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| WEATHER CLIMATE WATER | **World Meteorological Organization**  **EXECUTIVE COUNCIL**  **Seventy-Sixth Session** 27 February to 3 March 2023, Geneva | **EC-76/Doc. 3.3(3)** |
| Submitted by: Chair of the Research Board  3.I.2023  **DRAFT 1** |

**AGENDA ITEM 3: IMPLEMENTATION OF CONGRESS DECISIONS: TECHNICAL MATTERS**

**AGENDA ITEM 3.3: Long-term goal 3: Targeted research**

# REVISED TERMS OF REFERENCE OF THE RESEARCH BOARD

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| **Summary** |
| **Document presented by:** Chair of the Research Board  **Strategic objective 2020–2023:** Strategic Goal 3: Advance targeted research  **Financial and administrative implications:** will be reflected in the Operating Plan 2024–2027  **Key implementers:** Research Board  **Time frame:** 2024–2027  **Action expected:** endorse the proposed draft Recommendation |

# GENERAL CONSIDERATIONS

### Introduction

Established by [Resolution 8 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827" \l "page=53) – Research Board, the Research Board on Weather, Climate, Water and the Environment, was established to convene the international scientific community, foster an integrated and multidisciplinary approach to weather, climate, water and environment, and develop all elements of the value cycle, from discovery science to serving society, in the context of Earth system science.

Despite challenges resulting from the COVID-19 pandemic, the Research Board has convened regularly to enhance research coordination activities, supported the ongoing functions of the World Meteorological Organization (WMO), sponsored and co-sponsored Research Programmes, developed six concept notes addressing emerging research priorities, and pursued shared governance activities with the technical commissions, regional associations, the Scientific Advisory Panel (SAP) and other partners. However, as a novel structure in the WMO Governance Reform, the evolving nature of the role of the Research Board has introduced challenges. Following a self-assessment during 2022, the membership of the Research Board decided to revise the existing Terms of Reference (RB ToR) to ensure it is fit for purpose for delivering on the Research Board’s mandate and responsibilities under the WMO Strategic Plan.

After initial reflection and brainstorming of the Research Board membership at its September 2022 meeting, the Research Board Chair, Vice-Chair and Chairs of the three Research Programmes (World Climate Research Programme, World Weather Research Programme and Global Atmosphere Watch Programme) worked together to draft a revised RB ToR. The Research Board Chair and Vice-Chair then conducted an extensive consultation with Research Board members, the Infrastructure Commission (INFCOM), the Services Commission (SERCOM), the SAP and WMO leadership. The resulting refined RB ToR was finalized and adopted by vote of the Research Board membership.

The revised RB ToR outlines how the Research Board will fulfil its mandate through effective coordination across all relevant domains and by fulfilling specific responsibilities with WMO sponsored and co-sponsored Research Programmes, technical commissions and regional associations. In addition, the RB ToR provides clarity on the future composition of the Research Board and its Management Group, with members active in relevant scientific fields and enterprise sectors and taking into account geographic and gender balance. Finally, the RB ToR clarifies the working procedures of the Research Board, including the frequency of meetings, decision-making, roles and responsibilities, representation on and service to other WMO bodies, and necessary Secretariat staffing.

**Expected action**

Based on the above, the Executive Council is invited to adopt draft Recommendation 3.3(3)/1 (EC-76).

# DRAFT RECOMMENDATION

## Draft Recommendation 3.3(3)/1 (EC-76)

### Revised Terms of Reference of the Research Board

THE EXECUTIVE COUNCIL,

**Recalling**

1. [Resolution 8 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827" \l "page=53) - Research Board,
2. [Resolution 62 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827#page=216) – A Seamless Research Structure for WMO,
3. [Resolution 3 (EC-71)](https://library.wmo.int/doc_num.php?explnum_id=10248#page=11) – Membership of the Research Board,
4. [Resolution 1 (EC-72)](https://library.wmo.int/doc_num.php?explnum_id=10504#page=10) – Effective Coordination Between Regional Associations, Technical Commissions and the Research Board
5. [Resolution 12 (EC-72)](https://library.wmo.int/doc_num.php?explnum_id=10504#page=56) – Rules of Procedure for the Non-Constituent Bodies Established by Cg-18 and EC-71

**Recognizing** the central role of the Research Board in coordinating the implementation of the Organization’s critical research directions, delivering on research priorities driven by Member needs and implementing the WMO Strategic Plan,

**Acknowledging** the contribution of the Research Board during the COVID-19 pandemic in delivering a framework for research on climatological, meteorological and environmental factors in the pandemic,

**Further recognizing** the Research Board’s delivery of research priority frameworks in exascale computing and data, AI and machine learning, advancing Earth system observations and modelling, and innovation in regions,

**Noting** the efficacy of new coordination mechanisms between the Research Board and the Technical Commissions,

**Also noting** the rapid evolution of the Research Board roles and responsibilities in the context of the WMO Governance Reform and the need for a revised Terms of Reference that further clarifies the responsibilities and collaborations with technical commissions, regional associations and the Scientific Advisory Panel,

**Having considered** recommendation of the Research Board ([EC-76/INF. 2.4(3)](https://meetings.wmo.int/EC-76/InformationDocuments/Forms/AllItems.aspx)),

**Having examined** the revised Terms of Reference of the Research Board,

**Recommends** to Congress the adoption of the revised Terms of Reference of the Research Board throughthe draft resolution provided in the [annex](#_Annex_to_draft_1) to the present recommendation.

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[Annex: 1](#Annex_to_draft_Recommendation)

## Annex to draft Recommendation 3.3(3)/1 (EC-76)

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

THE WORLD METEOROLOGICAL CONGRESS,

**Recalling**

1. [Resolution 8 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827" \l "page=53) - Research Board,
2. [Resolution 62 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827#page=216) – A Seamless Research Structure for WMO,
3. [Resolution 3 (EC-71)](https://library.wmo.int/doc_num.php?explnum_id=10248#page=11) – Membership of the Research Board,
4. [Resolution 1 (EC-72)](https://library.wmo.int/doc_num.php?explnum_id=10504#page=10) – Effective Coordination Between Regional Associations, Technical Commissions and the Research Board
5. [Resolution 12 (EC-72)](https://library.wmo.int/doc_num.php?explnum_id=10504#page=56) – Rules of Procedure for the Non-Constituent Bodies Established by Cg-18 and EC-71

**Recognizing** the central role of the Research Board in coordinating the implementation of the Organization’s critical research directions, delivering on research priorities driven by Member needs and implementing the WMO Strategic Plan,

**Acknowledging** the contribution of the Research Board during the COVID-19 pandemic in delivering a framework for research on climatological, meteorological and environmental factors in the pandemic,

**Further recognizing** the Research Board’s delivery of research priority frameworks in exascale computing and data, AI and machine learning, advancing Earth system observations and modelling, and innovation in regions,

**Noting** the efficacy of new coordination mechanisms between the Research Board and the technical commissions,

**Also noting** the rapid evolution of Research Board roles and responsibilities in the context of the WMO Governance Reform,

**Having considered** Recommendation of the Executive Council (Recommendation 3.3(3)/1 (EC-76)),

**Having examined** the revised Terms of Reference of the Research Board, as included in the [annex](#Annex_to_Resolution) to the present resolution,

**Decides** to adopt the revised Terms of Reference of the Research Board as provided in the [annex](#Annex_to_Resolution) to this resolution;

**Requests** the technical commissions and the regional associations to continue collaboration and to build with the Research Board a strong coordination mechanism to ensure optimal alignment between operational priorities and required innovation and development;

**Further requests** the Secretary-General to notify all concerned of this resolution and to update the [Research Board Rules of Procedure](https://library.wmo.int/doc_num.php?explnum_id=10504#page=57) [Secretariat].

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Note: This Resolution replaces [Resolution 8 (Cg-18)](https://library.wmo.int/doc_num.php?explnum_id=9827#page=53) - Research Board and [Resolution 3 (EC-71)](https://library.wmo.int/doc_num.php?explnum_id=10248#page=11) – Membership of the Research Board.

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

**Terms of Reference of the Research Board on Weather, Climate, Water and the Environment**

***Mandate***

Earth system research is fundamental for the continued effectiveness of WMO. The Research Board serves as the primary conduit to engage the international research community in the work of the WMO. [G. Adrian, A. Lynch]

Research in weather, climate, water and related environmental and social sciences across all elements of the WMO value cycle are carried out by scientists in academic and research institutions, and other operational institutions, primarily by though not limited to engagement with the WMO sponsored and co-sponsored Research Programmes. Research priorities are grounded in Member needs and informed through engagement with scientists, practitioners, policy makers, and civil society across regions and disciplines. [G. Adrian, A. Lynch]

The role of the Research Board is to place current scientific priorities in the context of the strategic aims of WMO and to ensure synthesis and coordination to achieve these priorities. This includes acting as a liaison between international scientific communities, WMO sponsored and co-sponsored Research Programmes, the Technical Commissions and other units of the WMO, and the Regional Associations. In this role, the Research Board will identify scientific and technological gaps, opportunities and synergies, support capacity recognition and development, and provide for coordination and exchange. In addition, the Research Board will coordinate with the Scientific Advisory Panel on the development of long-term strategy across the WMO research landscape. Research Board activities will thereby stimulate research and operational activities that are most critical for both the provision of services and knowledge support for solutions. [G. Adrian, A. Lynch]

The Research Board shall ensure that: (i) all elements of the value cycle from discovery science to technological development to policy and decision-making are supported through research; (ii) WMO Member needs in science and technology are advanced; (iii) all Members have access to desired science, technology, software and data; (iv) low- and middle-income countries are supported to increase their research and research translation capacities.

***Terms of Reference***

The Research Board shall fulfil its mandate through actions and decisions that address the following responsibilities.

1. *Strategic planning and coordination [G. Adrian, A. Lynch]*
   1. Identify critical research gaps, opportunities and priorities in support of the WMO mission. [G. Adrian, A. Lynch]
   2. Foster, coordinate and, where appropriate, oversee research to innovate Member capacity, with an emphasis on strengthening research and operational capabilities in least developed countries and small island developing states. [G. Adrian, A. Lynch]
   3. Appraise and ensure close cooperation between WMO sponsored and co-sponsored Research Programmes, supporting and informing the maintenance of an optimal balance between research initiatives, and promoting the synergies among them. [G. Adrian, A. Lynch]
   4. Identify opportunities for knowledge transfer and co-development between Research Programmes and Technical Commissions, operational centres, research communities, international organizations and negotiations, and others as appropriate.
   5. Participate in all meetings and other activities of the Scientific Advisory Panel to promote a common understanding and ensure close coordination. [G. Adrian, A. Lynch]
   6. When requested, evaluate Scientific Advisory Panel recommendations in order to provide guidance to EC and Congress on the feasibility in order to support decisions on planning and implementation by WMO constituent bodies. [G. Adrian, A. Lynch]
   7. Encourage and where appropriate, oversee mechanisms and opportunities to support researchers worldwide at every career stage and situation, with an emphasis on early career researchers and women in STEM (science, technology, engineering and mathematics) and on fostering diversity. [G. Adrian, A. Lynch]
   8. Nominate members of the Research Board as representatives of coordinating and decision-making bodies in WMO to support the effective exchange of ideas and views, and ensure responses and actions as needed.
   9. Design and plan a research day, in coordination with the Scientific Advisory Panel to be held as part of every WMO Congress. [G. Adrian, A. Lynch]
2. *Sponsored and Co-Sponsored Research Programmes*
   1. Appraise technical support and infrastructure needs at frequent intervals to ensure effective and efficient implementation. [G. Adrian, A. Lynch]
   2. Endorse and promote Strategic and Implementation Plans and milestone activities. [G. Adrian, A. Lynch]
   3. Consult on, endorse and recommend scientific steering committee leadership as defined in sponsorship and co-sponsorship agreements.
   4. Approve scientific steering committee membership as defined in sponsorship and co-sponsorship agreements.
3. *Technical Commissions*
   1. Collaborate with the WMO Technical Commissions to develop and enhance co-design, value cycle innovation and science to services. [G. Adrian, A. Lynch]
   2. Co-identify opportunities to leverage infrastructure in operational settings to accelerate research and development priorities.
   3. Support ongoing open communications to ensure knowledge transfer and co-development. [G. Adrian, A. Lynch]
4. *Regional Associations*
   1. Regularly assess innovations in value cycle activities in Regions and among Members at frequent intervals to identify synergies for knowledge transfer and co-development.
   2. Identify and support the requirements of Members, including those related to support of scientific assessments and international conventions.
   3. Identify and assess requirements for advanced training for researchers and practitioners in relevant disciplines to advance the continued effectiveness of the WMO and its Members.

***Composition***

The Research Board shall comprise experts in the natural and social sciences, engineering and technology. Board members will be selected from the full range of recognized WMO Member experts, in order to make an effective use of the international scientific community encompassing Members’ collective expertise.

The Research Board shall be composed of 25 to 30 members active in the fields of weather, climate, water, ocean and related environmental and social sciences, taking into account geographic balance and reflecting the WMO gender mainstreaming policy, including:

1. Chairs or Vice-Chairs of the currently active WMO sponsored and co-sponsored Research Programmes (initially three persons)
2. Representatives from each of the Regional Associations (6)
3. Representatives from each of the Technical Commissions (2)
4. Representatives from other WMO coordination panels and other units as appropriate (maximum 3)
5. Early CareerScientist representatives (minimum 1) [G. Adrian, A. Lynch]
6. Invited experts from the following categories as identified by the Board:
7. Academia and research organizations, including NMHSs [G. Adrian, A. Lynch]
8. World Meteorological Centres
9. Allied United Nations organizations and international organization partners
10. Scientific funding agencies
11. Private corporations
12. Least developed countries and small island developing states
13. Co-sponsor representatives
14. Experts that fill gaps to align with the needs and interests of the WMO

[G. Adrian, A. Lynch]A Management Group shall be composed as follows:

1. Chair and Vice-Chair
2. Chairs or Vice-Chairs of the Research Programmes
3. One representative selected by the Regional Association representatives, to rotate among Regions annually
4. One other member of the Research Board, selected through consultation with all Board members and taking into account all dimensions of representation within the scope of the Research Board

[G. Adrian, A. Lynch]Membership will be reviewed annually to ensure optimal composition and size. Invited experts will be solicited by open call for nominations, including self-nominations. All members shall be appointed by the WMO Executive Council on recommendation from the Chair of the Research Board following consultation with the Management Group. Except where acting as a representative, Research Board members may not simultaneously serve on the Scientific Advisory Panel.

The Chair and Vice-Chair shall be elected from the Board membership. Research Programme Chairs and Vice-Chairs are not eligible to serve in this capacity.

Terms of service shall be four years. For ex-officio members, Regional representatives, Research Programme Chairs or Vice-Chairs, and any other representative members, the term of service shall be based on that of their term of office. A maximum two terms may be served contiguously.

Experts may be invited to participate in the work of the Board by a decision of the WMO Executive Council on the recommendation of the Chair of the Research Board after consultation with the Management Group [G. Adrian, A. Lynch]

***Working Procedures***

1. The Research Board shall meet in person in Geneva once per year, and virtually or in person as needed.
2. The Board shall ensure regional and gender balance and inclusiveness in all its structures and work plans.
3. Decisions of the Research Board require a majority vote. A quorum is defined as 50% of members present. Attendance in person or virtually is considered equivalent for these purposes. [G. Adrian, A. Lynch]
4. The Management Group shall meet as needed, at least quarterly and in preparation for the annual Research Board meeting.
5. The Secretariat will be responsible for the drafting of Board agendas, minutes, decisions and action items for review, and other reporting as appropriate. [G. Adrian, A. Lynch]
6. The Management Group is responsible for efficient action to maintain ongoing Board responsibilities.
7. The Management Group shall meet with the staff of the Research and Innovation Department, in person or virtually, at least quarterly.
8. The Management Group shall report on all of its activities and decisions to the full Research Board.
9. The Management Group shall design and prepare for a research day, in coordination with the Scientific Advisory Panel, to be held as part of every WMO Congress.
10. The Research Board Chair and/or their representative shall meet with the Presidents of the Technical Commissions and/or their representatives approximately every two months. Agendas for these meetings will rotate among the three bodies.
11. The Research Board Chair or their representative shall serve or attend appropriate governing and decision bodies of the WMO, including the Scientific Advisory Panel, Technical Coordination Committee, the Policy Advisory Committee, the Executive Council and Congress.
12. The Research Board Chair or their representative shall represent the Research Board at international forums as requested and practicable.
13. The Research Board shall be supported exclusively by one full time Scientific Officer and other staff as needed, provided by the Secretariat. This staff member will also provide support to the Research Board Management Group, Chair and Vice-Chair. [G. Adrian, A. Lynch]

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