

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.
