WCRP
World Climate Research Programme

WCRP update

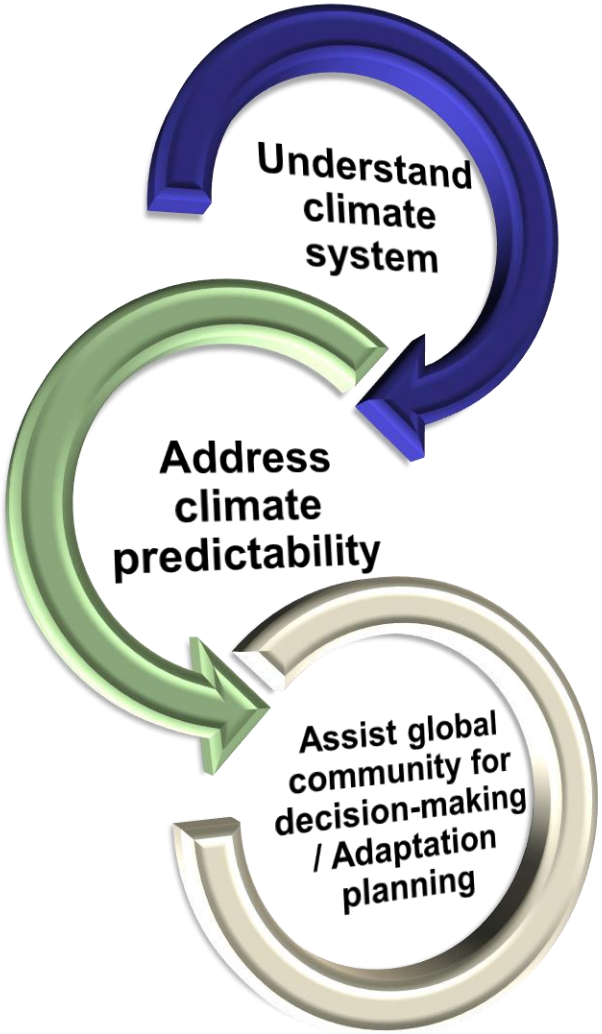
B.Lee, WCRP JPS

WMO IOC ICSU

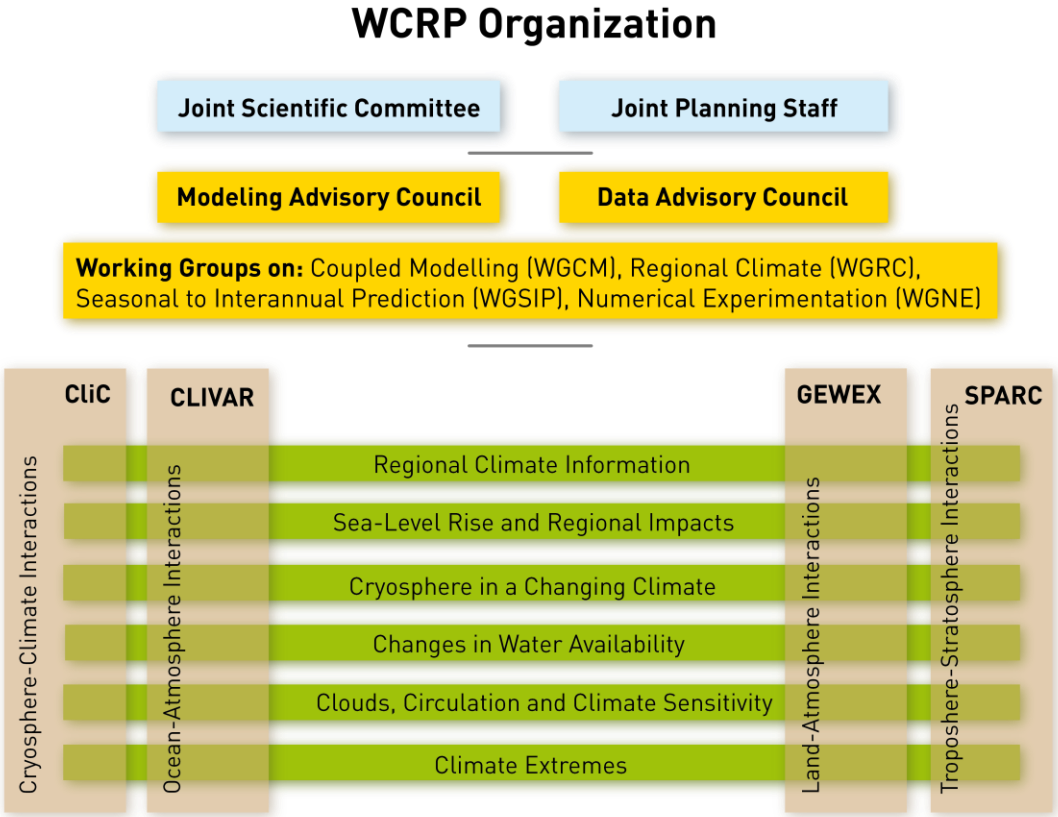
Mission & Objectives

... 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)

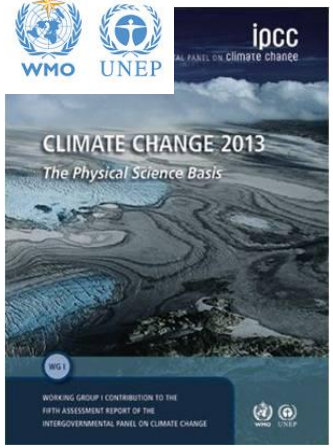


WCRP Structure & Modus Operandi

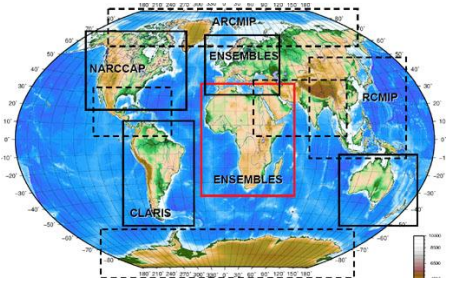


IPCC
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

WMO UNEP



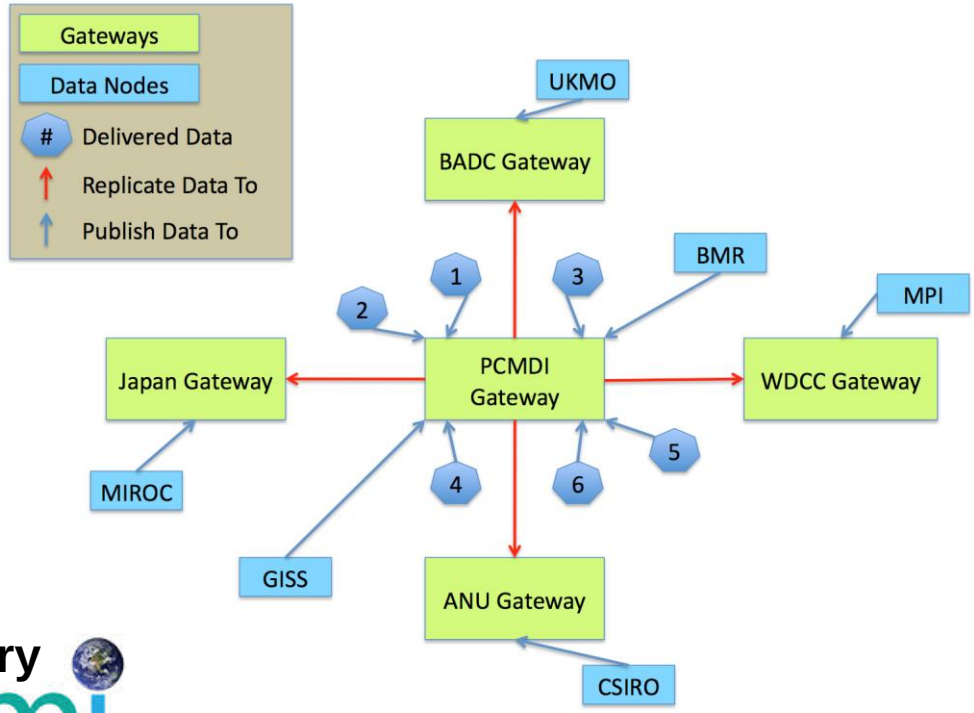
Regional



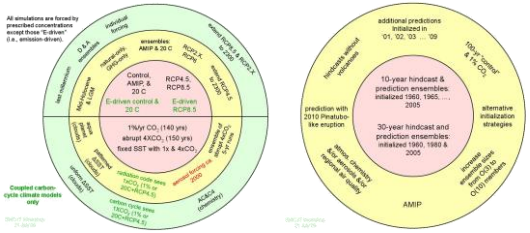
CORDEX

Earth System Grid Federation (ESGF)

as a WCRP-recommended data and information dissemination mechanism



CMIP5
Centennial, decadal



CMIP3: 603 publications,
CMIP5: 359 publications

Chemistry

ccmi
chemistry-climate model initiative

WCRP Structure & Modus Operandi

A New Look:

- **How to structure our approaches, methods and organizations?**
- **Focus on the scientific priorities ← consolidate on existing achievements and simplify the structure**
- **Identify a central theme, around which our science develop**
- **Highlight synergies with other international programs**

Cross-analysis: uncertainties .vs. ongoing activities

'Lessons Learnt for Climate Change Research' (2014, Switzerland)

- Ocean (particularly, deep ocean) heating and ocean circulation
  → **WCRP sea level Grand Challenge, decadal prediction challenges (within several GCs)**
- Understanding natural variability and forced change on annual to decadal time scales
  → **WCRP GCs on climate extremes and regional climate**
- Better descriptions of and incorporation of **aerosols** and other **short-lived climate forcers** (decadal time scales and on local to regional spatial scales)
- Interactive components of the **carbon and other biogeochemical cycles**, including terrestrial and oceanic geochemical and ecological sources and sinks, into analyses and models

Cross-analysis: uncertainties .vs. ongoing activities

- Increased predictive skill on decadal time scales
- Seamless coupled weather-climate
- Better and more systematic sources of and access to data
- Direct input from climate prediction to decision support systems

Cross-analysis: uncertainties .vs. ongoing activities

- Increased predictive skill on decadal time scales
- Seamless coupled weather-climate
- Better and more systematic sources of ar… to data
- Direct input from climate predi… ecisi… support systems

Earth System Reanalysis & Intercomparison

Climate and Megacities

WCRP: refreshing its focus?

Long-term Projection of climate changes (e.g. centuries)

WCRP: refreshing its focus?

Long-term Projection of climate changes (e.g. centuries)

CMIP, CORDEX, …
Considered as very successful

WCRP: refreshing its focus?

Long-term Projection of climate changes (e.g. centuries)

CMIP, CORDEX, ...
Considered as very successful

Attention migrated to mitigation / adaptation (e.g. tasks of Future Earth)

Increased attention to societal demands

WCRP: refreshing its focus?

Long-term Projection of climate changes (e.g. centuries)

CMIP, CORDEX, ...
Considered as very successful

Attention migrated to mitigation / adaptation (e.g. tasks of Future Earth)

Increased attention to societal demands

Analysis & Prediction of seasonal–decadal variations (natural & forced)

Addressing key scientific challenges within

WCRP: refreshing its focus?

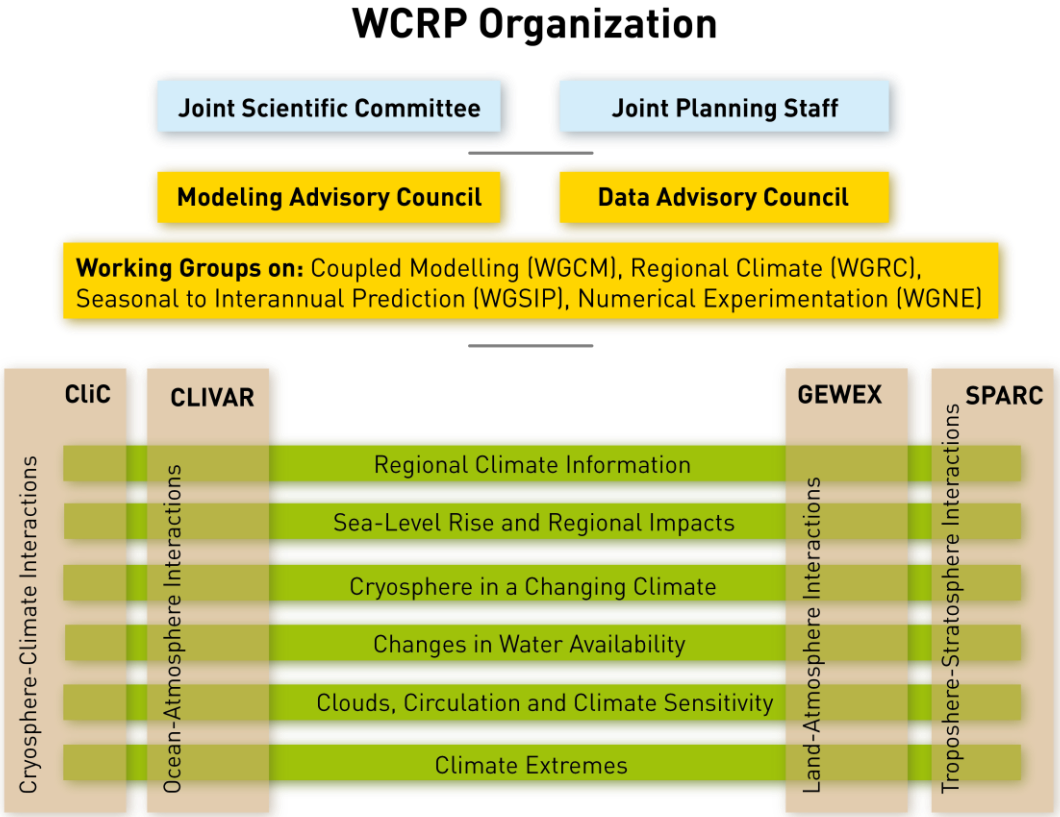
Long-term Projection of climate changes (e.g. centuries)

Analysis & Prediction of seasonal–decadal variations (natural & forced)

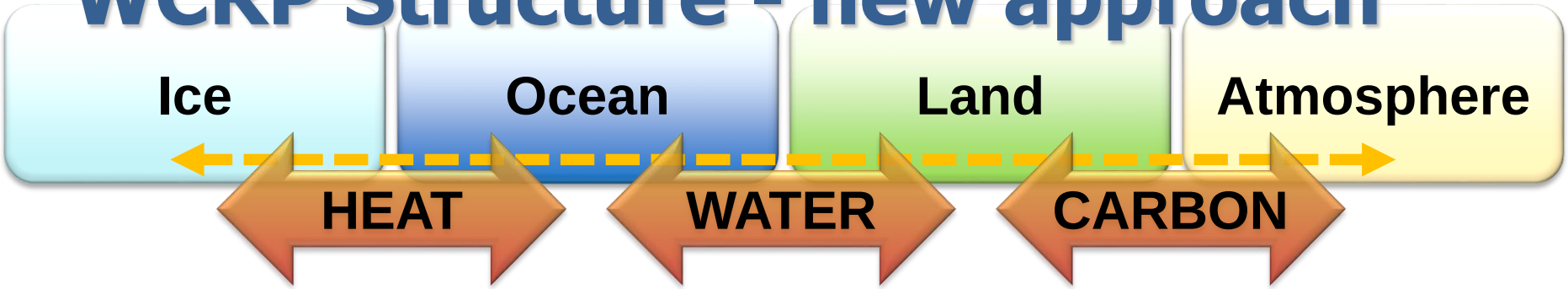
Addressing key scientific challenges within

- Understanding of **dynamical modes**, **natural cycles**, and **predictability**
- Role of the ocean, land surface & stratosphere on this type of variability
- Emphasis on **changes in weather and regional impacts**
- Link with the needs of many economic sectors

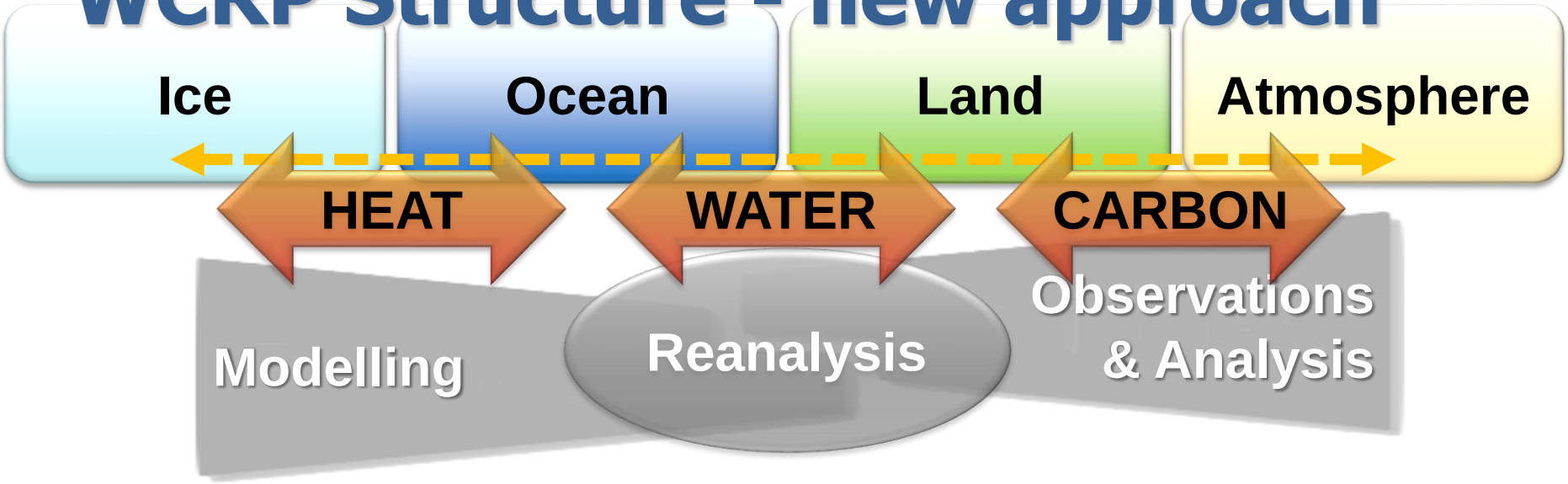
WCRP Structure



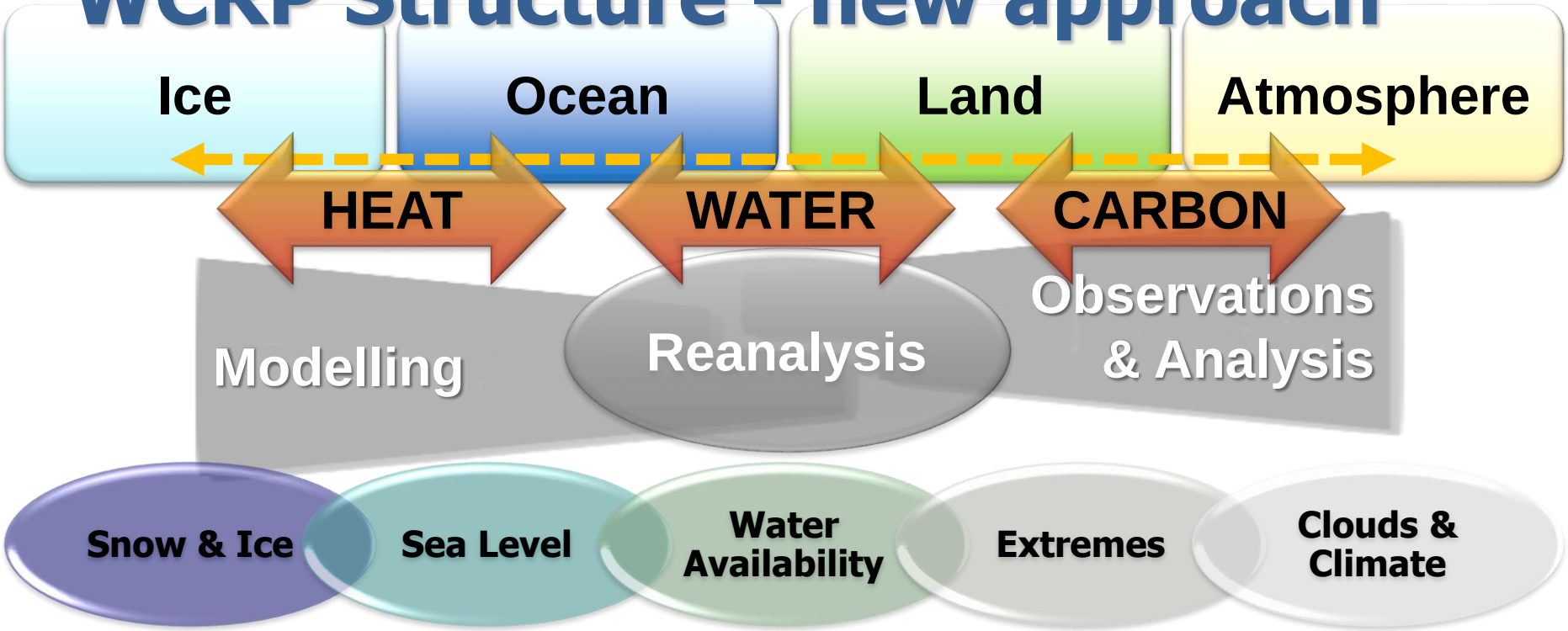
WCRP Structure - new approach



WCRP Structure - new approach

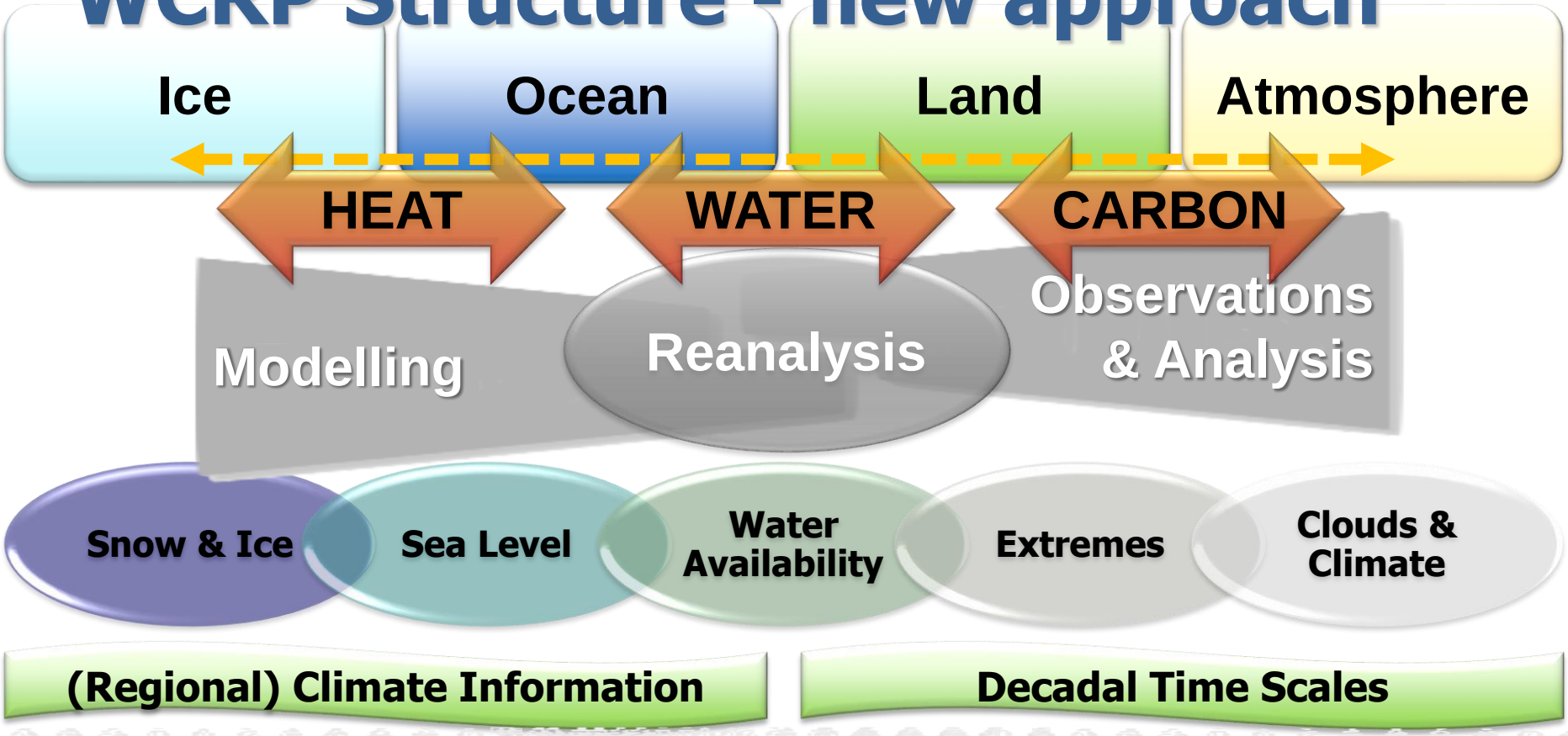


WCRP Structure - new approach



WCRP
World Climate Research Programme

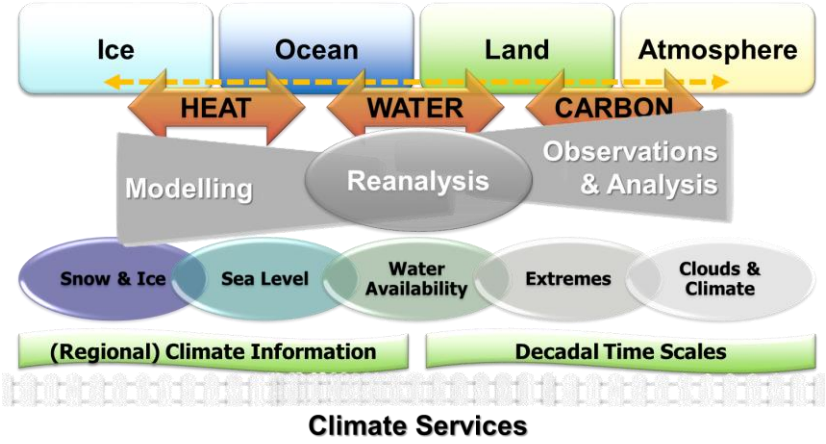
WCRP Structure - new approach



Climate Services

WMO IOC ICSU

WCRP Structure - Challenges



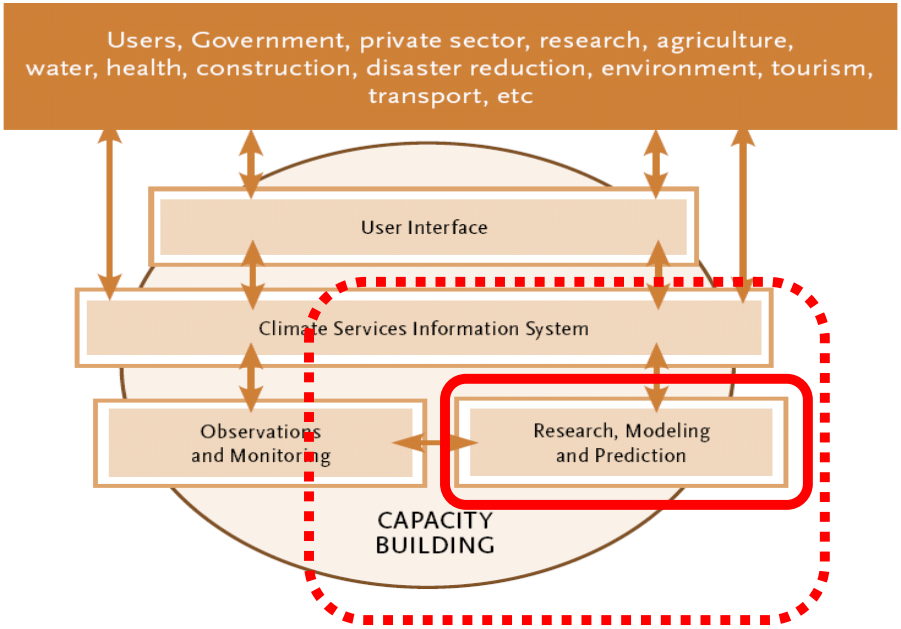
- (Re)consideration on how to address **regional** climate information
- (Re)focus on **seasonal to decadal** time scales

- Comprehensive approach / roles by core-projects re. Earth Components (Atmosphere, Ocean…)
- Coupled activities towards an Earth System approach (energy, chemistry, water…)
- Linking with other programmes (IGBP, WWRP, GCOS, GFCS…)

WCRP and GFCS

Research Strategy (priority themes):

- Climate, food security and agriculture
- Attribution and prediction of climate extremes (DRR)
- Climate and health - research and communication strategy
- Climate, water management and hydrological cycle (17)



WCRP and GFCS

Research Strategy (priority themes)

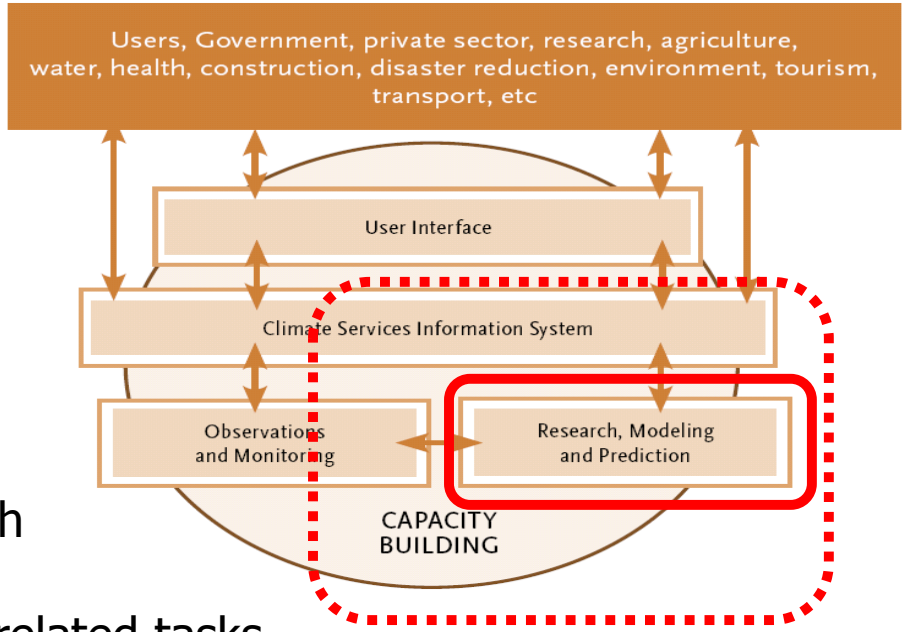
Research on climate predictability and improving prognostic skill:

- Sub-seasonal to seasonal
- Decadal to centennial

Research-based climate observations & dataset development

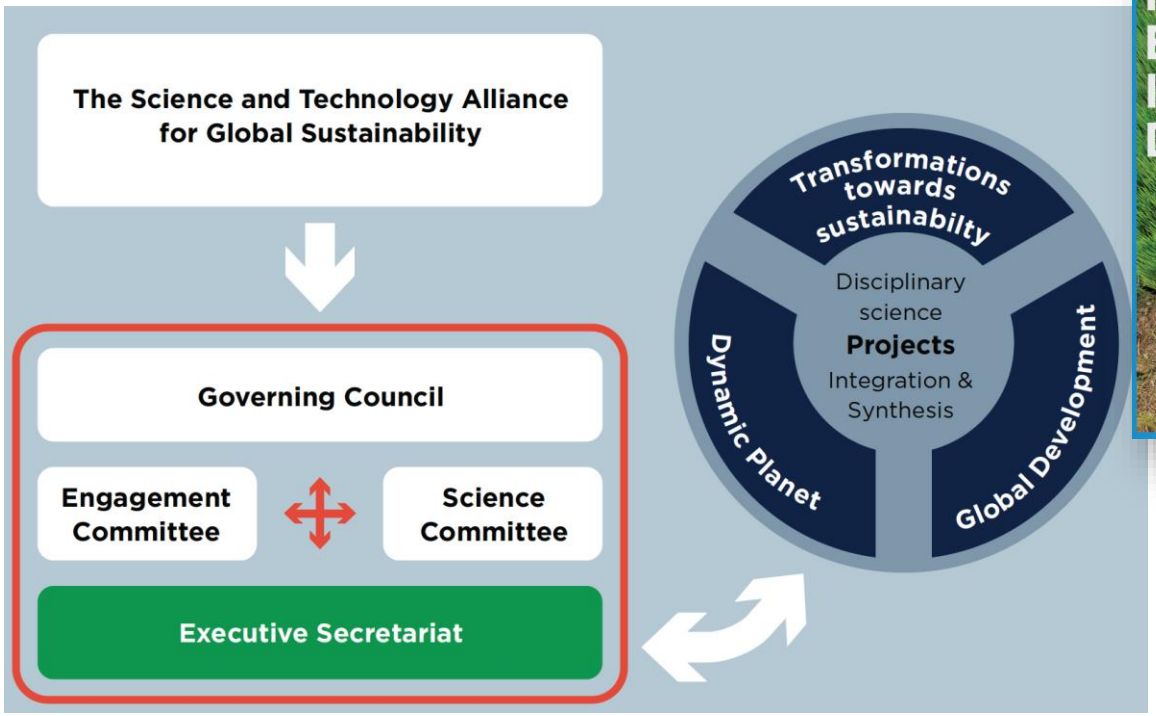
Strengthening coordination of research

Improved decision-making in climate related tasks



WCRP and futureearth

research for global sustainability



WCRP
World Climate Research Programme

WCRP Joint Planning Staff

Vladimir Ryabinin
Senior Scientific Officer

Boram Lee
Senior Scientific Officer

David Carlson
Director

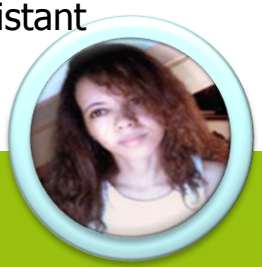
Michel Rixen
Senior Scientific Officer

Catherine Michaut
WCRP Support Unit

Roberta Boscolo
Communications Officer

Anne Chautard
Administrative Assistant

Pepi Potter
Administrative Assistant



Isabel Hall
Secretary

WMO IOC ICSU

WCRP
World Climate Research Programme

Thank You

blee@wmo.int

WMO IOC ICSU