

Annex to Resolution 6 (Cg-18)

AMENDMENTS TO THE GENERAL TERMS OF REFERENCE OF THE REGIONAL ASSOCIATIONS (ANNEX II TO THE GENERAL REGULATIONS)

In carrying out the functions specified in Article 18 (d) of the Convention within the allotted geographical areas defined in this Annex, under the general guidance of Congress and the Executive Council and with support from the Secretariat, each regional association, in close coordination and collaboration with other bodies concerned, shall:

- (1) Coordinate and organize its Members' activities related to the planning, implementation and evaluation of agreed programmes, strategies and activities, at the regional and subregional levels;
 - (2) Ensure that WMO is visible and recognized in its Region, and engage stakeholders in regional initiatives and projects related to the strategic priorities of the Organization; promote visibility and institutional capacity-building of its Members, and identify and address critical deficiencies for long-term sustainable modern services through supporting Members in the development of national strategic plans on meteorological and hydrological services; facilitate the exchange of best practices to communicate the socioeconomic benefits of meteorological and hydrological services;
 - (3) Identify requirements amongst members and regional bodies and communicate them, together with any impediments to the timely implementation of planned programmes and activities, to the technical commissions; collaborate with Members, technical commissions and other bodies, as necessary, to support, monitor and regularly review all the regional centres established by WMO bodies, ensuring excellent performance, sustainable operations and effective services to regional Members; consult with technical commissions on the identification of common experts to assist with the sharing of regional priorities and requirements and the implementation of technical priorities and associated capacity building activities; identify technical gaps and promote training to develop future experts;
 - (4) Promote cooperation and efficiency by establishing regional networks and facilities based upon identified regional needs, in close coordination with the technical commissions concerned; monitor the performance of regional networks and facilities, and the open sharing of data and technical expertise, and require corrective measures, as necessary;
 - (5) Contribute to the WMO operating plan and other implementation plans, as necessary, to reflect agreed strategic priorities from a regional perspective and ensure the engagement of Members in focused activities aimed at achieving the expected results of the WMO Strategic Plan;
 - (6) Structure its work to address regional priorities and make the best use of the expertise of its Members to provide guidance and assistance, in accordance with the needs of the Region;
 - (7) Build and promote cooperation and partnerships with relevant regional organizations, including the United Nations Regional Economic Commissions, other United Nations bodies, subregional organizations, development partners, non-governmental organizations, professional associations and academic and research organizations;
 - (8) Advocate, through its president, with regional political and economic entities, and support Permanent Representatives in advocating with their governments, for the necessary political and financial support to Members' capabilities to ensure provision of and access to vital meteorological, climatological, hydrological and other related environmental information and services.
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Resolution 7 (Cg-18)**ESTABLISHMENT OF WMO TECHNICAL COMMISSIONS FOR THE EIGHTEENTH FINANCIAL PERIOD**

THE WORLD METEOROLOGICAL CONGRESS,

Recalling:

- (1) That the Seventeenth Congress requested the Executive Council to provide recommendations to the Eighteenth Congress on constituent body constructs,
- (2) Decision 84 (EC-68) – Governance review, and Decision 68 (EC-69) – WMO constituent body reform,
- (3) Resolution 43 (Cg-XVI) – Terms of reference of the technical commissions,

Expressing appreciation for the work carried out by the Executive Council and its Working Group on Strategic and Operational Planning concerning the construct of technical commissions,

Having examined Recommendation 25 (EC-70) – WMO technical commissions and other bodies,

Recognizing:

- (1) That, in accordance with the Convention, Congress has established and, from time to time, reviewed commissions consisting of technical experts, to study and make recommendations to Congress and the Executive Council on subjects within the purpose of the Organization,
- (2) That the technical commissions, as per their general terms of reference (Annex III to the General Regulations) have been tasked:
 - (a) To study and review advances in science and technology, keep Members informed and advise Congress, the Executive Council and other constituent bodies on these advances and their implications,
 - (b) To develop, for consideration by the Executive Council and Congress, proposed international standards for methods, procedures, techniques and practices in meteorology and operational hydrology including, in particular, the relevant parts of the Technical Regulations, guides and manuals,
- (3) That the Congress had classified the technical commissions into two groups:
 - (a) Basic commissions – dealing with basic operations and facilities, and research in atmospheric sciences,
 - (b) Applications commissions – dealing with applications to economic and social activities,
- (4) That the technical commissions have played a major role in engaging the collective expertise of Members in coordinating the design and development of globally harmonized systems and services operated by Members, and in the development of related standards and guidance, which have contributed to the achievement of the purposes of the Organization in bringing benefits to its Members,

Recognizing further:

- (1) That the rapidly changing technological and institutional environment and the growing societal demand for information and services in all WMO business areas will require a holistic and integrated approach along the service delivery value chain,
- (2) That such a holistic approach would be achieved through the consolidation and streamlining of expertise and normative work in major organizational domains covering: (a) the integrated infrastructure and methodology for Earth system observations, information management, and generation of forecasts and products, and (b) the development of applications and services, and related methodologies for service delivery to governments, citizens and economic sectors, and (c) focused scientific research and capacity development,
- (3) That the restructuring of the technical commissions is intended to support the Strategic Plan, which aims to support the development of:
 - (a) An Earth system science approach to seamless prediction from climate scales down to the microscale that is built upon the concept of the weather, water, ocean and climate linkages,
 - (b) An integrated approach to weather, water, ocean and climate linkages supporting Members' efforts to ultimately unify operational prediction systems using a fully coupled Earth system model approach, concerned with changes such as in the ocean and cryosphere, that have a direct influence on the atmosphere and other elements of the Earth system across all time scales,
 - (c) A holistic, interdisciplinary approach to services and applications with a strong focus on users and use cases, promoting an impact-based approach and supporting a common development of standards and methodologies for generic service attributes like quality, competence, fitness for purpose, accessibility, as well as innovation in service delivery (e.g. through social media),

Considering the need to maintain and strengthen the leadership of the Organization in the domains of weather, climate, water and related environmental aspects;

Considering further the review of the recommendations of the extraordinary session of the Commission for Hydrology (CHy-Ext.(2019)) by the EC Working Group on WMO Strategic and Operational Planning (WG/SOP);

Recognizing that, in view of the scale of the restructuring, which is unprecedented in the history of WMO, the transition from the existing to the new structure should be realized through a transparent and well-managed process encompassing proactive change management with special focus on communication with all stakeholders, in particular, the regional associations and their Members;

Decides:

- (1) To establish, in accordance with Article 8 (g) of the Convention, the following technical commissions for the eighteenth financial period:
 - (a) Commission for Observation, Infrastructure and Information Systems (Infrastructure Commission), with terms of reference provided in Annex 1A; and
 - (b) Commission for Weather, Climate, Water and Related Environmental Services and Applications (Services Commission), with terms of reference provided in Annex 1B;

- (2) That the fundamental working principle of the new commissions should be the inclusiveness of the weather, climate, water and other relevant environmental areas covered by the WMO constitutional purpose;
- (3) That, given the capacity development needs of Members, the efficiencies and savings gained from the restructuring of technical commissions will be re-aligned to support activities aimed at enhancing the capacity of Members;
- (4) That, due to the multidisciplinary nature and increased work volume, the composition and working arrangements of the new commissions should be elaborated to ensure a balanced representation of relevant disciplines, active and balanced regional engagement and gender considerations;
- (5) That the two technical commissions shall commence their work as early as possible in accordance with the Transition Plan provided in [Cg-18/INF. 4\(1\)](#) and the timetable provided in Annex 2 to this resolution;
- (6) That, in accordance with the final paragraph of Article 8 of the Convention, the president of each new commission and their co-vice-presidents⁶ will be elected by Congress, from amongst current presidents and vice-presidents of technical commissions and those who served during the seventeenth financial period, as a one-time measure aimed at expediting the transition to the new structure of the technical commissions;
- (7) That a Transition Team composed of the presidents and vice-presidents of existing and new technical commissions, the chairs and vice-chairs of the Research Board and the Hydrological Assembly and the presidents of regional associations, chaired by the presidents of the new commissions and the chair of the Research Board, will, by the first joint session of the new technical commissions and the Research Board in April 2020:
 - (a) ensure the orderly transition of normative functions of the technical commissions active during the seventeenth financial period and effective incorporation of their work and deliverables, that are relevant to the priorities identified in the Strategic Plan, into the new structures, (b) assess and manage risks associated with such a transition and (c) guide preparations for the first joint session of new technical commissions and the Research Board in April 2020 and develop recommendations for the establishment of their subsidiary bodies;
- (8) Upon completion of the transition period, to disband the existing technical commissions that have been active during the seventeenth financial period, as follows:
 - Commission for Basic Systems (CBS);
 - Commission for Instruments and Methods of Observation (CIMO);
 - Commission for Hydrology (CHy);
 - Commission for Atmospheric Sciences (CAS);
 - Commission for Aeronautical Meteorology (CAeM);
 - Commission for Agricultural Meteorology (CAgM);
 - Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM);
 - Commission for Climatology (CCI);

⁶ Due to the multi-disciplinary nature of the new commissions, in interpretation of Article 19 of the Convention, the office of vice-president of commissions can be shared by up to three vice-presidents.

Expresses appreciation to the presidents, vice-presidents and experts who served in the technical commissions before and during the seventeenth financial period for their leadership, commitment and contribution to the work of the Organization;

Requests the Executive Council to oversee the transition to the new technical commissions and report on the implementation of this resolution at the extraordinary session of Congress in 2021;

Requests the presidents of the new technical commissions to ensure the establishment of optimum subsidiary structures as needed to implement the Strategic Plan, recognizing a vision towards a more integrated disciplinary and interdisciplinary approach and to be structured in the most efficient and effective manner;

Requests further the presidents of the new technical commissions:

- (1) To endeavour to maximize efficiency and synergy through establishing a strong liaison with relevant internal and external bodies, including, where appropriate, joint bodies and/or inter-agency bodies as well as relevant global and regional partnerships;
- (2) To report on the subsidiary structure and the working plans of the commissions at the seventy-second session of the Executive Council (2020);
- (3) To establish working mechanisms and processes that will respond to the priorities and requirements set by Members by developing technical solutions to meet those priorities and requirements in consultation with regional associations, to ensure the solutions are feasible, affordable and implementable at the regional and national levels;
- (4) To cooperate with the presidents of the regional associations in the selection of experts nominated by Members, to ensure synergies with the respective regional bodies and other technical commissions and better leverage resources, to communicate regional requirements and ensure the implementation of the technological development at national, regional and global level;

Requests Members to support the establishment of a solid community of expertise (WMO Expert Network) that will underpin the technical commissions by nominating knowledgeable, experienced and motivated professionals in the related technical fields, taking into consideration regional and gender representativeness, and to support their work in the commissions, in terms of adequate working time and financial commitment, in order to ensure the leadership role of the commissions in the development of global standards, applying innovation and building the national, regional and global technical capacity needed to achieve the purposes of the Organization;

Requests the presidents of regional associations to work actively with their Members to ensure that nominated experts are representative of geographic, gender and technical diversity, in order to facilitate comprehensive input on regional needs and issues, as well as to facilitate implementation and uptake of evolving technical systems, standards and regulations at national and regional levels;

Requests the Secretary-General to take the required steps that will ensure the smooth transition to the new arrangement of technical commissions in accordance with the Transition Plan.

Note: This resolution replaces Resolution 43 (Cg-XVI) – Terms of reference of the technical commissions, which is no longer in force.

Annex 1 to Resolution 7 (Cg-18)

TERMS OF REFERENCE OF TECHNICAL COMMISSIONS

Note: The General Terms of Reference of Technical Commissions provided in Annex III to the General regulations will remain unchanged.

A. Commission for Observation, Infrastructure and Information Systems

General mandate

The overall scope and specific terms of reference for the Commission for Observation, Infrastructure and Information Systems (Infrastructure Commission) shall be in accordance with the purposes of the Organization defined in Article 2 of the Convention, in particular, items (a) through (c) and (e), and Regulations 180 to 196 of the General Regulations.

The Commission shall contribute to: the development and implementation of globally coordinated systems for acquiring, processing, transmitting and disseminating Earth system observations, and related standards; the coordination of the production and use of standardized analysis and model forecast fields; and the development and implementation of sound data and information management practices for all WMO Programmes and their associated application and services areas.

The work of the Commission shall encompass all approved WMO application areas, as listed in the Rolling Review of Requirements, as well as updated and emerging observing, information and infrastructure requirements.

The Commission shall promote the development of integrated systems to cover all application areas wherever possible, and shall ensure that these systems:

- (a) Are user-driven and provide Earth system observations, processed data and relevant services, products and information to Members;
- (b) Are applicable, accessible and with life-cycle management across the full range of WMO Members;
- (c) Are built on a modular and scalable principle to the extent possible;
- (d) Make full use of existing WMO and other relevant standards and regulations;
- (e) Make use of and promote public-private engagement where advantageous;
- (f) Incorporate state-of-the-art optimal and fit-for-purpose technology;
- (g) Are based on user requirements developed in coordination with the Services Commission and the Research Board;
- (h) Are building upon existing partnerships and networks among communities of practice within the service areas, which are beneficial for WMO Members.

The activities of the Commission shall be guided by the WMO Strategic Plan.

Specific terms of reference

- (a) Development and maintenance of WMO normative material related to integrated observing systems, data transmission and dissemination systems, data management systems, and data processing and forecast systems as specified in WMO Technical Regulations – the Commission shall:
 - (i) Coordinate the development of new systems and infrastructure-related regulatory material in all application areas of its scope;
 - (ii) Promote and pursue the integration of existing regulatory material;
 - (iii) Keep regulatory material up-to-date through regular amendments, as necessary;
 - (iv) Ensure the consistency of new and amended regulatory material across the application areas;
 - (v) Consider relevant scientific and technological developments to ensure the currency of the regulatory material;
 - (vi) Together with the Services Commission and the Research Board, coordinate linking science, infrastructure and services interactively;
 - (vii) Accompany each recommendation for new and amended regulatory material with its own impact, cost-benefit, and risk analysis;
- (b) Common infrastructure and systems attributes – the Commission shall:
 - (i) Promote a culture of compliance with standards and relevant regulatory material among all Members;
 - (ii) Further develop and promote the use of the Rolling Review of Requirements (RRR) for the assessment of user requirements, the assessment of available capabilities, and the development of gap mitigation strategies in order to further improve the overall systems capabilities of WMO;
 - (iii) Develop and promote a unified approach to data management across all disciplines and WMO application areas;
 - (iv) Develop common methodologies for quality assurance of observations and other data products across all application areas;
 - (v) Actively seek engagement from Earth system observational data providers from all relevant government entities, international organizations, the private sector, and academia.
- (c) Assistance to Members to enhance systems capabilities and enable effective implementation and compliance – the Commission shall:
 - (i) Consult with regional associations and Members to identify need for improvement in observing, data transmission and data management capabilities services and develop the required implementation strategies;
 - (ii) Consult with regional associations to identify experts who can participate in technical commission teams, to facilitate the implementation and uptake of evolving technical systems, standards and regulations at national and regional levels;
 - (iii) Facilitate the regional and national implementation of systems under its remit by developing guidance material aligned with new and amended regulatory material;

- (iv) In consultation with the regional associations, identify Members' needs for assistance in improving their capabilities and providing relevant guidance and capacity building, including training;
 - (v) Propose pilot and demonstration projects as necessary;
 - (vi) Facilitate the transfer of knowledge by supporting relevant events and through communication and outreach activities;
 - (vii) Provide standards and regulations for the basic measurement of variables characterising water quantity, quality and sediments;
 - (viii) Support the technical aspects of the Hydrological Status and Outlook System and the state of the water report;
- (d) Cooperation and partnership – the Commission shall:
- (i) Establish a close coordination and efficient working mechanisms with the Commission for Weather, Climate, Water and Related Environmental Services and Applications (Services Commission), relevant international organizations in the area of meteorological, hydrological, climatological and other environmental observations, information and infrastructure;
 - (ii) Establish and maintain close collaboration and coordination with WMO co-sponsored systems and programmes, and other major international observing programmes and initiatives;
 - (iii) Establish in collaboration with the Research Board consultative mechanisms with relevant scientific and operational user organizations to receive feedback and advice on systems capabilities;
 - (iv) Seek opportunities for leveraging resources through the establishment of joint, including inter-agency, bodies and projects addressing common areas of system development.

Composition

The composition of the Commission shall be in accordance with General Regulation 183.

Participation of leading technical experts in Earth system observations, information management and prediction in the fields of meteorology, hydrology, climatology, oceanography, atmospheric environment and other fields covered by the terms of reference shall be ensured by Members.

UN, international organization partners, and private partners of WMO may be invited to nominate technical experts in their areas of expertise to participate in the work of the Commission in accordance with General Regulation 183 (as amended by Resolution 75 (Cg-18)).

Working procedures

The Commission shall elect a president and up to three co-vice-presidents among the experts on the Commission and determine which of the co-vice-presidents should serve as Acting President in accordance with General Regulation 12.

The Commission shall establish effective and efficient working mechanisms and related necessary time-limited subsidiary bodies:

- (a) Establish effective and efficient working mechanisms through an adequate number of subsidiary bodies;

- (b) Make an effective use of a broad community of practice encompassing Members' collective expertise, including the private and academia sectors;
- (c) Establish a work programme with concrete deliverables and timelines, aligned with the Organization-wide Strategic and Operating Plan and monitor progress regularly using appropriate performance indicators and targets for reporting to the Executive Council and Congress;
- (d) Use electronic forms of coordination and collaboration effectively;
- (e) Establish effective coordination with other technical commissions, the Research Board, the Joint WMO-IOC Collaborative Board and other relevant bodies in particular through the Executive Council's Technical Coordination Committee (TCC), as appropriate;
- (f) Organize effective communication and outreach to inform the WMO community of ongoing work, achievements and opportunities;
- (g) Apply a system for the recognition of achievements, promotion of innovation and the participation of young professionals;
- (h) Ensure regional and gender balance and inclusiveness in all its structures and work plans;
- (i) Ensure adequate representation and consultation with communities of practice among the service areas.

B. Commission for Weather, Climate, Water and Related Environmental Services and Applications

General mandate

The overall scope and specific terms of reference of the Commission for Weather, Climate, Water and Related Environmental Services and Applications (Services Commission) shall be in accordance with the purposes of the Organization defined in Article 2 of the Convention, in particular, items (d) and (e); Regulations 180 to 196 of the General Regulations.

The Commission shall contribute to the development and implementation of globally harmonized weather-, climate-, water-, ocean- and environment-related services and applications to enable informed decision-making and the realization of socioeconomic benefits by all user communities and society as a whole.

The Commission shall encompass application areas with substructures as needed to implement the WMO Strategic Plan including, but not limited to:

- (a) Regulated and existing meteorological services (covered by WMO *Technical Regulations* (WMO-No. 49), in accordance with General Terms of Reference 2):
 - (i) aeronautical meteorological services;
 - (ii) marine and oceanographic meteorological services;
 - (iii) agrometeorological services;
 - (iv) public weather services;
 - (v) climatological services;
 - (vi) hydrological services;

- (b) Emerging services under development (currently the subject of studies and evaluation for possible inclusion in regulated services, in accordance with General Terms of Reference 1):
- (i) urban services;
 - (ii) environmental services;
 - (iii) multi-hazard early warning services;
 - (iv) polar and high mountain area services;
 - (v) health;
 - (vi) energy;
 - (vii) food security
 - (viii) water management;
 - (ix) land transportation;
 - (x) others, as may become necessary.
- (c) Potential category for hydrological services.

The Commission shall promote a holistic approach to services and service delivery and assist Members to apply:

- (a) Risk-based decision-making in support of disaster risk preparedness and reduction;
- (b) A service-oriented culture;
- (c) A strong user focus with 'fit-for-purpose' services;
- (d) Quality management in service delivery;
- (e) Standards for competence and qualification of personnel;
- (f) Mutually-beneficial public-private engagement providing optimized service delivery and added value to society;
- (g) Accelerated uptake of advanced technology for service delivery;
- (h) Systematic evaluation of socioeconomic benefits and other relevant market-oriented evaluations of products and services.

The activities of the Commission shall be guided by the WMO Strategic Plan and the WMO Strategy for Service Delivery.

Specific terms of reference

- (a) Development and maintenance of WMO normative material related to service delivery, as specified in WMO Technical Regulations, the Commission shall:
 - (i) Coordinate the development of new service-oriented regulatory material in all application areas of its scope based on identified needs of Members;

- (ii) Keep the regulatory material up-to-date through regular amendments, as necessary;
 - (iii) Ensure the consistency of new and amended regulatory material across the application areas;
 - (iv) Enhance capacity for prediction and service delivery;
 - (v) Consider relevant scientific and technological developments to ensure the currency of the regulatory material;
 - (vi) Together with the Infrastructure Commission and the Research Board, coordinate linking science, infrastructure and services interactively;
 - (vii) Accompany each recommendation for new and amended regulatory material with its own impact, cost-benefit, and risk analysis.
- (b) Common service delivery attributes – the Commission shall:
- (i) Promote a service-oriented culture in all relevant application areas including customer focus, quality management, as well as an understanding of the value and socioeconomic benefits;
 - (ii) Share best practices and develop harmonized methodologies for user engagement including the identification of requirements and the establishment of feedback mechanisms with users necessary for the continuous improvement of services;
 - (iii) Develop methodologies for impact-based products and services in all application areas, innovative service delivery methods and integrated platforms;
 - (iv) Ensure the harmonization of requirements for the competencies and qualifications of personnel involved in service delivery;
 - (v) Develop a common methodology for the verification and validation of information and service delivery as part of quality management;
 - (vi) Build, through appropriate studies and projects, a better understanding of the economics of service delivery, cost-recovery mechanisms, commercial and market elements, and develop respective guidance for Members;
 - (vii) Seek the engagement of service providers from the private sector and academia;
 - (viii) Promote global and regional partnerships, including building upon existing partnerships and networks among communities of practice among the service areas, which are beneficial for WMO Members.
- (c) Assistance to Members to enhance service delivery capabilities and enable effective implementation and compliance – the Commission shall:
- (i) Consult with regional associations and Members to identify needs for new and improved services and analyse related capabilities, and best practices;
 - (ii) Consult with regional associations to identify experts who can participate in technical commission teams, to facilitate the implementation and uptake of evolving services and applications, standards and regulations at national and regional levels;
 - (iii) Facilitate implementation by developing guidance material aligned with the promulgation of new and amended regulatory material;

- (iv) In consultation with the regional associations, identify Members' needs for assistance in improving their capabilities and providing relevant guidance and capacity-development activities, including training;
 - (v) Propose pilot and demonstration projects as necessary;
 - (vi) Facilitate the transfer of knowledge and best practices by supporting relevant events and through communication and outreach activities.
- (d) Cooperation and partnership – the Commission shall:
- (i) Establish close coordination and efficient working mechanisms with relevant international organizations such as ICAO, IMO and FAO, in the area of service delivery;
 - (ii) Establish consultative mechanisms with user organizations to receive feedback and advice on services;
 - (iii) Consider opportunities for leveraging resources through the establishment of joint, including inter-agency, bodies and/or projects addressing common areas of service delivery.

Composition

The composition of the Commission shall be in accordance with General Regulation 183.

Participation of leading technical experts in services and applications in the field of meteorology, climatology, hydrology, ocean and the other fields covered by these terms of reference, shall be ensured by Members.

UN, international organizations and private sector partners of WMO may be invited to nominate technical experts in their areas of expertise to participate in the work of the Commission in accordance with General Regulation 183 (as amended by Resolution 75 (Cg-18)).

Working procedures

The Commission shall elect a president and up to three co-vice-presidents among the experts on the Commission and determine which of the co-vice-presidents should serve as Acting President in accordance with General Regulation 12.

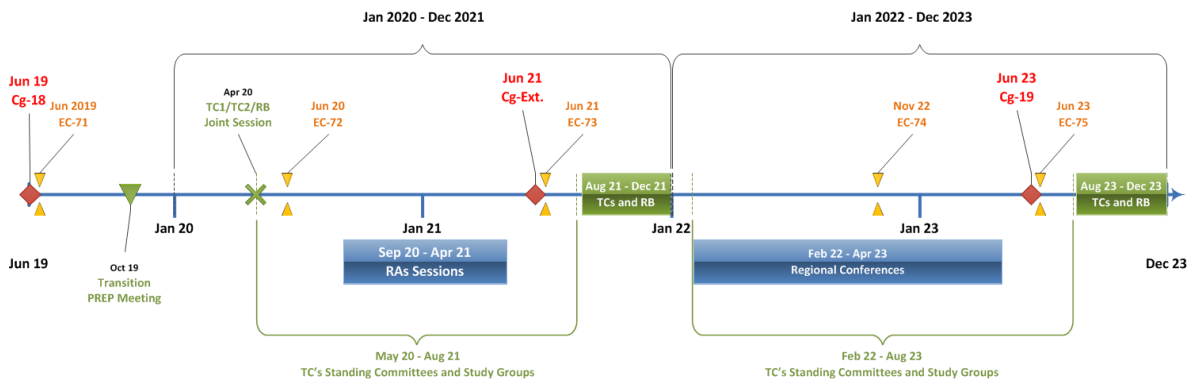
The Commission shall establish effective and efficient working mechanisms and related necessary time-limited subsidiary bodies:

- (a) Establish effective and efficient working mechanisms through an adequate number of subsidiary bodies;
- (b) Make an effective use of a broad community of practice encompassing Members' collective expertise, including the private and academia sectors;
- (c) Establish a work programme with concrete deliverables and timelines, aligned with the Organization-wide Strategic and Operating Plan and monitor progress regularly using appropriate performance indicators and targets for reporting to the Executive Council and Congress;
- (d) Use electronic forms of coordination and collaboration effectively;

- (e) Establish effective coordination with other technical commissions, the Research Board, the Joint WMO-IOC Collaborative Board and other relevant bodies, in particular through the Executive Council’s TCC, as appropriate;
- (f) Organize effective communication and outreach to inform the WMO community of ongoing work, achievements and opportunities;
- (g) Apply a system for the recognition of achievements, promotion of innovation and the participation of young professionals;
- (h) Ensure regional and gender balance and inclusiveness in all its structures and work plans;
- (i) Ensure adequate representation and consultation with communities of practice among the service areas.

Annex 2 to Resolution 7 (Cg-18)

TIMELINES FOR CONSTITUENT BODY SESSIONS DURING A FINANCIAL PERIOD



Resolution 8 (Cg-18)**RESEARCH BOARD**

THE WORLD METEOROLOGICAL CONGRESS,

Recalling:

- (1) Decision 50 (EC-69) – An integrated research and development approach, which includes the main principles to fill the gap between research and operations and to better integrate science in WMO activities,
- (2) Decision 52 (EC-69) – Early career research scientist involvement in WMO activities, which requested all Members to promote and support the early career scientist activities and make them beneficial and accessible to young researchers in their own countries and worldwide,
- (3) Recommendation 1 (CAS-17) – The role of science in serving society, which requested the Executive Council Working Group on Strategic and Operational Planning to take into account the need for a stronger WMO leadership in science and research and to strengthen the integrated role of research in the “science-for-services” context,
- (4) Recommendation 2 (CAS-17) – Seamless prediction systems, which recommended strengthening partnerships with the United Nations system and other international organizations to promote the WMO research agenda towards seamless prediction, and promoting innovation across WMO technical programmes and activities to ensure the co-design of new and improved services and products,

Considering that the implementation of the WMO Strategic and Operating Plans will benefit significantly from an effective uptake of research into operational systems and that political decision-making needs a solid scientific foundation,

Considering further the need for a mechanism to coordinate the implementation of the research programmes of the Organization to deliver on the long-term goals and strategic objectives of the Strategic Plan, assisted by the guidance provided by the Scientific Advisory Panel established by Resolution 35 (EC-70),

Decides, according to Article 8 (h) of the Convention, to establish the Research Board on Weather, Climate, Water and the Environment with the terms of reference as given in the annex to this Resolution.

Requests the Executive Council:

- (1) To appoint the Research Board members, starting with an initial core membership at the seventy-first session to ensure that the appropriate expertise is available to contribute to the transition process,
- (2) To ensure, as part of the work of the Transition Team, that rules and procedures for the Research Board and its working structures are developed as part of the revision of the Rules and Procedures,
- (3) To provide oversight on the work of the Research Board through the participation of the chair and vice-chair of the Board in the Technical Coordination Committee,
- (4) To facilitate, through the Technical Coordination Committee, the integration of science into all the domains covered by the technical commissions;

Requests the regional associations to facilitate the engagement of Members in the co-design of the research-to-operation initiatives at the regional scale;

Requests the technical commissions to facilitate the co-design of the research-to-operation initiatives;

Urges Members to encourage engagement of experts in the work of the Board and the WMO Science Forum;

Requests the Secretary-General to take the required steps that will ensure the smooth transition to the new arrangement of the Research Board in accordance with the Transition Plan.

Note: This resolution replaces Resolution 43 (Cg-XVI) – Terms of reference of the technical commissions, which is no longer in force.

Annex to Resolution 8 (Cg-18)

TERMS OF REFERENCE OF THE RESEARCH BOARD ON WEATHER, CLIMATE, WATER AND THE ENVIRONMENT

Research Board on Weather, Climate, Water and the Environment

Mandate

The Research Board shall convene the large international scientific community, who engage with WMO and who value the opportunity to enhance the societal impact of their research through the relationship with WMO. The Research Board fosters an integrated and multi-disciplinary research approach to weather, climate, water and environment, and develops all elements of the value chain, from discovery science to serving society, in the context of the Earth System science.

By gearing up international scientific and technical endeavours, the Research Board will support and grow the scientific and technological capabilities of WMO and its members, as well as consolidating and strengthening the central role played by WMO in wider international agendas for environmental science and services, for the benefit of the world (e.g. the Paris Agreement, Sendai Framework, Sustainable Development Goals).

WMO, through its sponsored and co-sponsored research programmes, plays a unique role in facilitating and integrating research where international coordination enables scientific advances that would not happen otherwise. The research programmes function by engaging with, and gaining the commitment of, the international science community to their programmes of work, and in turn ensuring that participants derive benefit from engaging in WMO activities.

The building blocks of the Research Board are the research programmes (currently WWRP, GAW and WCRP), each led by a Steering Committee with responsibility to provide the overall scientific direction of the programme. The respective Steering Committees 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.

Community engagement in WMO research programmes is broad and strong, reaching beyond WMO members to research institutes and academia. Whilst WMO is recognized for providing opportunities to work collaboratively to the greater benefit of the science, much more could be achieved to strengthen WMO convening power and to derive greater value by integrating across the research programmes. This is the mandate for establishing the Research Board.

The Research Board shall 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. The Research Board shall ensure that: (i) all elements of the value chain, from discovery science to science-based decision making, are properly built; (ii) WMO member's needs in terms of science and technological advancements are gathered; (iii) members have access to advancements in scientific and technological capabilities; (iv) less developed countries are supported to increase their research capabilities.

The Research Board shall provide the mechanisms for interfacing with the science international community in a cost-effective way, and for engaging with international and national research funding agencies.

The Research Board shall act to translate the strategic aims of WMO and decisions of the Council and Congress into overarching science, and science for services, priorities, and ensure the implementation and coordination of the research programmes to achieve these priorities in accordance with the purposes of the Organization defined in Article 2 (f) of the Convention. The Research Board shall support the implementation of the WMO Strategic Plan based on science and implementation plans for WMO research programmes and science for services activities, as approved by the Executive Council and any co-sponsor governing bodies, as appropriate.

The Research Board shall act to strengthen the development of solutions to major societal challenges by fostering Earth system approaches and seamless working across the research programmes. It shall respond to scientific challenges proposed by WMO Members and the other co-sponsors, taking into account the advice of the Scientific Advisory Panel (SAP).

The Research Board shall contribute to the design, planning and implementation of global, regional, and when needed national, research and innovation activities focusing on: improving Earth system processing, predictive and projection capabilities; advancing fundamental understanding of the Earth system; promoting the uptake of technological and scientific innovation; and maintaining a sustained user's requirement mechanism for innovation in services and research-to-operation.

Specific terms of reference

The Research Board shall:

- (a) Frame critical and technological priorities that WMO and its partners should focus on,
- (b) Guide the implementation of WMO (sponsored and co-sponsored) research programmes and act as the primary point of contact related to weather, climate, water and related environmental research aspects in WMO,
- (c) Ensure close coordination and cooperation between the WMO (sponsored and co-sponsored) research programmes, maintaining an optimal balance between weather, climate, water, ocean and environmental research initiatives and promote the synergies among such initiatives,
- (d) Ensure that the research programmes are implemented according to agreed implementation plans and that such plans are considering future technological and scientific challenges,

- (e) Convene a "WMO Science Forum", composed of researchers involved in steering, coordination and implementation of WMO research programs, and stimulate and facilitate active interactions across the members of the Forum, as well as the role of the Forum as a broad interdisciplinary sounding board for Research Board deliberations and activities,
- (f) Coordinate and oversee the interactions with the Services Commission and the Infrastructure Commission concerning innovation and research-to-operation,
- (g) Foster, coordinate and oversee WMO global and regional, and when relevant national, research and research-to-operation activities to innovate Member service delivery capacity, with emphasis on strengthening research capabilities in less developed countries and SIDS,
- (h) Maintain and coordinate a rolling review of requirement process concerning innovation and research-to-operation needs coordinating with regional associations,
- (i) Establish effective coordination with national and international funding agencies, as appropriate,
- (j) Apply a system for recognition of achievements and the participation of young professionals, and actively stimulate capacity building and inclusion of young professionals for least developed countries and SIDS.

Composition

The Research Board shall comprise scientific, technological and innovation experts who are recognized WMO Member experts, in order to make an effective use of a broad scientific and technical community encompassing Members' collective expertise, including the private and academia sectors.

In addition, UN, international organization partners, scientific funding agencies and private partners, with which WMO has agreements or arrangements, may be invited to nominate experts in scientific and technical innovation to participate in the work of the Board on a formal or ad hoc basis.

The Research Board shall be composed of around 25 members active in the fields of weather, climate, water, ocean and related environmental and social sciences, taking into account geographical balance and reflecting the WMO gender equality policy, including:

- (a) The chairs or vice-chairs of the scientific oversight/steering committees of the WMO (sponsored and co-sponsored) research programmes (WCRP, WWRP, GAW) and future research programmes that WMO may establish,
- (b) Representatives from the co-sponsors of the research programmes, currently IOC and ISC (International Science Council),
- (c) Selected chairs of partners' programmes such as Future Earth, Group on Earth Observations, World Science Adaptation Programme,
- (d) Invited experts from UN and international organization partners,
- (e) Representatives from major global and regional research funding organizations (e.g. Belmont Forum, Global Research Panel, European Commission), and at least three relevant national science foundation representatives from WMO Members,
- (f) Maximum three representatives of World Meteorological Centres, rotating every two years,

- (g) One representative from each regional association based on their capacity to connect with regional scientific institutions and activities,
- (h) To ensure a strong co-design with the Services Commission and the Infrastructure Commission, one or two representatives from each will be invited to be part of the Research Board,
- (i) Additional invited experts to respond to the functions defined in the terms of reference and to increase the link with the regional associations.

The members will be appointed by the Executive Council.

Decisions on the composition of the Research Board and the Scientific Advisory Panel shall be made independently. However, experts may not be members of the Research Board and the Scientific Advisory Panel at the same time.

The term of engagement shall be four years, except for rotating members; for ex-officio members the duration shall be based on that of their term of office.

The Chair of the Research Board shall coordinate with the presidents of regional associations, the presidents of technical commissions and the World Meteorological Centres in consultation with the Secretariat to produce a proposal for experts under (f), (g) and (h) that maximises the range of expertise, geographical and gender balance and inclusiveness.

Working procedures

The chair of the Research Board has the responsibility to ensure coordination of the work in the Research Board with the presidents of the technical commissions and regional associations, who similarly shall coordinate their work with the Research Board chair.

The Research Board is structured around and across the WMO (sponsored and co-sponsored) research programmes as an effective and efficient coordinating and steering mechanism. The WMO (sponsored and co-sponsored) research programmes are managed by their respective scientific steering committees, which may establish related necessary time-limited subsidiary bodies, such as working groups, projects or similar. Such temporary substructures shall be reviewed and if relevant be discontinued at the end of every intersessional period.

During the transition period the Research Board shall establish a focus group to design the modes of working with the TCs and RAs with regards to the terms of reference (f) and (g).

The Research Board chair, considering recommendations from the Scientific Advisory Panel, will propose the chairs of the research programmes, who will be appointed by the Executive Council. In the case of co-sponsored programmes, the appointment of the chair will be as specified in the sponsorship agreement.

During the transition period, the Research Board will be chaired by a WMO (science) vice-President, or by an EC member with a high-level scientific profile, and vice-chaired by WMO CAS President or a member of the CAS management group. The Research Board will define the procedure to elect the future chair and co-chair.

The Research Board shall meet in principle once per year.

The Board shall ensure regional and gender balance and inclusiveness in all its structures and work plans.
