



World Meteorological Organization
Organisation Météorologique Mondiale

Long Term Goal 3
Targeted Research

1. INF. 2.4(3) - Report by the Chair, Research Board (RB)
2. Doc. 3.3(1) – WWRP Implementation Plan 2024–2027
3. Doc.3.3(2) – GAW Implementation Plan (IP2024)
4. Doc. 3.3(3) - Revised terms of reference, RB
5. INF. 2.5(4) - Report by the Chair, Scientific Advisory Panel (SAP)
6. Doc. 3.3(4) – SAP Recommendations with RB Appraisal



World Meteorological Organization
Organisation Météorologique Mondiale

Long Term Goal 3
Targeted Research

- 1. INF. 2.4(3) - Report by the Chair, Research Board (RB)**
2. Doc. 3.3(1) – WWRP Implementation Plan 2024–2027
3. Doc.3.3(2) – GAW Implementation Plan (IP2024)
4. Doc. 3.3(3) - Revised terms of reference, RB
5. INF. 2.5(4) - Report by the Chair, Scientific Advisory Panel (SAP)
6. Doc. 3.3(4) – SAP Recommendations with RB Appraisal



World Meteorological Organization
Organisation Météorologique Mondiale

INF. 2.4(3)
Research Board Chair Report

The Research Board translates the strategic aims of Congress into overarching research priorities through research programmes, and ensures coordination with the technical commissions and regions to achieve these priorities.



- Foster integrative scientific knowledge of the Earth System
- Enhance the science-for-services value cycle
- Advance policy relevant science



Concept Notes finalized in 2021-2022:

1. Science for Services
 - Caroline Brassard et al.
2. Innovation in Regions
 - Arlene Laing et al.
3. Exascale Computing and Data
 - Mark Govett et al.
4. AI and Data Exploitation
 - Adrian Hines et al.
5. Advancing Earth System Observations
 - Madhavan Nair Rajeevan et al.
6. Advancing Earth System Modeling
 - Andy Brown et al.

PLANNED WORKSHOPS
FOCUS ON EW4A

PUBLISHED

PUBLISHED



World Weather Research Programme

Chair: Chris Davis

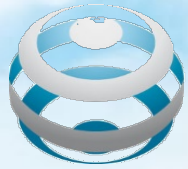
WWRP is advancing and promoting research activities on weather, its prediction and its impact on society. Selected milestones include:

Reports:

- Towards the “Perfect” Weather Warning
- Year of Polar Prediction: Achievements and Impacts
- Guidelines for Satellite-based Nowcasting in Africa

Meetings:

- Impact Based Forecasts and Warnings Workshop Series
- Sub-seasonal to Seasonal Real Time Pilot
- International Workshop on Tropical Cyclones



GAW Global Atmosphere Watch Programme

Chair: Greg Carmichael

GAW focuses on building a single coordinated global understanding of atmospheric composition and its change. Selected milestones include:

Reports:

- WMO Air Quality and Climate, Airbone Dust and Greenhouse Gas bulletins
- Guidance for Urban Heat Islands
- Modelling for Integrated Urban Services
- Joint WMO/UNEP Scientific Assessment of Ozone Depletion

Please see annex statement in support of rebuilding GAW Secretariat support.



World Climate Research Programme

Chair: Detlef Stammer

WCRP coordinates and facilitates international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being. Selected milestones include:

Reports

- A High-end Estimate of Sea Level Rise for Practitioners
- Report of the km-scale Modelling Workshop

Meetings:

- Desirable Scenarios for Safe Landing Climate Pathways
- Sea Level Conference

Open Science Conference, Kigali, October 2023





Meetings:

1. July 2022 (virtual) decisions:
 - to provide joint feedback with INFCOM and SERCOM on SAP Vision Paper
 - to initiate a coordinated programme of regional workshops on science for regional services
2. September 2022
3. December 2022
4. February 2023



Meetings:

1. July 2022
2. September 2022 (hybrid) decisions:
 - adopt World Weather Research Programme Implementation Plan (Doc. 3.3(1))
 - take the lead on Unified Data Policy Task #4 on data exchange for research
 - create sub-committee on regional workshops on science for services
 - redraft Terms of Reference
3. December 2022
4. February 2023



Meetings:

1. July 2022
2. September 2022
3. December 2022 (virtual) decisions
 - acknowledge vote on Terms of Reference (Doc 3.3(3))
 - adopt Global Atmosphere Watch Implementation Plan (Doc. 3.3(2)) and Statement
 - facilitate collaborations with EC-PHORS (outstanding)
 - review and approve members of WWRP and WCRP Committees
 - develop scoping document on regional workshops
4. February 2023



Meetings:

1. July 2022
2. September 2022
3. December 2022
4. February 2023 (virtual) decisions
 - review and discuss SAP recommendation appraisal (Doc 3.3(4))
 - acknowledge scoping document on regional workshops and link to EWS4A
 - acknowledge Terms of Reference for sub-committee on Unified Data Policy Task #4



Collaboration with SERCOM and INFCOM

Regular joint discussions across leadership focus on cross-cutting topics to share information, optimize coordination, and strengthen collaboration.

Examples of collaboration with SERCOM include:

- Science for Services Concept Note, joint WWRP and SERCOM Aviation Research Demonstration Project, Task Team on COVID, Early Warnings for All

Examples of collaboration with INFCOM include:

- Unified Data Policy, Global Data-Processing and Forecasting System (GDPFS), Global Greenhouse Gas Monitoring Infrastructure



Research Board Future Plans

1. Plan and implement a series of workshops that usefully integrate Science for Services in the context of Innovation in Regions, with a focus on EW4A critical needs, collaboratively with RAs
2. Continue the development of strong relationships across Research Board, INFCOM, SERCOM, and SAP



Despite challenges resulting from the COVID-19 pandemic, the Research Board:

- convened regularly to enhance research coordination activities
- developed six concept notes addressing emerging research priorities, and
- pursued 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 introduced challenges.

Following a self-assessment during 2022, the Research Board revised the Terms of Reference to ensure it is fit for purpose for delivering on the Research Board's mandate and responsibilities under the WMO Strategic Plan.



Mandate:

- to act as a liaison between international scientific communities and bodies of the WMO,
- to identify scientific and technological gaps, opportunities and synergies,
- to support capacity recognition and development, and
- to stimulate research most critical for operational infrastructure development, the provision of services, and knowledge support for solutions

Activities:

- Coordination of research in support of WMO Mission
- Sponsored and co-sponsored Research Programmes
- Collaborate with Technical Commissions
- Support Regional Associations



World Meteorological Organization
Organisation Météorologique Mondiale

Doc 3.3(3) Research Board
Terms of Reference

Composition: 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.

Management Group:

- Chair and Vice Chair
- Chairs of Research Programmes
- One representative of Regional Associations
- One additional member



World Meteorological Organization
Organisation Météorologique Mondiale

Doc 3.3(3) Research Board
Terms of Reference

Working Procedures:

- Full board to meet at least annually, at least once in person
- Management Group to meet quarterly and as needed
- Convene a Science Day with SAP at each Congress
- Meet with Presidents of Technical Commissions around every two months
- Staffed exclusively by one full time Scientific Officer and other staff as needed, provided by the Secretariat.



World Meteorological Organization
Organisation Météorologique Mondiale

Long Term Goal 3
Targeted Research

1. INF. 2.4(3) - Report by the Chair, Research Board (RB)
2. Doc. 3.3(1) – WWRP Implementation Plan 2024–2027
3. Doc.3.3(2) – GAW Implementation Plan (IP2024)
4. Doc. 3.3(3) - Revised terms of reference, RB
5. **INF. 2.5(4) - Report by the Chair, Scientific Advisory Panel (SAP)**
6. Doc. 3.3(4) – SAP Recommendations with RB Appraisal



World Meteorological Organization
Organisation Météorologique Mondiale

INF. 2.4(4) Scientific Advisory
Panel Chair Report

SAP Science and Technology Vision Paper

(full text available in EC-76/INF 2.4(4))

Updates since EC-75:

- Changed the name from *SAP Vision Paper* to *SAP Science & Technology Vision Paper*
- Removed recommendation on geoengineering
- Incorporated inputs from the Research Board, INFCOM and SERCOM
- First SAP in-person meeting in September provided opportunity for discussion among members and revision



#	Recommendation
1	Major International Climate Research and Development Effort in the Exploitation of Global kilometer (k-Scale) Computing and Earth System Observations
2	Bridge the Gap Between Developing Global Science and Delivering Local Impact
3	Develop a Digital Strategy
4	Accelerate the Development of Attribution Science
5	Development of Quality Assurance Strategy for Weather, Climate and Water-Related Services
6	Work Across Agencies to Enable Closer Integration of Geophysical and Social Sciences to Support Better Understanding of the Impacts of Weather, Climate and Water Events
7	Develop Education and Training Strategies to Broaden Expertise Beyond Traditional Disciplines
8	WMO, Together with NMHSs, Provide Leadership in the Move Towards Net-Zero



World Meteorological Organization
Organisation Météorologique Mondiale

INF. 2.4(4) Scientific Advisory
Panel Chair Report

Next Steps:

- Final edits will be completed following EC-76
- SAP will collaborate with the Research Board, INFCOM and SERCOM to develop a short paper summarizing the *SAP Science & Technology Vision Paper* for a high-profile journal
- Next SAP meeting will be in October 2023



SAP Activities Post-2023

SAP will continue to provide advice on topics that could lead to major scientific advancements in the years to come, such as:

- Quantum computing
- Big data
- Tipping points
- Policy coherence



World Meteorological Organization
Organisation Météorologique Mondiale

Long Term Goal 3
Targeted Research

1. INF. 2.4(3) - Report by the Chair, Research Board (RB)
2. Doc. 3.3(1) – WWRP Implementation Plan 2024–2027
3. Doc.3.3(2) – GAW Implementation Plan (IP2024)
4. Doc. 3.3(3) - Revised terms of reference, RB
5. INF. 2.5(4) - Report by the Chair, Scientific Advisory Panel (SAP)
6. **Doc. 3.3(4) – SAP Recommendations with RB Appraisal**



World Meteorological Organization
Organisation Météorologique Mondiale

Doc. 3.3(4) SAP Vision
Recommendations Appraisal

Research Board Process:

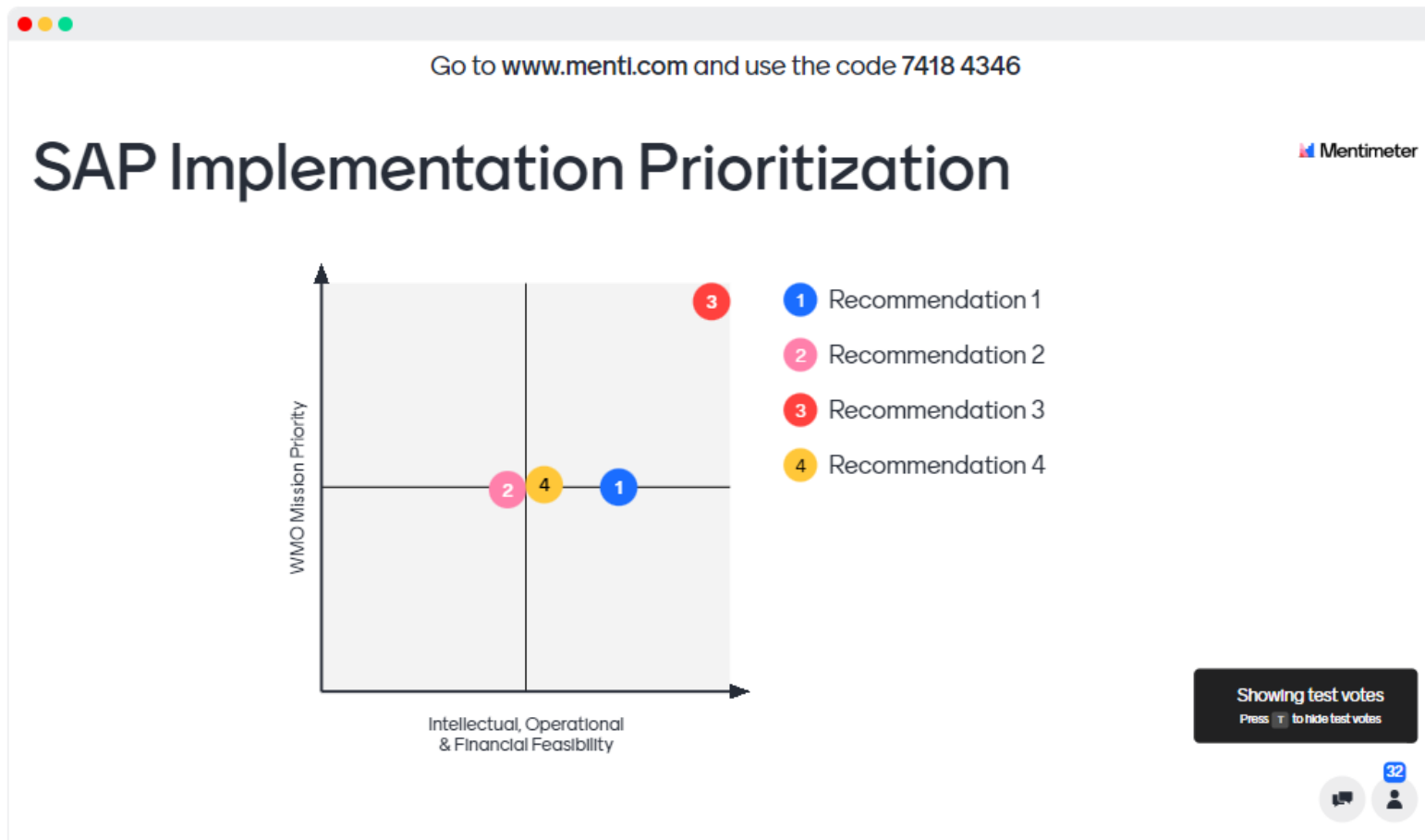
1. Develop recommendation priority-feasibility matrix



Research Board Process:

1. Develop recommendation priority-feasibility matrix
2. Create first cut assessment
3. Share with INFCOM and SERCOM for feedback
4. Revise and send to full Research Board using online tool

SAP Science and Technology Vision: Priority-Feasibility Online Tool



SAP Implementation Prioritization

Recommendation 1

Intellectual, Operational & Financial Feasibility

0 ——— 2 ——— 4
Non-core Critical

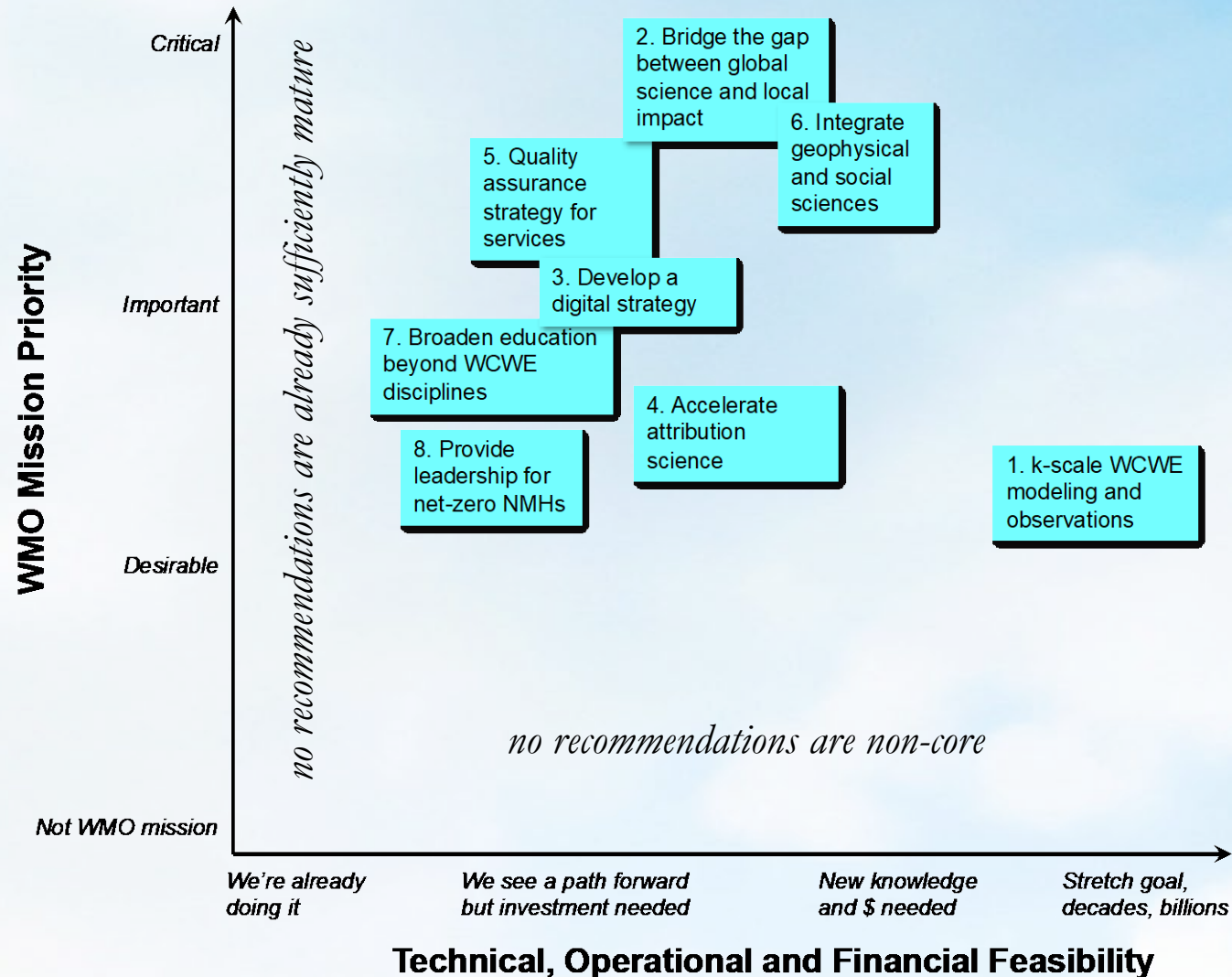
WMO Mission Priority

0 ——— 3 ——— 4
We're already doing it goal/decades,/billions

Recommendation 2

Intellectual, Operational & Financial Feasibility

0 ——— 4 ——— 4





Research Board Implementation Recommendations in Priority Order:

- (1) SAP Recommendation #2 be further developed by the **Capacity Development Panel** through a nuanced and pragmatic assessment of developing local capacity, along with a concept note regarding implementation strategies;
- (2) SAP Recommendation #6 be advanced through a concept note developed by the **Research Board** on pathways to enable closer integration of geophysical and social sciences;
- (3) SAP Recommendation #5 be advanced by **SERCOM** as part of a globally consistent quality assurance process for WCWE Services from private providers, to best align provider standards with NMHSs;
- (4) SAP Recommendation #3 be advanced, guided by existing Research Board Concept Notes, as part of a **whole of UN perspective on digital strategy**;
- (5) SAP Recommendation #7 to be developed with the leadership of the **Education and Training Office** to develop partnerships for integrative educational best practices with support from the **Capacity Development Panel**;
- (6) SAP Recommendation #4 (attribution research) be continued through regular **Research Board** activities;
- (7) SAP Recommendation #8 highlighting leadership in attaining net-zero to continue as part of the **Green WMO**;
- (8) SAP Recommendation #1 be further developed with the leadership of the **World Climate Research Programme**.

Discussion





World Meteorological Organization
Organisation Météorologique Mondiale

Doc. 3.3(4) SAP Vision
Recommendations Appraisal

Thank you

Merci