



WORLD CLIMATE RESEARCH PROGRAMME

WCRP High-level Science Questions and Flagship Workshop

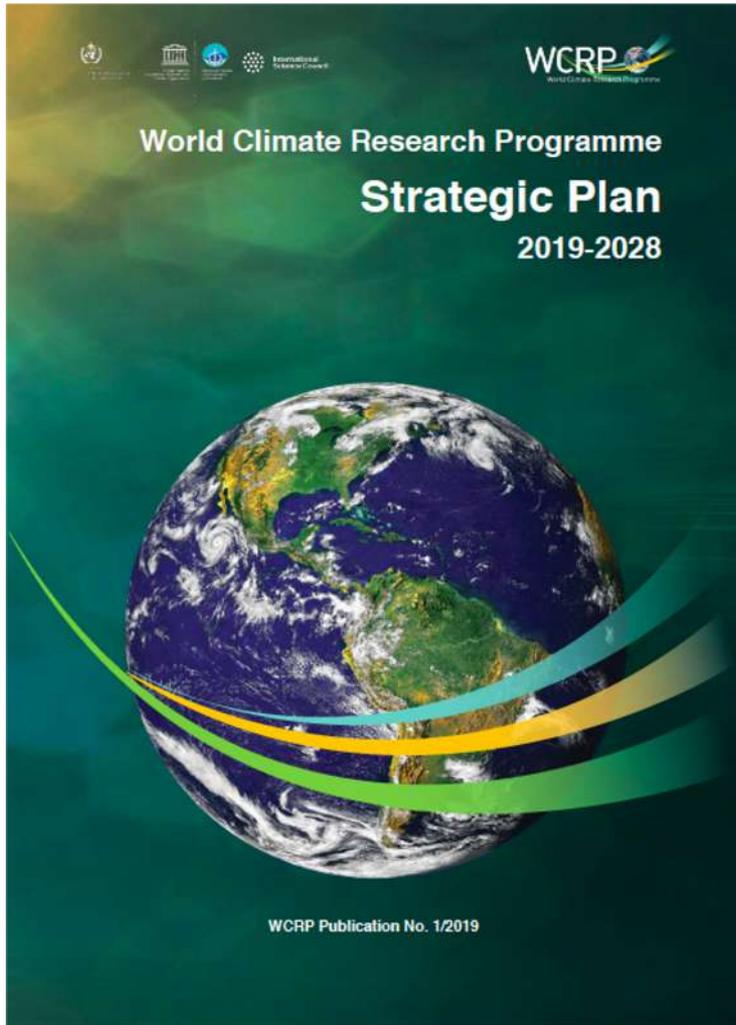
Detlef Stammer and Helen Cleugh (WCRP JSC Chair and Vice Chair)



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The future of WCRP



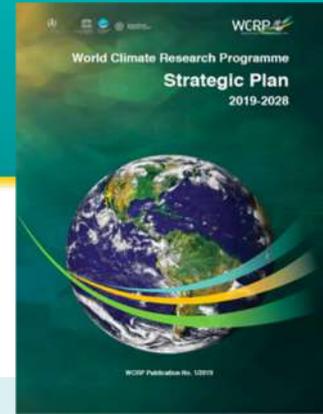
WCRP Strategic Plan 2019 - 2028



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The new WCRP Strategy



The Vision (*our aspiration*)

A world that uses sound, relevant, and timely climate science to ensure a more resilient present and sustainable future for humankind.

The Mission (*what we do, our purpose*)

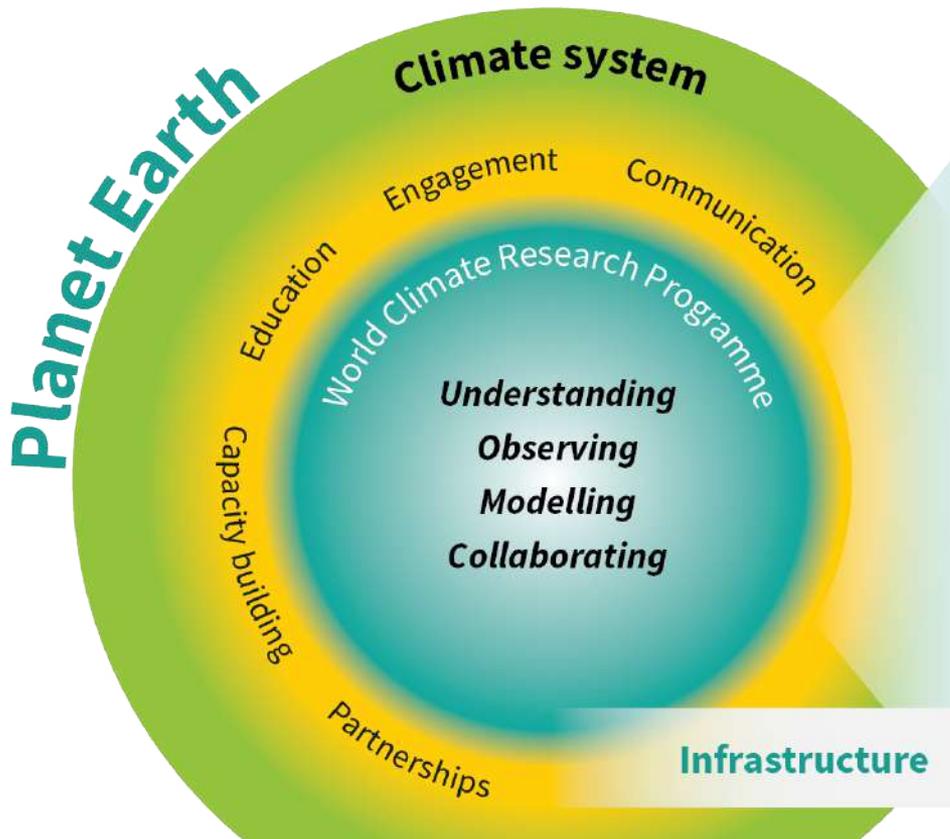
Coordinate and facilitate international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being.



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WCRP Strategic Plan



- A hierarchy of simulation tools
- Sustained observations and reference data sets
- Need for open access
- High-end computing and data management

1

Fundamental understanding of the climate system

We will support and facilitate the advancement of sciences that enable an integrated and fundamental understanding of the climate, its variations and its changes, as part of a coupled physical, biogeochemical, and socio-economic system.

2

Prediction of the near-term evolution of the climate system

We will push the frontiers of predictions and quantify the associated uncertainties for sub-seasonal to decadal time scales across all climate system components.

3

Long-term response of the climate system

We will quantify the responses, feedbacks and uncertainties intrinsic to the changing climate system on longer timescales.

4

Bridging climate science and society

We will support innovation in the generation of decision-relevant information and knowledge about the evolving Earth system.

The Path towards Implementation

- **Prioritize WCRP science** that will enable rapid progress towards providing societally-relevant climate information by identifying:
 - a. **“Lighthouse Activities¹”** that go beyond the capacity of an agency or nation and that will make critical near-term progress towards WCRP achieving its Vision, Mission and four Scientific Objectives
 - b. **“Implementation Priorities”** that will help the implementation by prioritizing near-term climate science needed to provide robust and actionable regional to local climate information e.g. to implement SDGs and inform climate adaptation and mitigation (including intervention) strategies
- **Identify elements** that will facilitate and enable WCRP’s delivery of these scientific advances, and achieving its Mission
- **Community consultation and consolidation ...**

1: Major experiments, high-visibility projects, or infrastructure building blocks



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Hamburg Workshop – Initial Goal

The specific goal was to discuss the two key aspects required to implement the WCRP Strategy, especially:

1. What are the **Lighthouse Activities** that are needed to make critical near-term progress towards meeting WCRP's Vision, Mission and four Scientific Objectives?
2. What are the major **Implementation Priorities** that need to be undertaken by WCRP in the near-term to **fundamentally advance climate** science so that it is able to meet and be relevant to society's urgent and emerging needs

*WCRP High-level Science Questions and Flagship Workshop,
Hamburg, 24-26 February 2020*



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Hamburg Workshop – Outcomes

As a result of discussions both during and after the workshop, this thinking was refined as follows

- **Firstly**, the science and capacity building pursued as Lighthouse Activities will lead to **scientific outcomes** that are critical to support emergent societal needs for robust and actionable regional to local climate information.
- **Secondly, delivery** of robust and consistent regional climate information to stakeholders is needed to inform, for example, the implementation of Sustainable Development Goals, disaster risk reduction, and climate adaptation, mitigation and intervention strategies.

So, what are the **Lighthouse Activities and Implementation Priorities** needed for WCRP to implement its Strategy and make progress towards its Mission and Scientific Objectives?

Implementing the WCRP Strategy

WCRP will implement its Strategy by prioritizing its science and by pursuing a series of Lighthouse Activities, along with other core research activities, to deliver and achieve its Mission over the next decade



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Proposed Lighthouse Activities

**Explaining and
Predicting Earth
System Change**

My Climate Risk

**Safe Landing
Climates**

WCRP Academy

Digital Earths

These draw on WCRP's fundamental science, critical infrastructure and strategic partnerships

Implementation Priorities

- 1. Foster and deliver the scientific advances and future technologies required to:**
 - *Advance understanding of the multi-scale dynamics of Earth's climate system*
 - *Quantify climate risks and opportunities*



Implementation Priorities

2. Develop new institutional and scientific approaches required to:

- Co-produce cross-disciplinary regional to local climate information for decision support and adaptation*
- Inform and evaluate mitigation strategies*



Next Steps

Consultation and feedback

- Hamburg Workshop Report – shared with attendees (late March, 2020)
- Shared with WCRP family and partners for consultation and refinement (April through May, 2020)

Consultation, feedback and refinement via virtual meetings throughout 2020

- Elements Workshop; JSC-41; Model & Data Workshops

Engage and consult with Co-Sponsors, Partners, and Agencies during 2020 - 2021

- In-principle approval by 2021

Implementation Plan development during 2020 - 2021

- Writing
- Community and agency consultation and outreach



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Thank You



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Cultural Organization



Intergovernmental
Oceanographic
Commission



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