

WORLD CLIMATE RESEARCH PROGRAMME

Update on Sponsors' Review and Strategy and Implementation Plans

Michel Rixen WDAC7, 26-27 March 2018 WMO, Geneva, Switzerland











WCRP's mission

... is to facilitate analysis and prediction of Earth system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society.

The two overarching objectives of WCRP are:

to determine the predictability of climate

to determine the effect of human activities on climate











WCRP Structure

JOINT SCIENTIFIC COMMITTEE (JSC)

Our link to GCOS

WCRP MODELLING ADVISORY COUNCIL (WMAC)

WCRP DATA ADVISORY COUNCIL (WDAC)

WORKING GROUPS ON:

SUBSEASONAL TO INTERDECADAL PREDICTION (WGSIP) NUMERICAL EXPERIMENTATION (WGNE)

COUPLED MODELLING (WGCM)
REGIONAL CLIMATE (WGRC)

Clic CLIVAR

GEWEY

SDARC

CORDEX

Observations are critical across the entire WCRP enterprise, from process studies, to model development, initialization and verification, etc

CRYOSPHERE-CLIMATE OCEAN-ATMOSPHERE LAND-ATMOSPHERE TROPOSPHERE-STRATOSPHERE REGIONAL CLIMATE DOWNSCALING

GRAND CHALLENGES

CLOUDS, CIRCULATION AND CLIMATE SENSITIVITY

NEAR-TERM CLIMATE PREDICTION

REGIONAL SEA-LEVEL CHANGE AND COASTAL IMPACTS

MELTING ICE AND GLOBAL CONSEQUENCES

CARBON FEEDBACKS IN THE CLIMATE SYSTEM

WATER FOR THE FOOD BASKETS OF THE WORLD

UNDERSTANDING AND PREDICTING WEATHER AND CLIMATE EXTREMES











JOINT PLANNING STAFF (JPS)

Evolving context and challenges

Last WCRP Strategic Plan: 2005-2015

Last WCRP Review: 2009

Last WCRP Implementation Plan: 2010-2015

Research is pulled into a new and broader "operational/service/policy" landscape

- IPCC Assessment Reports
- UNFCCC Paris Agreement and Global Stocktake
- Global Framework for Climate Services
- Sendai Framework for Disaster Risk Reduction

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Key recommendations of the Review

- 1. Science Strategy and Implementation: key societal needs, international coordination, bedrock science but relevance
- 2. Governance and the MoU, sponsors board
- 3. JSC Science Strategy leadership
- 4. JPS and Operations
- 5. WCRP structure to support implementation
- 6. Sponsors' financial support
- 7. Science for Services
- 8. Partnerships: WWRP, GAW, GCOS, Future Earth, etc.









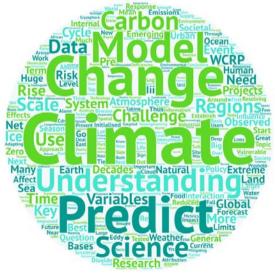
WCRP New Strategy

- WCRP is developing a new Strategic Plan, covering a 10-year time horizon (2019-2029)
- Takes into account the outcomes of the cosponsors review (expected final by June '18)
- SWOT analysis and initial (internal) consultations done
- Importance of bedrock science, seamless approach (time, space, ESM, R-O) and links to services and policy emphasised
- Extensive consultation with WCRP community
 Mar 2018 and stakeholders Apr-Jun 2018
- 5-year Implementation Plan also being developed
- Both aimed be finalised end 2018.



Strategic Plan 2019-2029

















WCRP New Strategy: draft content

- 1. The World Climate Research Programme
- 2. Forty years of successful international climate science
- 3. The next decade of the World Climate Research Programme
- 4. Overarching Scientific Objectives of the Programme
 - O1. Understanding the climate system
 - O2. Determining predictability on weekly to decadal timescales
 - O3. Understanding projectability on decadal to centennial timescales
 - O4. Connecting climate science with policy and decisions

5. Emphases of the Programme

- E0. Climate science in support of sustainable development
- E1. The ocean in the Earth system
- E2. The atmosphere in the Earth system
- E3. The land in the Earth system
- E4. The cryosphere in the Earth system
- E5. The regions in the Earth system

6. Imperatives for the Programme

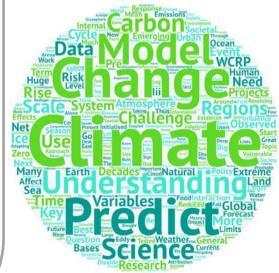
- 11. Hierarchy of Earth and Climate System Models
- 12. Observations and data sets in support of climate science
- 13. Timely assessments of the state of the climate system
- 14. Open access, high-end computing and data infrastructures
- 15. Supporting a vibrant climate community around the world
- 16. Communication and education
- 17. Outreach and societal engagement
- 18. Institutional and programmatic partnerships

7. Closure Statement



Strategic Plan 2019-2029











WCRP New Strategy: draft overarching objectives

1. Processes / understanding / analyze

Identify and constrain key processes that determine the reservoirs and flows of energy and water - and other essential elements including carbon, aerosols, nutrients, salt - within and between the components of the Earth system.

2. Predictability / seamless prediction / skill

Quantify the uncertainties and predictabilities inherent for weekly to decadal time scales of the climate system.

3. Projectability / projections / sensitivity

Quantity the sensitivities and emergent constraints inherent in the changing climate system.

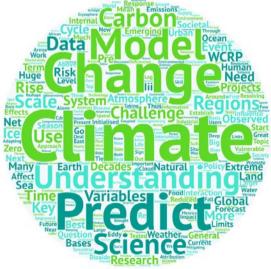
4. Science for Society / policy and services

Improve the generation and use of decision relevant climate information and knowledge about the evolving Earth system, across space and time scales, due to natural variability and climate change.



Strategic Plan 2019-2029

















WCRP New Strategy: observations and data

- Explicit reference in current draft Strategic Plan to:
 - Sustained observing systems and innovation
 - International coordinated field experiments
 - Open data policies and interoperability
 - High-end data infrastructures
 - Climate data records
 - Reanalyses
 - Stronger WCRP-GCOS strategic alignment
- Implementation Plan: will address WCRP-GCOS governance











