WMO initiatives to strengthen the capacity of developing country Members;
  - (c) To support the independent evaluation of the WMO Secretariat implemented projects;
- (5) To request the Secretary-General:
- (a) To provide training to Members on the use of the "Climate Rationale Methodology" developed by WMO to provide the scientific underpinning for robust climate analysis and theory of change enabling the development of feasible projects to be funded by the Green Climate Fund (GCF) or any other funding mechanism;
  - (b) To continue providing support for the full implementation of the WMO community platform; taking into consideration proposals of Members to improve the Platform so that it is more useful and easier to use;
  - (c) To establish the Country Support Initiative with the actions and governance structure as outlined in Resolution 74 (Cg-18) - Closing the capacity gap: scaling up effective partnerships for investments in sustainable and cost-efficient infrastructure and service delivery, and to complete development and implement the Country Hydromet Diagnostics; as a matter of urgency;
  - (d) To lead the development of the Systematic Observations Financing Facility (SOFF) in collaboration with the Alliance for Hydromet Development and other development partners and to report to the extraordinary Congress 2021 on the status of its development;
  - (e) To guide the engagement of regional and representative offices in the WMO initiatives to strengthen developing country Members capacity;
  - (f) To support the Capacity Development Panel in its work by commissioning an independent external evaluation to assess the current approach to the projects

implemented by the WMO Secretariat, and based on this evaluation prepare a strategy for approval by the Extraordinary session of the World Meteorological Congress in 2021 on future scope and scale of WMO projects.

- (g) To bring this draft decision to the attention of all concerned

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Decision justification:

- (1) Resolution 1 (Cg-18) – WMO Strategic Plan,
- (2) Resolution 6 (Cg-18) – WMO regional associations,
- (3) Resolution 11 (Cg-18) – WMO reform - next phase,
- (4) Resolution 34 (Cg-18) – Global Basic Observing Network
- (5) Resolution 69 (Cg-18) – Guidelines on the Role and Operations of WMO Regional and Representative Offices,
- (6) Resolution 70 (Cg-18) – Country Profile Database,
- (7) Resolution 74 (Cg-18) – Closing the Capacity Gap: Scaling up effective partnerships for investments in sustainable and cost-efficient infrastructure and service delivery,
- (8) Resolution 79 (Cg-18) – Open consultative platform “Partnership and Innovation for the Next Generation of Weather and Climate Intelligence”,
- (9) Resolution 80 (Cg-18) – Geneva Declaration – 2019: Building Community for Weather, Climate and Water Actions,
- (10) Resolution 7 (EC-71) – Capacity Development Panel,
- (11) Resolution 11 (EC-71) – Rules of Procedure for the Constituent Bodies,
- (12) Decision 12 (EC-72) – Recommendations for revision of the WMO Capacity Development Strategy
- (13) Climate issues are prominent on the global agenda catalysed by the Paris Agreement to limit global temperature rise and enhance adaptive capacity and resilience; the Sendai Framework, aimed at substantially reducing disaster risk and loss; and the sustainable development goals, which include taking urgent action to combat climate change and enhance many climate-sensitive development outcomes related to weather-, water-, and climate-sensitive sectors resulting in the increase in the investments and portfolio addressing climate adaptation, climate resilience and disaster risk reduction and in particular related to Multi-Hazard Early Warning Systems,
- (14) The current portfolio of WMO extra-budgetary funded projects in support of Members amounting to nearly US\$ 100 million. Coordination is required to maximize the effectiveness and benefits of the WMO extra-budgetary project portfolio to leverage investments and intervention by various actors. Addressing the capacity gap in a sustainable manner requires cooperation, partnerships and engagement of all stakeholders from the public, private, academic sectors and civil society,

- (15) The resolve and efforts of the WMO for addressing the capacity gap on weather-, water, climate and related environmental services through partnerships such as the Global Framework for Climate Services (GFCS), Climate Risk Early Warning Systems (CREWS) initiative, the Alliance for Hydromet Development, the Country Support Initiative (CSI), the Systematic Observations Financing Facility (SOFF), the Open Consultative Forum, among others. The role and involvement of Members in providing technical assistance and capacity development as part of the implementation of the WMO extra-budgetary project portfolio is important,
- (16) The spirit of the WMO Reform – Next phase, calling for a comprehensive review of the WMO regional concept and approaches in order to strengthen the role and enhance the effectiveness of the regional associations,
- (17) WMO regional and representative offices can play active role in promoting partnerships by actively engaging with the UN Development System at the regional level, the UN resident coordinators, and working closely with development partners and relevant regional structures to raise the visibility of the work and priorities of the WMO and Members in the regions, and promote development and implementation of programmes and projects supported by regional funding,
- (18) To ensure effective support from the WMO subsidiary bodies, the WMO Secretariat, partner agencies and Members need to be able to generate timely and high quality data and statistics to be used as the basis for regular assessments of national progress towards the agreed strategic priorities and the identification of gaps and requirements for capacity development and investments for sustainable weather-, water-, climate and related environmental services,
- (19) WMO Regional and Representative Offices play critical role in facilitating updating of member country profiles and monitoring of Members capabilities,
- (20) The country profile database is developed as a repository of information to be accessible by all Members, partners and the broader WMO community and its transition to the WMO community platform providing enhanced functionalities for data collection, visualization, dissemination, storage, which will facilitate assessment of Members capacities, strategic planning, decision-making, monitoring and evaluation, and assist with resources mobilization.

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## **Decision 12 (EC-72)**

### **RECOMMENDATIONS FOR REVISION OF THE WMO CAPACITY DEVELOPMENT STRATEGY**

(including proposed changes from the Technical Coordination Committee)

#### **The Executive Council decides:**

- (1) To request the EC Capacity Development Panel to:
  - (a) Review the *WMO Capacity Development Strategy, 2015* (WMO-No. 1133), in coordination with the technical commissions, the Research Board, the Joint WMO-IOC Collaborative Board, Regional Associations and other relevant bodies,

taking into consideration the WMO reform, regional priorities emerging needs and trends in delivery or support;

- (b) Take into account the WMO Community Platform for coordination of information and cooperation to better understand the capacity development needs of NMHS in all areas of service delivery;
  - (c) Ensure that the strategy takes into account ways in which the WMO Regional Training Centres, WMO training partners and WMO specialized Centres can increase their support to capacity development initiatives and means in view of COVID-19 effects;
  - (d) Co-opt other experts from WMO and development partners in support of its activities;
  - (e) Work towards a conclusion of this exercise and prepare a report for consideration by the EC-74;
  - (f) Taking into account the concepts of Hydromet Alliance, CSI, SOFF initiatives for their implementation.
  - (g) Encourage training institutions to embrace online training where possible
- (2) To invite Members to:
- (a) Continue to support all capacity development initiatives of WMO;
  - (b) Enable their relevant experts and institutions, to contribute to WMO activities on capacity development;
  - (c) Avail of resources, financial and in-kind, in support of capacity development activities;
- (3) To request the Secretary-General to assist the Panel in coordinating its work, particularly with UN agencies and development partners.

(See EC-72/INF. 2.5(2) for more information).

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Decision justification:

- (1) Resolution 7 (EC-71) – Capacity Development Panel,
  - (2) Recommendations of the Technical Coordination Committee contained in EC-72/INF. 2.5(2) on the coordinated approach to capacity development as a basis for steering the work of the EC Capacity Development Panel.
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### **Decision 13 (EC-72)**

#### **DEVELOPING AND SUSTAINING CORE COMPETENCIES AND EXPERTISE**

**The Executive Council decides:**

- (1) To request the EC Capacity Development Panel to:
  - (a) Evaluate and recommend processes for the assessment of impacts of education and training initiatives offered by WMO Regional Training Centres, the Secretariat and WMO Education and Training Partners, for selected representative initiatives, to ensure the continuous improvement of education and training initiatives by assessing their value to Members;
  - (b) Review and recommend mechanisms for WMO Regional Training Centres and other WMO Education and Training Partners to ensure and document that their curricula follow WMO standards, as outlined in *Technical Regulations, Volume I - General Meteorological Standards and Recommended Practices* (WMO-No. 49), regarding implementation of WMO Basic Instructional Packages (BIPs) and competency frameworks, as further detailed in the *Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology, volume I - Meteorology* (WMO-No. 1083), and the *Compendium of WMO Competency Frameworks* (WMO-No. 1209);
  - (c) Review outcomes of the WMO Global Campus initiative and recommend additional outcomes and methods for further achievement of its objectives;
  - (d) Finalize the process of reviewing the Basic Instructional Package for Meteorologists (BIP-M) and Basic Instructional Package for Meteorological Technicians (BIP-MT) by evaluating the revision proposals put forward by the expert teams and the input on these proposals derived from Members' comments, and that it be submitted to Cg-19 for approval;
  - (e) Review the WMO competency frameworks and identify relevant gaps, taking into account the WMO Reform, including competencies in environmental monitoring.
  
- (2) To request the Regional Associations, Technical Commissions and the Research Board to:
  - (a) Contribute to the finalization of the revisions of the BIP-M and BIP-MT by contributing expert reviews of the revision proposals and providing comments and recommendations on these proposals;
  - (b) Require documentation of regional training institutions, including WMO Regional Training Centres, of compliance of their curricula with WMO standards, as outlined in *Technical Regulations* (WMO-No. 49), regarding implementation of WMO Basic Instructional Packages and competency frameworks;
  - (c) Contribute to the technical expertise and advice (guided by SC-MMO) and the regional assistance required to facilitate and support the course 'Enhancing Marine Weather Forecasting Services', thereby enhancing learning opportunities for participants;

- (3) To invite Members to:
- (a) Contribute to impacts evaluation of training by requiring the cooperation of participants in training initiatives and their supervisors to provide requested input to post-training evaluation activities;
  - (b) Ask for documentation from the training providers of their staff members when curricula are offered that are intended to address WMO qualification and competency frameworks;
  - (c) Contribute to the finalization of the revisions of the BIP-M and BIP-MT by contributing expert reviews of the revision proposals and providing comments and recommendations on these proposals;
  - (d) Report via the Community Platform on competency assessments carried out within their institutions regarding WMO competency frameworks, utilizing the section on Institutional Information/Part 3, Quality Management;
  - (e) Work together through mobilization of resources towards ensuring a successful delivery of capacity development initiatives on marine meteorology;
  - (f) Provide more opportunities for utilization of distance learning as a way of responding to challenges posed by the COVID-19 pandemic and budgetary challenges, actively using the benefits provided by the WMO Global Campus initiative.
- (4) To request the Secretary-General to:
- (a) Continue to facilitate the involvement of WMO RTCs and WMO education and training collaborating institutions in WMO capacity development initiatives at regional and national levels as appropriate;
  - (b) Survey WMO Members to prioritize training needs for the next one-to-two years and determine their ability to incorporate online training at the national level; Provide support to WMO RTCs and WMO education and training collaborating institutions in coordinating distance learning initiatives at regional and national activities;
  - (c) Conduct a survey on the abilities of WMO RTCs and collaborating institutions to deliver online training, which has increasing demand due to the pandemic, and determine what resources are needed to support continued training;
  - (d) Provide support and pay more attention to the efficiency of the network of WMO RTCs and WMO education and training collaborating institutions in coordinating distance learning initiatives in regional, non-regional and national activities, including offering the Basic Instructional Packages for Meteorologists (BIP-M) and Meteorological Technicians (BIP-MT) at a distance, as a way of responding to the COVID-19 pandemic and budgetary challenges;
  - (e) Accelerate the work of the WMO Global Campus initiative to support online training delivery, which has become increasingly important during this period of limited national budgets and international travel affected by the COVID-19 pandemic;
  - (f) Assist WMO RTCs and education and training collaborating institutions to promote capacity development at the levels of leadership and management of NMHSs;

- (g) Further consolidate on the ongoing integrated approach to coordination of education and training initiatives in support of capacity development activities of WMO.

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Decision justification:

- (1) Resolution 71 (Cg-18) - The Education and Training Programme and delivery mechanism, Resolution 73 (Cg-18) - Strengthening the capacity of members in service delivery, Resolution 7 (EC-71) - Capacity Development Panel,
  - (2) Resolution 32 (EC-70) - Review plan for the Basic Instructional Package for Meteorologists and the Basic Instructional Package for Meteorological Technicians, Resolution 15 (EC-66) - Executive Council criteria for the recognition and reconfirmation of WMO Regional Training Centres, Resolution 70 (Cg-18) - Country Profile Database,
  - (3) Recognized gaps in service delivery, are shown in the last surveys: Status of Human Resources in National Meteorological and Hydrological Services - ETR-No.21; WMO Survey of National Marine and Coastal Services (2018) – see Resolution 29 (Cg-18) - Strengthening marine and coastal services; Assessment of the Coastal Inundation Demonstration Forecasting Project (2018) – see Resolution 15 (Cg-18) - Strengthening multi-hazard early warning services in areas prone to all flooding types and severe weather; Outcomes of the WMO 2018 Urban Survey; Survey on Service Delivery (2015), and Outcomes of the 2016-2017 Global Survey on Aeronautical Meteorological Service Provision, AeM Series No. 1,
  - (4) WMO Regional Training Centre External Assessment reports recognizing the lack of or limited compliance with standards described in *Technical Regulations* (WMO-No. 49), *Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology* (WMO-No. 1083) and *Compendium of WMO Competency Frameworks* (WMO-No. 1209),
  - (5) The first Marine Services Capacity Development course 'Enhancing Marine Weather Forecasting Services' was successfully developed and is intended to be rolled out over a five-year period for more than 70% of Members, as well as the successful commencement in March 2020, for the Spanish speaking Members in RA III and IV, coordinated by the WMO Education and Training Office and Marine Services Division,
  - (6) Requests received from the RA V SIDS and RA IV anglophone Members for the course 'Enhancing Marine Weather Forecasting Services' to commence as soon as possible,
  - (7) There is the need to enhance the capacity of least developed and developing countries in the area of marine services and resources required to accomplish this objective,
  - (8) The need to prioritize those SIDS for which the marine environment represents the largest part of the territory governed by the state and where the maritime sector is a significant contributor to livelihoods, food security, and sustainable development,
  - (9) The innovative approach is taken by the Secretary-General on the integrated approach of the Secretariat to the delivery of education and training activities, including capacity development at the level of management of NMHSs through series of leadership and management programmes.
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## **Decision 14 (EC-72)**

### **INTERNATIONAL METEOROLOGICAL ORGANIZATION PRIZE AND OTHER AWARDS**

**The Executive Council decides:**

- (1) To award the sixty-fifth IMO Prize to Mr David Grimes (Canada);
- (2) To invite Mr David Grimes to deliver a scientific lecture at the seventy-third session of the Council;
- (3) To award the 2020 WMO Research Award for Young Scientists to Dr B. Rohith (RA-II) for the paper entitled "Basin-wide sea level coherency in the tropical Indian Ocean driven by Madden-Julian Oscillation" by B. Rohith et al., published in Nature Communications, 2019, 10(1), 1257; <https://doi.org/10.1038/s41467-019-09243-5>;
- (4) To note the significance of the paper "Statistical downscaling of the North Atlantic tropical cyclone frequency and the amplified role of the Caribbean low-level jet in a warmer climate" by Ms Jhordanne J.P. Jones (RA-IV);
- (5) To approve the updated guidelines for granting the Professor Dr Vilho Väisälä awards as given in the annex.

See the annex to the present decision.

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Decision justification: The previous version of the Guidelines for granting the Professor Dr Vilho Väisälä Awards was adopted at the sixty-seventh session of the Executive Council (EC-67) in line with the former structure of the WMO Technical Commissions. The new Constituent Body structure enforce an update of the Guidelines. The updates mainly relate to the relevant responsibilities from the president of the Commission for Instruments and Methods of Observations to the president of the Technical Commission for Observation, Infrastructure and Information Systems (INFCOM) and the chair of the INFCOM Standing Committee on Measurements, Instrumentation and Traceability.

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## **Annex to Decision 14 (EC-72)**

### **Guidelines for Granting the Professor Dr Vilho Väisälä Awards**

#### **1. The Professor Dr Vilho Väisälä Award for an Outstanding Research Paper on Instruments and Methods of Observation**

***Purpose***

The purpose of the Professor Dr Vilho Väisälä Award for an Outstanding Research Paper on Instruments and Methods of Observation is to encourage and stimulate interest in research in the field of instruments and methods of observation in support of WMO Programmes.

### **Criteria for granting the award**

The award shall recognize an outstanding paper published in a scientific journal, or a summary of a successfully defended Ph.D. thesis for:

- (a) The significance of its topic;
- (b) The novelty of its ideas and methods;
- (c) The value of its results to WMO Programmes.

## **2. The Professor Dr Vilho Väisälä Award for the Development and Implementation of Instruments and Methods of Observation in Developing Countries**

### **Purpose**

The purpose of the Professor Dr Vilho Väisälä Award for the Development and Implementation of Instruments and Methods of Observation in Developing Countries is to encourage and stimulate capacity development in instruments and methods of observation for the WMO Integrated Global Observing System (WIGOS) in developing countries.

### **Criteria for granting the award**

The award shall be granted for an outstanding paper published in a scientific journal, or a significant technical report, a project report or a summary of a successfully defended Ph.D. or MSc. thesis for:

- (a) The significance of its contribution to the long-term stability and reliability of meteorological and related environmental observations in developing countries;
- (b) The relevance to the observing systems in developing countries;
- (c) The value of its results to, and their impact on, WMO Programmes and key priority areas.

## **3. Submission of nominations for the awards**

- (a) The Permanent Representatives of Members of WMO will be invited to submit to the Secretary-General not more than two nominations and the corresponding papers/reports for each award that were published during the 24-month period preceding the year in which the award is granted and that have not previously won an international prize, indicating the title of the award for which each submission is being made;
- (b) Papers/reports for each submission shall be provided in electronic format and in a WMO working language (original or translation). Submitters are strongly encouraged to provide these papers/reports in English. If that is not possible, they shall submit an extended *précis* in English to facilitate assessment of their merit.

## **4. Selection of candidatures**

- (a) The chair of the Standing Committee on Measurements, Instrumentation and Traceability (SC-MINT) of the Commission for Observation, Infrastructure and Information Systems (INFCOM), in consultation with the president of INFCOM, invites three distinguished scientists in the field of instruments and methods of observation, who would serve as assessors for both awards;
- (b) For each award, each assessor should allot a mark to each paper, which should be in the range of 0 (lowest) to 5 (highest) and submit the evaluation to the Secretary-General. The evaluation should be based on the criteria defined above with equal weight being assigned to each of the three criteria mentioned under 1 and 2 above;
- (c) The final selection of the winner, or winners, for each award, is made by the Selection Committee established for this purpose by the Executive Council for a period of four years. The Committee consists of three members and, *ex officio*, the president of INFCOM;
- (d) The Executive Council Selection Committee may decide not to recommend an award if the papers/reports submitted are not of a sufficiently high standard.

## 5. Nature of the awards

Each award consists of a diploma, a medal and a sum of US\$ 10 000; the latter could be shared between co-authors. The award is granted on a biennial basis.

## 6. Award ceremony

The award ceremony shall normally take place during the conjoint WMO Technical Conference on Meteorological and Environmental Instruments and Methods of Observation and the exhibition of meteorological and environmental instruments, related equipment and services.

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## Decision 15 (EC-72)

### REVIEW OF THE MEMBERSHIP OF BODIES ESTABLISHED BY CONGRESS AND THE EXECUTIVE COUNCIL

**The Executive Council decides** on the following appointments, replacements and changes in the composition of the bodies established by Congress and the Executive Council:

#### **Research Board** (Resolution 3 (EC-71) – Membership of the Research Board)

On the recommendation of the Research Board (EC-72/INF. 2.5(2)):

Mr D. Terblanche (South Africa) appointed as Vice-chair of the Research Board, Mr A. Romanov replaces Mr A. Khristoforov as representative of the WMC Moscow, and Ms A.-E. Croitoru (Romania) appointed as representative of RA VI.

The Council authorizes the President to appoint one representative of RA I, one representative of INFCOM, one social science expert for enhancing the link to SIDS and LDCs, representatives

from major global and regional research funding organizations and relevant national science foundations and one expert in hydrology, all to be proposed by the Chair of the Research Board following consultation with the appropriate bodies.

**Policy Advisory Committee** (Annex to Resolution 35 (EC-70) — Policy, scientific and technical advisory bodies reporting to the Executive Council)

Ms D. Campbell replaces Mr D. Grimes, Ms V. Schwarz replaces Mr J.M. Lacave, First Vice-President Ms A.C. Saulo replaced Ms M. Renom Molina as Acting president of Regional Association III until RA III-18 session in November 2020 (also in TCC).

**Panel of Experts on Polar and High Mountain Observations, Research and Services** (Resolution 6 (EC-71) — Executive Council Panel of Experts on Polar and High-Mountain Observations, Research and Services)

Ms D. Campbell appointed as Co-chair to replace Mr D. Grimes.

**Capacity Development Panel** (Resolution 7 (EC-71) — Capacity Development Panel)

On the recommendation of the Panel (EC-72/INF. 2.5(8)):

Mr J. Ogren (USA) appointed as Vice-chair of the Panel.

Include in the membership of the Panel: (a) one representative of the Hydrological Coordination Panel, (b) one representative of INFCOM, (c) one representative of SERCOM, and (d) representative of the Research Board, and (e) one representative of JCB.

**Joint Scientific Committee for the WCRP** (Decision 65 (EC-70) – Review of subsidiary bodies and other bodies reporting to the Executive Council)

The term of appointment is renewed for a further 2-year term, from 1 January 2021 to 31 December 2022, for the following four current eligible members: Mr J. Christensen (Denmark), Ms H. Cleugh (Australia), Mr T. Peter (Germany), and Mr M. Visbeck (Germany), as agreed between the WCRP co-sponsors.

The membership of the JSC WCRP in the future will be dealt with by the Research Board as stated in its Rules of Procedure approved through Resolution 12 (EC-72) – Rules of procedure for the non-constituent bodies established by Cg-18 and EC-71.

**EC Task Force on the Comprehensive Review of the WMO Regional Concept** (Resolution 2 (EC-72) – Activities and working mechanisms of the regional associations).

The membership comprises the Third Vice-president of WMO (Chair), presidents and vice-presidents of regional associations, and interested EC members.

The Council authorizes the President to approve up to 6 EC members to be proposed by the presidents of regional associations in consultation with EC members.

**IMO Prize Selection Committee** (Rules of Procedure for the Executive Council (2020 edition), WMO-No. xx)

Ms P. Endersby replaces Ms A. Kijazi.

**Vaisala Award Selection Committee** (Annex to Decision 14 (EC-72) – Guidelines for Granting the Professor Dr Vilho Väisälä Awards).

Mr M. Mohapatra appointed as a member.

**WMO Staff Pension Committee** (Resolution 21 (EC-XXXV) – WMO Staff Pension Committee)

Mr V. Coskun appointed as member to replace G. Navarro.

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Decision justification:

- (1) Designation of acting members of the Executive Council by correspondence since EC-71.
- (2) Expiration of terms of experts that served on certain bodies.
- (3) The appointments approved by the WMO President in the intersessional period are reported in EC-72/INF. 2.1.

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## Decision 16 (EC-72)

### REPORTS OF OVERSIGHT BODIES

**The Executive Council decides to:**

- (1) Note the report and endorse the recommendations of the Financial Advisory Committee (FINAC) when making decisions on financial and budgetary matters under agenda item 6 (EC-72/INF. 7(5));
- (2) Note the report and endorse the recommendations of the WMO Audit Committee when dealing with respective matters (EC-72/INF. 7(4)), giving due regard to the Audit Committee's concern about the potential for conflicts of interests to arise in cases in which the Internal Oversight Office performs administrative reviews of staff appeals, as the Committee understood the finalized amended staff regulations and rules will entrust that Office to carry out;
- (3) Note the report and to consider the recommendations of the External Auditor, in accordance with Financial Regulation 15.10 when dealing with financial statements under agenda item 6.1 (EC-72/INF. 7(3)), as well as the recommendations of FINAC-39 with respect to reporting on to the Executive Council on how these recommendations were implemented;
- (4) Note the annual accountability report of the Internal Oversight Office in accordance with Financial Regulation 13.10 (EC-72/INF. 7(1)) and request that the Internal Oversight Office provide in future reports additional pertinent information on misconduct complaints received, including, with due regard to confidentiality, the general category of misconduct alleged, whether any allegations were substantiated, whether any allegations required an investigation, the entity or entities involved in performing any such investigations, as well as whether management took or intends to take any action on the complaints;

- (5) Endorse the proposed response to the recommendations of the Joint Inspection Unit (JIU) addressed to the legislative bodies of WMO, except for recommendations 2 and 4 from the JIU report "Review of Whistleblower Policies and Practices in UN System Organizations," as reviewed by the WMO Audit Committee, and note that JIU recommendations have been addressed appropriately by the Secretary-General (EC-72/INF. 7(2));
- (6) Request the Secretary-General to continue providing support to the JIU in its work and to implement its recommendations in a timely manner;
- (7) Note the report of the Ethics Office (EC-72/INF. 7(6)) with due consideration to the recommendation of the Audit Committee that WMO management consider increasing the percentage of time devoted to WMO by the Ethics Officer, which WMO and the International Telecommunications Union (ITU) currently share.

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Note: The reports of the oversight bodies will be presented to the Council by Chairs/ Heads of offices. Recommendations contained in the reports will be addressed by the Council when dealing with relevant agenda items.

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## APPENDIX 4. LIST OF PARTICIPANTS

### 1. Officers of the session

Gerhard ADRIAN	President
Andrea Celeste SAULO (Ms)	First Vice-President
Albert MARTIS	Second Vice-President
Agnes KIJAZI (Ms)	Third Vice-President

### 2. Ex officio members

Daouda KONATE	President of RA I
Abdullah A. AL MANDOOS	President of RA II
Andrea Celeste SAULO (Ms)	Acting President of RA III
Evan THOMPSON	Acting President of RA IV
'Ofa FA'ANUNU	President of RA V
Michael STAUDINGER	President of RA VI

### 3. Elected members

Aderito Celso Felix ARAMUGE	Member
Mamadou Lamine BAH	Member
Peter BINDER	Member
Diane CAMPBELL (Ms)	Member
Silvio CAU	Member
Omar CHAFKI	Member
Volkan Mutlu COSKUN	Member
Penny ENDERSBY (Ms)	Member
Carlos Edison Carvalho GOMES	Member
Andrew JOHNSON	Member
Dwikorita KARNAWATI (Ms)	Member
Jongseok KIM	Member
Arlene LAING (Ms)	Member
Yaming LIU (Ms)	Member
Sani Abubakar MASHI	Member
Mrutyunjay MOHAPATRA	Member
Virginie SCHWARZ (Ms)	Acting member
Yasuo SEKITA	Member
Igor SHUMAKOV	Acting member

Sahar TAJBAKSH MOSALMAN (Ms)	Member
Ken TAKAHASHI	Member
Simplice TCHINDA TAZO	Member
Fetene Teshome TOLA	Member
Louis UCCELLINI	Member
Franz UIRAB	Member
Chin Ling WONG (Ms)	Member

#### 4. Alternates and advisers

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Sarah JONES (Ms)	Adviser
Harald KOETHE	Adviser
Matthieu MASBOU	Adviser
Klaus-Juergen SCHREIBER	Adviser
Philipp VON CARNAP	Adviser

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Monikumar RAMAKRISHNAN	Adviser
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Barry ALIOU	Adviser
Conde MANDIOU	Adviser

##### **Peter BINDER**

Nir STAV	Alternate
Moritz FLUBACHER	Adviser
Fabio FONTANA	Adviser

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Doris FORTIN (Ms)	Alternate
Heather AUCOIN (Ms)	Adviser
Veronique BOUCHET (Ms)	Adviser
David HARPER	Adviser



Russ WHITE	Adviser
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Paolo CAPIZZI	Adviser
Kleanthis NICOLAIDES	Adviser
Adriano RASPANTI	Adviser
<b>Volkan Mutlu COSKUN</b>	
Murat ALTINYOLLAR	Alternate
Tayfun DALKILIC	Adviser
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Simon GILBERT	Adviser
Steven GREEN	Adviser
Karen MCCOURT (Ms)	Adviser
Simon MCLELLAN	Adviser
Holly SEALEY (Ms)	Adviser
Aileen SEMPLE (Ms)	Adviser
Steven John STRINGER	Adviser
Jeremy TANDY	Adviser
Bruce TRUSCOTT	Adviser
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John FENWICK	Adviser
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Nelly Florida RIAMA (Ms)	Adviser
Bagus Rachmat RIEVAN	Adviser
Awidya SANTIKAJAYA	Adviser
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Maman SUDARISMAN	Adviser
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Hamza KABELWA	Adviser
Mathew NDAKI	Adviser
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Taesuk OH	Adviser
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Chong PEI (Ms)	Adviser
Xu TANG	Adviser
Yeyang TANG	Adviser
Zihua WANG	Adviser
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Xinping WEI	Adviser
Xianghua XU	Adviser
Qin ZENG	Adviser
Rong ZHANG (Ms)	Adviser
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## 5. Presidents of technical commissions

Michel JEAN President of INFCOM

Ian LISK President of SERCOM

## 6. Representatives of WMO Members

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Yamila Paola COSTA (Ms)

### Burkina Faso

Ulrich Jacques DIASSO

Guillaume NACOULMA

Joel ZOUNGRANA

### Canada

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Laurent CHARDON

Shannon DEGRAAF (Ms)

David HENRY

Richard HOGUE

Christopher LINKLATER

Alain PIETRONIRO

Jim YOUNG

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Mercedes MENESES (Ms)

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Hesham TAHOUN

Mohamed TAWFIK

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### **Finland**

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Jussi KAUROLA

Sami NIEMELA

Tarja RIIHISAARI (Ms)

### **Gambia (the)**

Lamin Mai TOURAY

### **Hungary**

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Mereke ABDRAKHMETOV

Danara ALIMBAYEVA (Ms)

Bakytzhan SAILYBAYEV

Almas SHABDANOV

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Milica ARSIC (Ms)

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Tracey LABAN (Ms)  
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**7. Invited experts**

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Laura D'AMBROSIO (Ms)  
Jan DANHELKA  
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Igina MAIO (Ms)  
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**8. Representatives of international organizations and other bodies****Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO)**

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Pierrick MIALLE Observer

**European Centre for Medium-Range Weather Forecasts (ECMWF)**

Florence RABIER (Ms) Observer

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Willie MCCAIRNS Observer

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Paul CUNET Observer

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**Food and Agriculture Organization of the United Nations (FAO)**

Marlos DE SOUZA Observer

Lev NERETIN Observer

**Association of Hydro-Meteorological Equipment Industry (HMEI)**

James ANDERSON Observer

Joshua CAMPBELL Observer

Dyrk PETERS Observer

**International Atomic Energy Agency (IAEA)**

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Huang WEI Observer

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Roger PULWARTY	Observer
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**Joint Inspection Unit (JIU)**

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Keiko KAMIOKA (Ms)	Observer

**World Federation of Engineering Organizations (WFEO)**

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