

# WCRP Update

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## WCRP Structure

Joint Scientific Committee

Joint Planning Staff

Modeling Advisory Council

Data Advisory Council

**Working Groups on:** Coupled Modeling (WGCM), Numerical Experiment (WGNE),  
Regional Climate (WGRC), Seasonal to Interannual Prediction (WGSIP)

Cryosphere-  
Climate



Ocean-  
Atmosphere



Land-  
Atmosphere



Troposphere -  
Stratosphere



Regional  
Climate  
Downscaling



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**CLIC**

**CLIVAR**

**GEWEX**

**SPARC**

**CORDEX**

**Regional Sea-Level Change and Coastal Impacts**

Cryosphere-  
Climate

Ocean-  
Atmosphere

**Melting Ice and Global Consequences**

Land-  
Atmosphere

Troposphere -  
Stratosphere

Regional  
Climate

Downscaling

**Changes in Water Availability**

**Cloud Circulation and Climate Sensitivity**

**Understanding and Predicting Weather and Climate Extremes**

**Observations**

**Models**

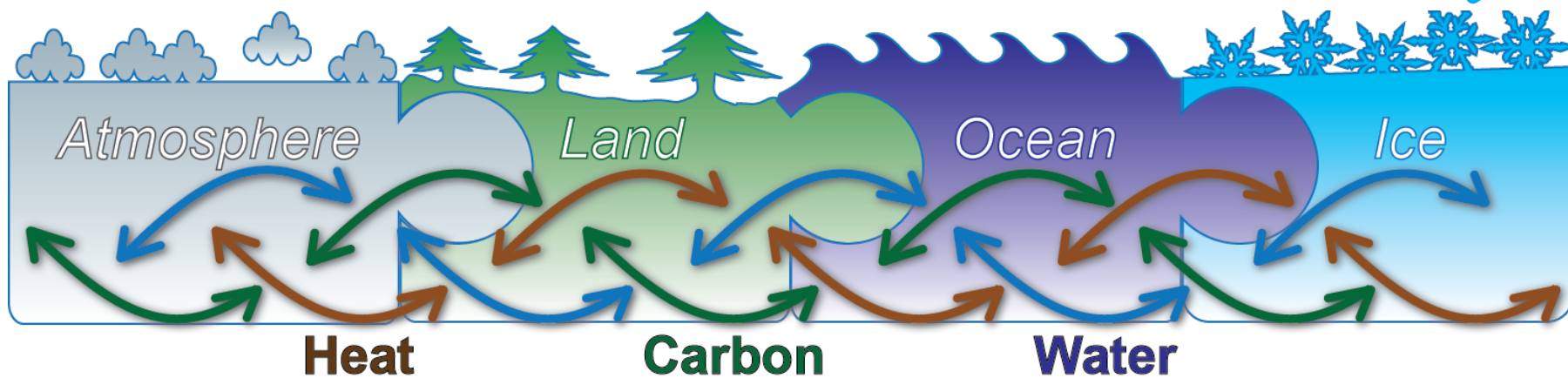
**CMIP**

**Week**

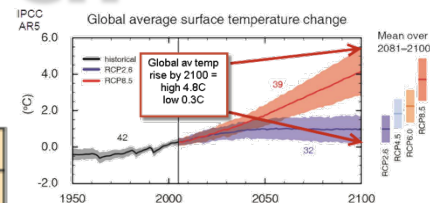
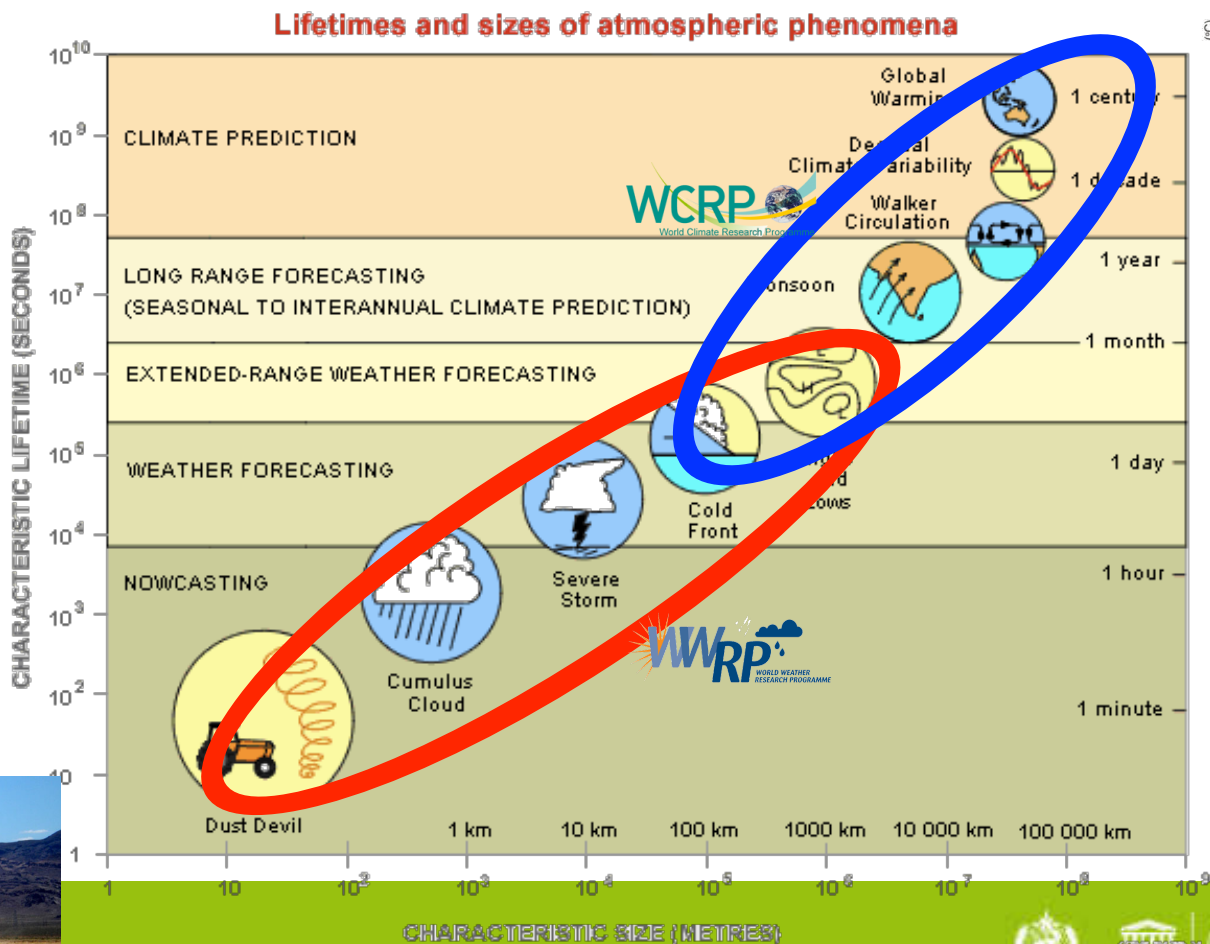
**Season**

**Decade**

**Century**



# Weather and Climate Research



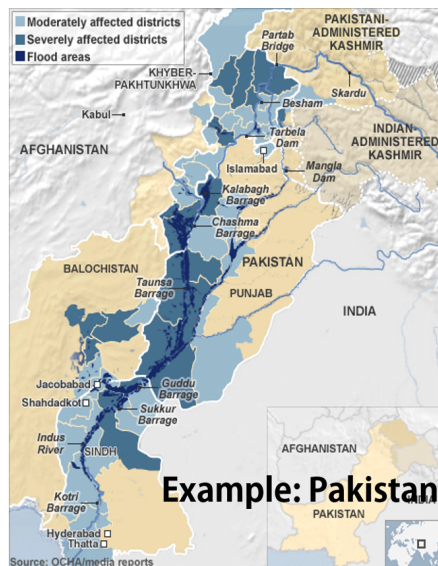


# Sub-Seasonal to Seasonal Prediction

“Bridging the gap between weather and climate”

s2sprediction.net

- Evaluate potential predictability of sub-seasonal events through a multi-model approach.
- Understand systematic errors and biases in the sub-seasonal to seasonal forecast range
- Focus on specific extreme event case studies increasing resilience and improving adapting capacity.



Example: Pakistan Floods (2010)





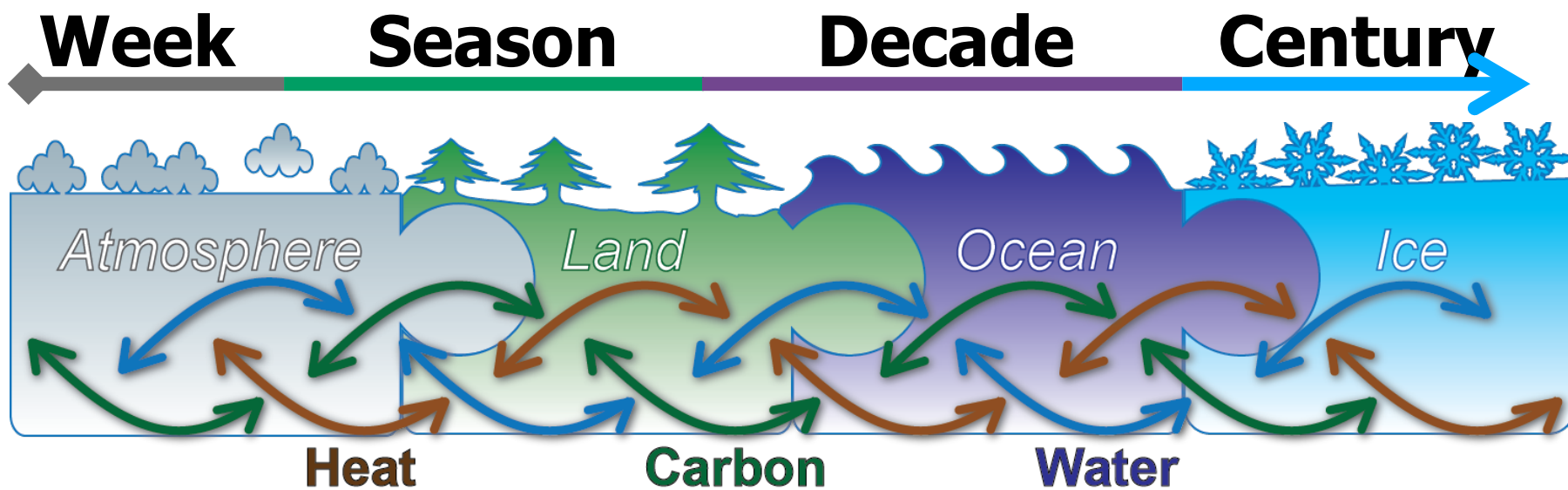
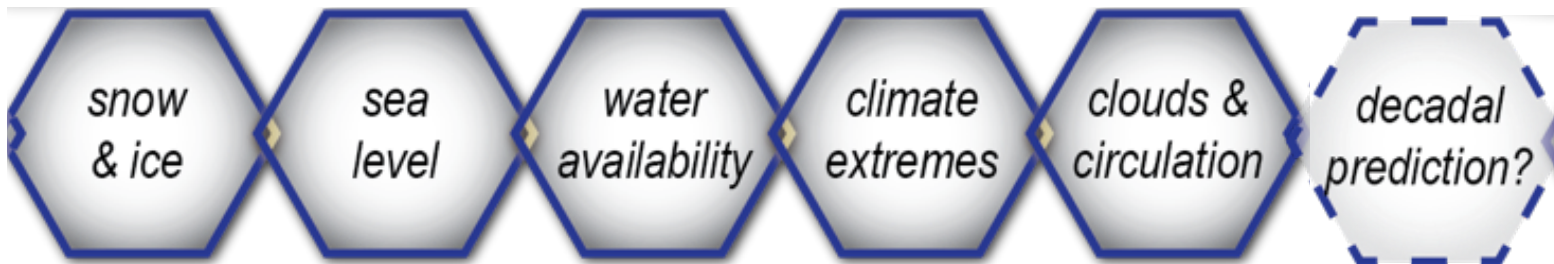
# Year of Polar Prediction

## 2017 - 2019

[www.polarprediction.net/yopp.html](http://www.polarprediction.net/yopp.html)

Enable a significant improvement in environmental prediction capabilities for the polar regions and beyond, by coordinating a period of intensive observing, modelling, verification, user-engagement and education activities.



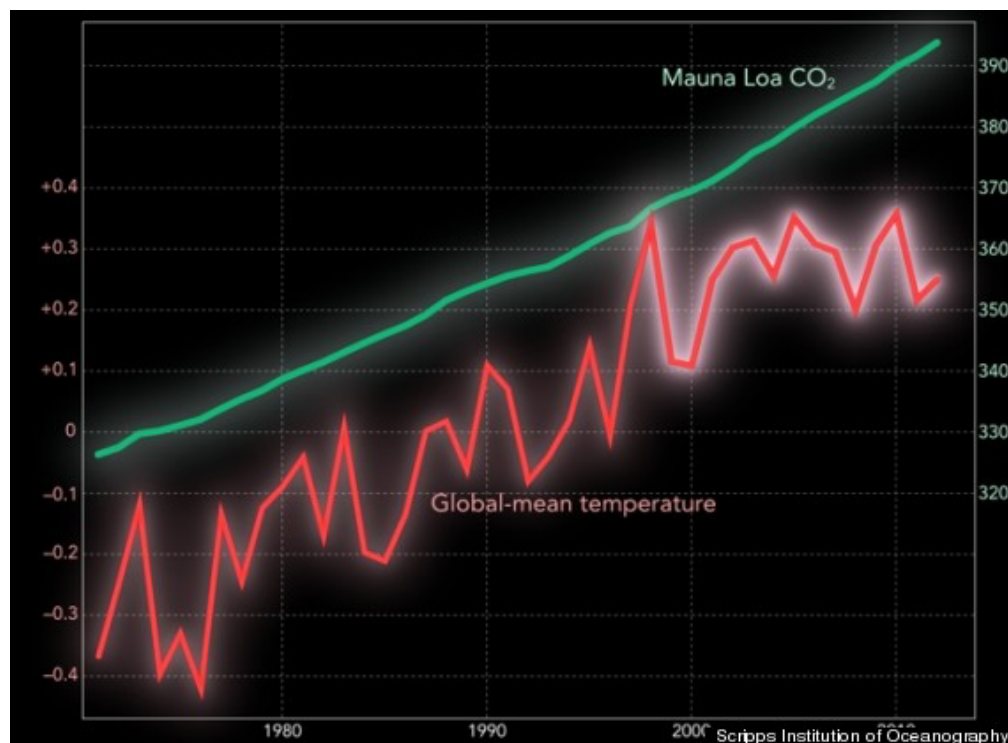




# GC on Near-Term Climate Prediction (draft title)

Ultimate aim to provide a real-time decadal climate outlook each year...

(e.g. ability to predict events such as hiatus ?)



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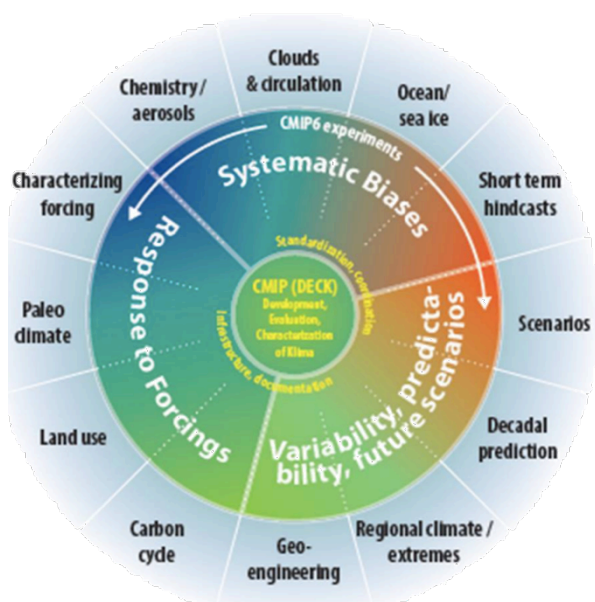
# Recent Development

- Earth System Reanalysis, Reanalysis Task Team
- Open data policy
- Data set quality assessment
- obs4MIPs, ana4MIPs, open data publication
- CORDEX Flagship Pilot Studies (FPS) – criteria, guidelines...
- WCRP-WWRP International Model Development Prize
- Possible WCRP-GCOS International Data Prize

# Recent Development

## CMIP6-Endorsed MIPs

### Main Criteria for Endorsement



1. The MIP and its experiments address at least one of the key science questions of CMIP6.
2. The MIP demonstrates connectivity to the DECK experiments and the CMIP6 Historical Simulation.
3. The MIP adopts the CMIP modeling infrastructure standards and conventions.
4. All experiments are tiered, well-defined, and useful in a multi-model context and don't overlap with other CMIP6 experiments.
5. Unless a Tier 1 experiment differs only slightly from another well-established experiment, it must already have been performed by more than one modeling group.
6. A sufficient number of modelling centers (~8) are committed to performing all of the MIP's Tier 1 experiments and providing all the requested diagnostics needed to answer at least one of its science questions.
7. The MIP presents an analysis plan describing how it will use all proposed experiments, any relevant observations, and specially requested model output to evaluate the models and address its science questions.
8. The MIP has completed the MIP template questionnaire.
9. The MIP contributes a paper on its experimental design to the CMIP6 Special Issue.
10. The MIP considers reporting on the results by co-authoring a paper with the modelling groups.

# Budget

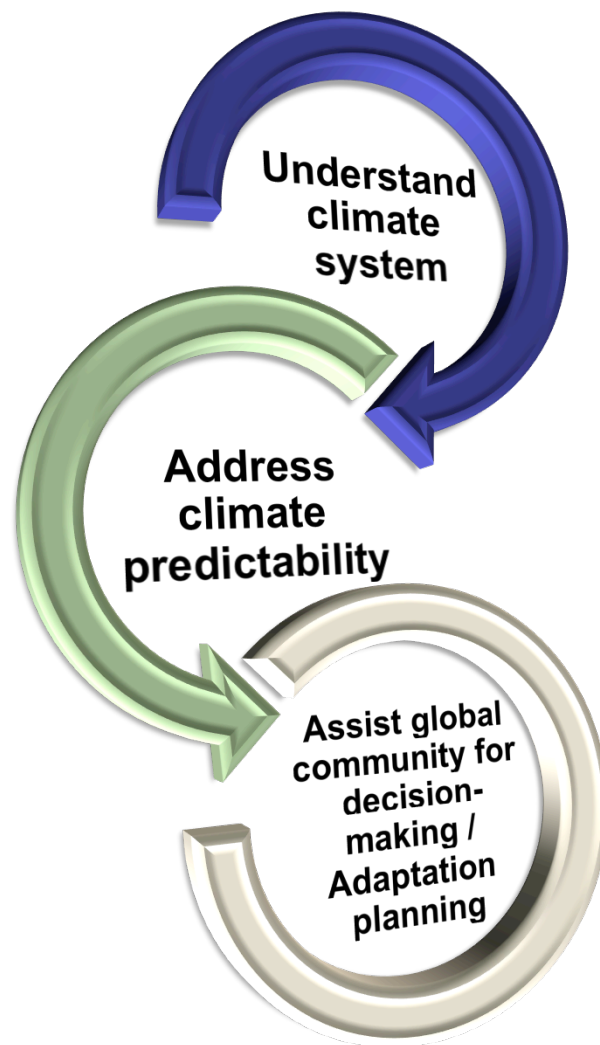
- Secure WMO and IOC support, missing direct ICSU contribution
- Decrease in some national contributions
- Funding pressure on current activities
- Continuous efforts toward other opportunities (e.g. Support for early career scientists, Joint WCRP-WWRP activities, etc.)

# Mission & Objectives



... 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

*(WCRP Strategic Framework 2005-2015)*



**Thank You**

# WCRP JSC-36 (April 2015)

- Reaffirmed 5 WCRP Foci
  - **Observing changes** in the components of the Earth system (atmosphere, oceans, land and cryosphere) and in the interfaces among these components;
  - **Improving our knowledge and understanding** of global and regional climate variability and change, and of the mechanisms responsible for this change;
  - **Assessing and attributing significant trends** in global and regional climates;
  - **Developing and improving numerical models** that are capable of simulating and assessing the climate system for a wide range of space and time scales;
  - **Investigating the sensitivity of the climate system** to natural and human-induced forcing and estimating the changes resulting from specific disturbing influences.



# WCRP JSC-36 (April 2015)

- introduced 12 WCRP statements
  - **Support Frontier Research** to advance fundamental understanding on Earth system, with expanded focus
  - **Support 4 Core Projects** with a view to integrating and collaborating with WCRP Working Groups
  - **Make the GCs successful**, focusing on key scientific questions that are socially relevant
  - **Introduce new research themes** (Note: WCRP-IPCC workshop in Bern, 2014)
  - **Develop an active interface with “downstream: two-way interactions**
  - **Enhance the regional presence of WCRP** by developing regionally focused activities and involving more scientists in regions
  - **Develop a sustained Capacity Development Programme** integrated into the WCRP strategy

# WCRP JSC-36 (April 2015)

- Chair introduced 12 WCRP statements (continued)
  - **Simplify the WCRP structure** aiming for improved efficiency and clearer deliverables
  - **Favour Diversity** : geography, disciplinary, gender...
  - **Develop a new public relation approach:** needing modernized plan for communication
  - **Enhance the role of JSC members,** as the think tank of WCRP
  - **Develop a long-term funding strategy** for future stability of WCRP implementation (new sources of revenue?)

# WCRP JSC-36 (April 2015)

- Reviewed status of Grand Challenges
  - Revise and adjust the scopes where agreed
  - Transformed “GC on Regional Climate Information” into a cross-cutting theme
  - Consideration on a potential new GC on Decadal Climate Information
- Reviewed implementation of Core Projects
  - Emphasized their roles in developing and implementing GCs
  - Reviewed major activities planned in 2015 – 2016
- Consideration on emerging issues
  - Planet Data Initiative
  - (Regional) Climate Information
  - Decadal issues across WCRP
  - Urban issues: Cities and Climate

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**As hoc task force  
on “observation”**

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**Brainstorming group for potential Decadal GC**

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**To initiate discussion on urban issues and WCRP**