The World Climate Research Programme

from Strategy to Action

D. Stammer
Chair JSC/WCRP
WCRP Strategic Plan 2019-2028

• Developed 2017-2019 with extensive consultation
• Approved June 2019

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

Our Mission
The World Climate Research Programme (WCRP) coordinates and facilitates international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being.

www.wcrp-climate.org/wcrp-sp
WCRP Strategic Plan: Overview

Scientific Objectives

1. Fundamental understanding of the climate system
2. Prediction of the near-term evolution of the climate system
3. Long-term response of the climate system
4. Bridging climate science and society

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

www.wcrp-climate.org/wcrp-sp
Implementation Plan:

- Put the WCRP Strategic Plan into action
- Involves resources, structures, milestones, deliverables, measures of success, risk assessment

Development of the Implementation Plan:

- Transparent «bottom-up» approach involving the entire community
- Consultation with the scientific community, agencies, academies, co-sponsors and other stakeholders
- Leading to fit-for-purpose structure, an effective governance, required resources, budgets and finance management.
Key Science Question areas

Considering all scales

How to improve climate modelling and process understanding?
How will climate extremes occur in the future?
What will be the impact of Geoengineering?
What will happen in the high latitudes?
What will happen to low-lying islands?
How can we expect in regional climate hotspots?

How can we improve climate predictions?
Is response action needed?
What does society need to know?
Data-model fusion
Heat
Carbon
Water
Urbanization
Land-use Change

What is the impact of different forcings?
How can we better understand climate sensitivity?
What fundamental science is needed?
Disruptive technology

How can we better understand climate sensitivity?
How can we communicate uncertainty better?
What can we expect in regional climate hotspots?

What opportunities do new technologies provide?
How can we communicate uncertainty better?
What will happen in the high latitudes?
What will happen to low-lying islands?

What is the interaction between climate and development trends?

How can we improve climate predictions?
How can we make predictions more useful and relevant to society's needs?
Parameterization
Aerosols

How will reservoirs change in the future?
What will be the impact of Geoengineering?

How does society need to know?
Evolution

What will society need to know?

What are the opportunities for new technologies?
WCRP Mission: Societally-relevant knowledge and information to inform mitigation, adaptation and risk management

Function: Integration across Earth System (Local to Regional to Global)
- Earth System Model Development
- Observing system innovation and evaluation
- Model – Data fusion
- Fora and services for Capacity development, Education, Community building

Function: Infrastructure
- Simulation tools
- Seamless data
- Sustained obs.
- High-end comp.; data storage & management
- Platforms for open access, data sharing, collaboration

Science Questions: Relevance, Innovation, Discovery, Integration

Function: Enduring capability and Link to science communities
- Water, Energy, Composition, Dynamics, (Biosphere)
- Ocean, Atmosphere, Cryosphere, Land

Stakeholder engagement and dialogue
Partnerships, collaboration and dialogue
[Partnerships] Links to sustained observing systems (e.g. GCOS)
[Partnerships] Coordinated Model Experiments and Assessments | Production | Evaluation

1. Understanding Earth System Processes
2. Variability, Predictability and Prediction
3. Climate change Projections and ESM feedbacks
4. Bridging climate science and managing climate risk
Implementation Plan: Draft Structure

1. Introduction
2. The WCRP Strategy: Vision, Mission and Objectives
3. Engagement
4. Framework
5. Partnerships
   - Identifying key partners
   - Co-designing science questions
   - Identifying common infrastructure
   - Clarifying their role in the Strategy
   - Reaffirming current, and building new
6. Implementation
   - Transition Plan
   - Schedule: Gantt chart, milestones, deliverables
7. Measures of success
8. Risks and contingencies

Phase I (by April 2020)

Phase II (by April 2022)

Fully consultative development
Will include:
- Support functions (including support offices)
- External governance: sponsors, Joint Scientific Committee, Governing Board, Joint Planning Staff (Secretariat)
- Internal structure and governance
- Resources, budgets, finance management
Implementation Plan: Milestones

Initial planning and conceptualizing
Implementation and Transition Meeting and 40th Session of the Joint Scientific Committee (JSC-40)
May 2019

Consolidation:
- Questions and framework
- Partner & stakeholder consultation
- Funder and sponsor consolidation

Drafting Implementation: Phase 1.

Agreement on Implementation Plan Phase 1:
- Science questions and conceptual framework
- Key elements for delivery and engagement
- Science, funding and infrastructure needs.
JSC-41
April 2020

“Elements” Workshop:
Finalize Phase 1
Brainstorming for Phase 2
January/February 2020

Consultation regarding new structure and governance

Decision on Phase 2 and beginning of transition (JSC-42)
April 2021

Synthesis of core activities
Transition

Agreement on Implementation Plan Phase 2 (JSC-43)
April 2022

AGU: Community consultation of WCRP Framework December 2019
WCRP and the UN Decade

- WCRP is a co-sponsored body of IOC-UNESCO.
- WCRP fully supports the UN Ocean Decade.
- WCRP carries out many ocean related activities through e.g. its CLIVAR (Climate and Ocean) Core Project and its Grand Challenge on Regional Sea Level and Coastal Impacts.
- WCRP continues to invest in *Ocean Science that is Fit for Purpose* and looks forward to working with IOC both with the UN Ocean Decade and in the WCRP Implementation process.

United Nations Decade of Ocean Science for Sustainable Development 2021 - 2030
Thank You