



WORLD CLIMATE RESEARCH PROGRAMME

41-B Session of the WCRP Joint Scientific Committee

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



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Session 2: WCRP Implementation Plan and Future Structure

1. Draft structure and elements: Update on progress (Detlef and Helen; 15 mins)
2. Engagement with, and feedback from, partners (e.g. Future Earth, WWRP and GAW) and funders (USGCRP, EC, ...) (Detlef, Helen, Mike; 20 mins)
3. Discussion (All; 30 mins)

Break for 10 mins

And then: Session 3

Core Projects review: Progress and discussions (GEWEX and CLIVAR; 80 mins)

Duration: 60 mins for Session 2

Chair: Helen Cleugh

Rapporteur: Narelle van der Wel

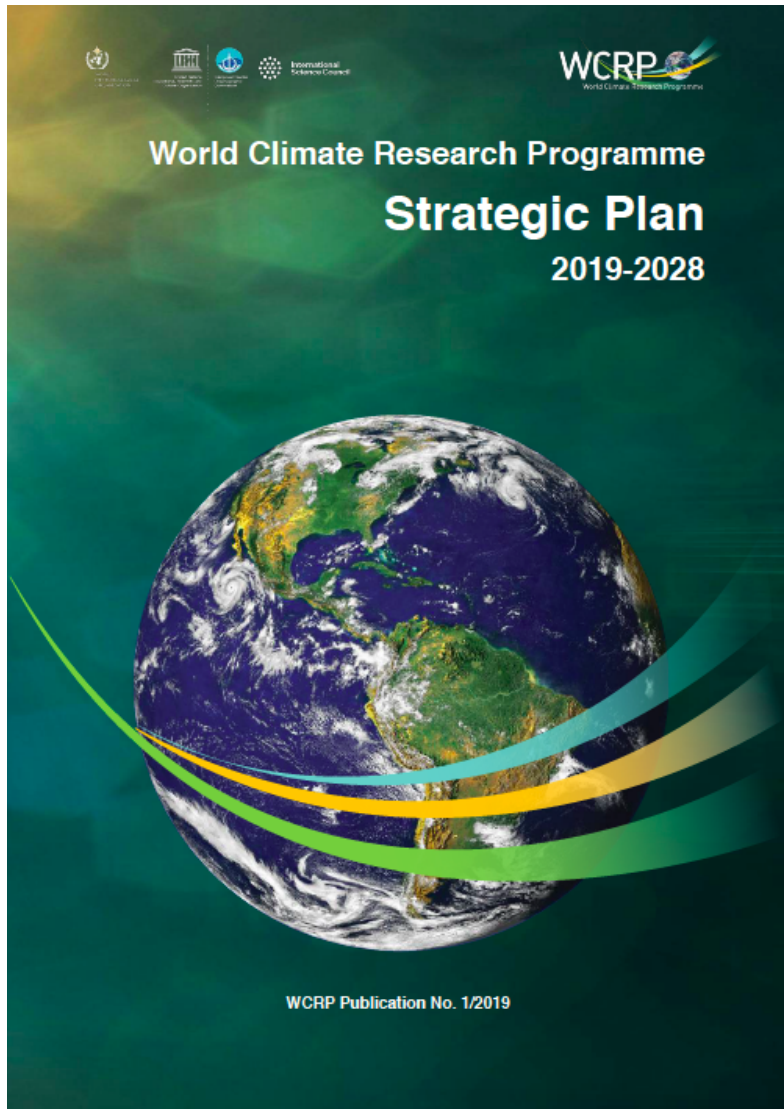
Chat Moderator: Michel Rixen



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The future of WCRP



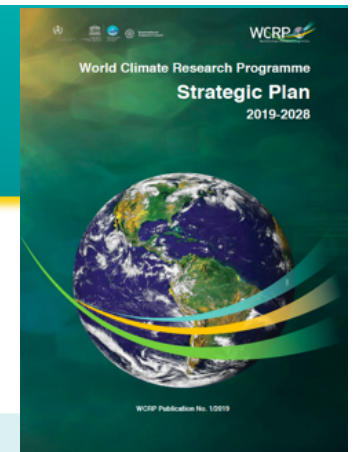
WCRP Strategic Plan 2019 - 2028



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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*)

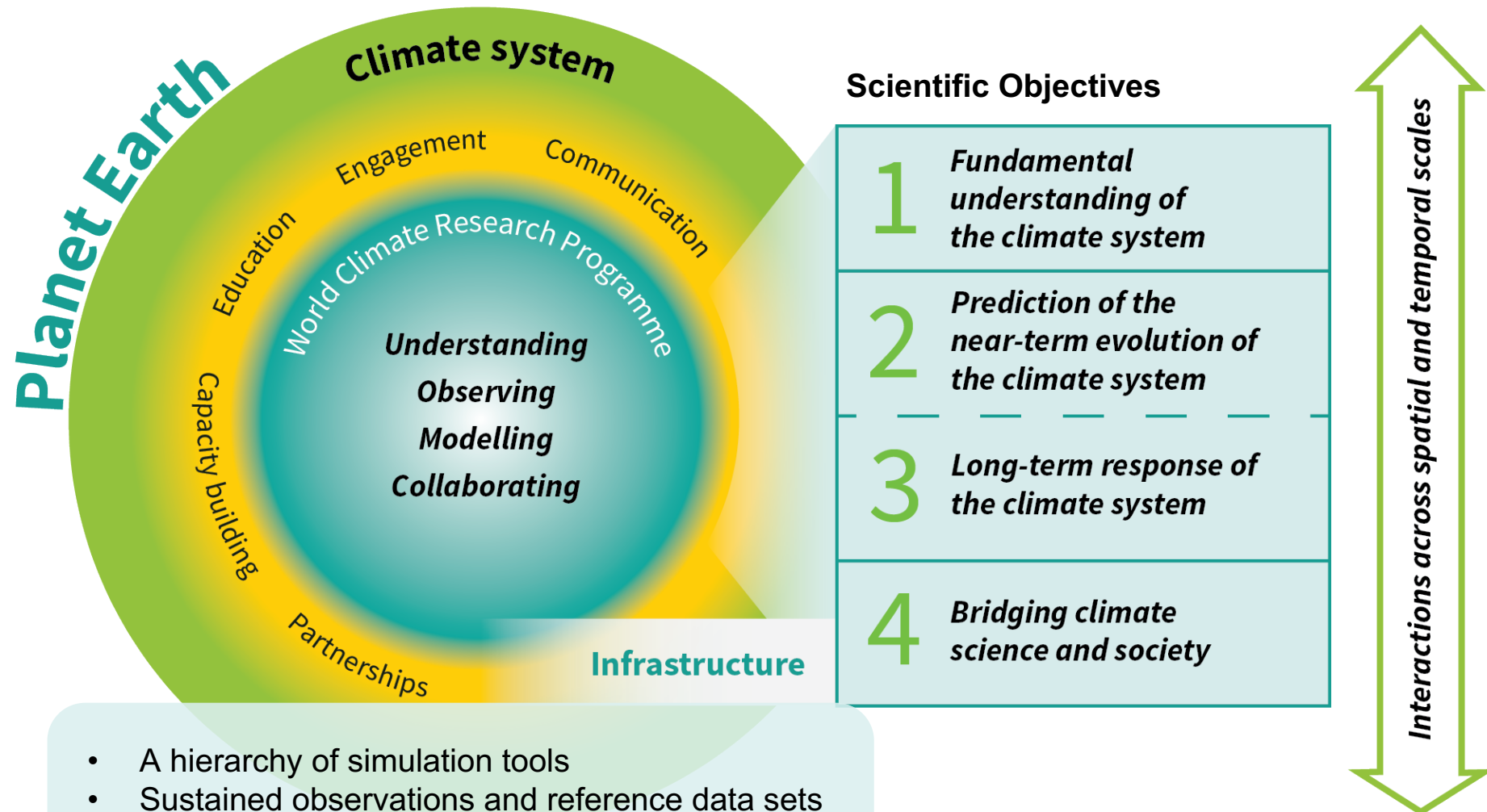
Coordinate and facilitate international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being.



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WCRP Strategic Plan: Overview



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*



Implementation Strategy

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



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**

**Provisional
Names**

Proposed Lighthouse Activities

Earth System Change

To design, and take major steps toward delivery of, an integrated capability for quantitative observation, explanation, early warning and prediction of Earth System Change on global and regional scales, with a focus on multi-annual to decadal timescales.

My Climate Risk

To develop a new framework for assessing and explaining regional climate risk to deliver climate information that is meaningful at the local scale.

Safe Landing Climates

To explore the routes to climate-safe landing 'spaces' for human and natural systems, on multi-decadal to centennial timescales; connecting climate, Earth system and socio-economic sciences. Explore present-to-future "pathways" for achievement of key SDGs.

Digital Earths

To develop a digital and dynamic representation of the Earth system, optimally blending models and observations, to enable an exploration of past, present and possible futures of the Earth system.

WCRP Academy

To establish one or more targeted capacity exchange climate programmes, working with one or more of the other lighthouses and established climate education providers, including universities.

Other High-level Science Questions

Considering all scales



Implementation: soft transition from ...

JOINT SCIENTIFIC COMMITTEE (JSC)

WCRP MODELLING ADVISORY COUNCIL (WMAC)

WCRP DATA ADVISORY COUNCIL (WDAC)

WORKING GROUPS ON:

COUPLED MODELLING (WGCM)
NUMERICAL EXPERIMENTATION (WGNE)

SUBSEASONAL TO INTERDECADAL PREDICTION (WGSIP)
REGIONAL CLIMATE (WGRC)



CRYOSPHERE-
CLIMATE



OCEAN-
ATMOSPHERE

GEWEX

LAND-
ATMOSPHERE



TROPOSPHERE-
STRATOSPHERE

WCRP
CORDEX

REGIONAL CLIMATE
DOWNSCALING

GRAND CHALLENGES

CLOUDS, CIRCULATION AND CLIMATE SENSITIVITY

REGIONAL SEA-LEVEL CHANGE AND COASTAL IMPACTS

CARBON FEEDBACKS IN THE CLIMATE SYSTEM

UNDERSTANDING AND PREDICTING WEATHER AND CLIMATE EXTREMES

NEAR-TERM CLIMATE PREDICTION

MELTING ICE AND GLOBAL CONSEQUENCES

WATER FOR THE FOOD BASKETS OF THE WORLD

JOINT PLANNING STAFF (JPS)

... new WCRP Structure

Joint Scientific Committee

WCRP Secretariat

Lighthouse Activities

Major experiments, high visibility projects,
infrastructure building blocks
Ambitious and exciting

International Offices

WCRP Communities

Enduring Capabilities, Homes for Expertise

- *Climate and Cryosphere*
- *Climate and Ocean Variability, Predictability and Change*
- *Global Energy and Water Exchanges*
- *Stratosphere-troposphere Processes And their Role in Climate*
- *Earth System Modelling and Observational Capabilities (new)*
- *Regional Climate Information for Societies (new)*

Ongoing and additional
activities and fora



Fixed-term Projects



Conferences and Workshops



Reference Datasets,
Evaluations and Benchmarking



Diversity- and Capacity-
building: ECRs, Regions

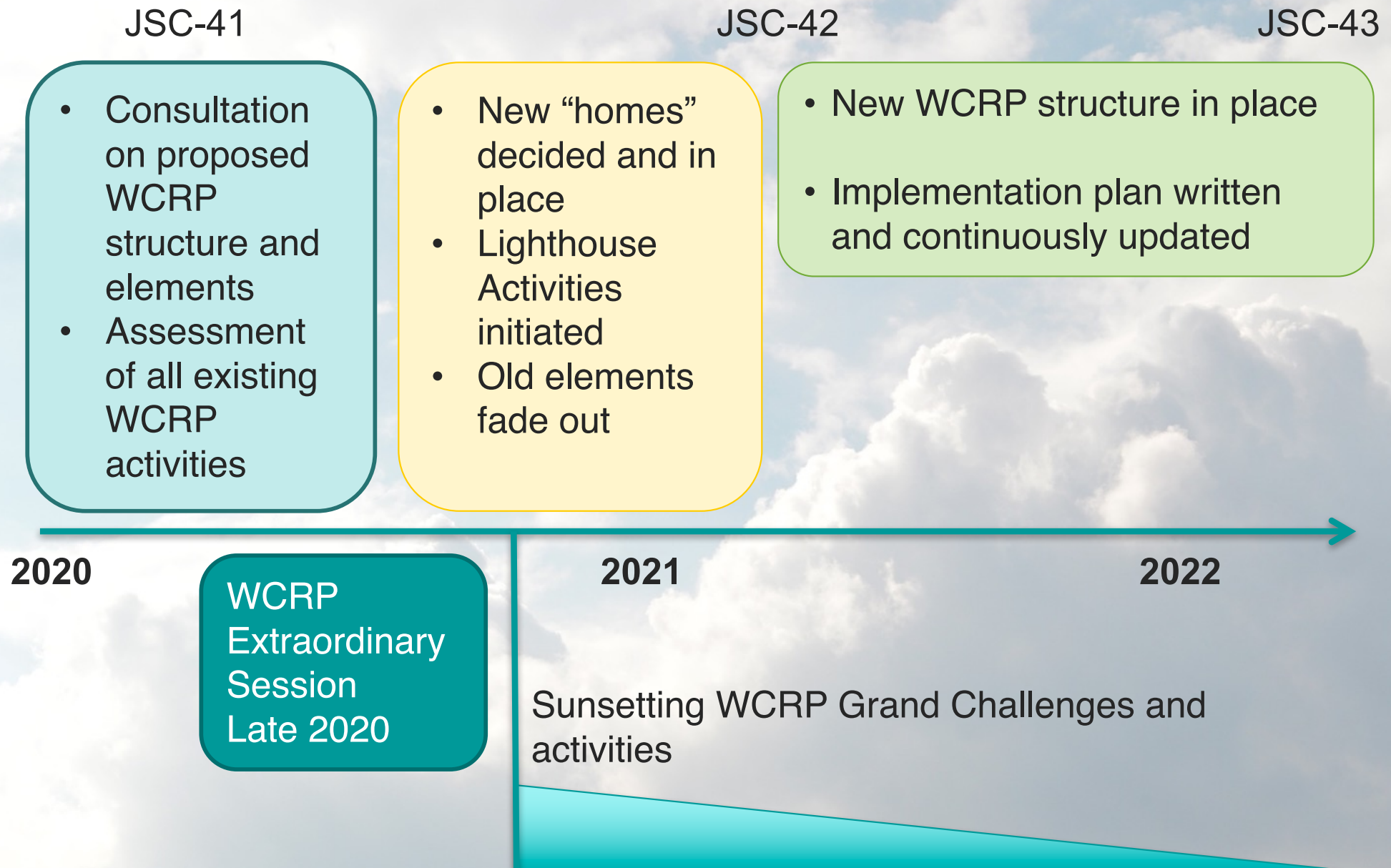


Rapid Updates, Syntheses
Assessments, Gap Analyses



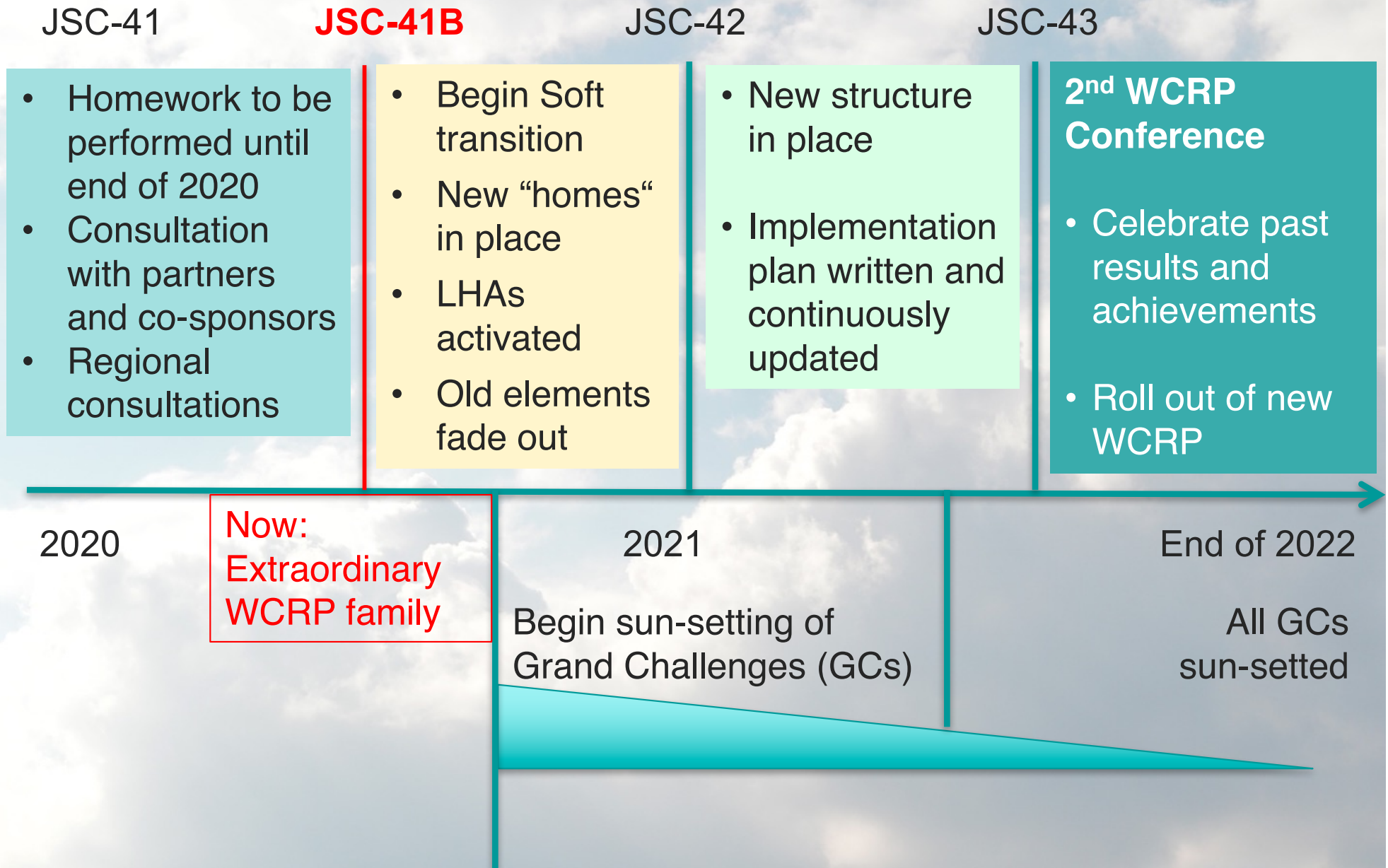
Communications and Outreach

Soft Transition



JSC-*n* = WCRP Joint Scientific Committee Sessions (meetings)

Ahead of us: Transition into a new WCRP



Consultation and Co-design

Over the past months, WCRP was consulting with the global community on its strategy, new activities and proposed new structure.

We started discussions on new “homes” for modelling and observations and for regional climate information for society.

Lighthouse Activities and other core research activities started to co-designed with our community and partners to ensure that the outcomes meet the urgent needs of society.

Our Joint Climate Future

WCRP's community stands ready to work with co-sponsors and partners, and support Nations, to ensure that society can access the climate knowledge and information needed.

To achieve this, WCRP engages with the next generation of scientists and interacts with sponsors and funders.



International
Science Council



Cooperation with Agencies

- There is mutual benefit arising for the development of the highest quality climate science and the alignment of fundamental and user-inspired research to maximize the impact on policy and applications.
- The integral role of WCRP in developing knowledge of the climate system will result in an increased understanding of the Earth system, including the complex interactions between the physical environment and human society.
- The four scientific objectives presented in the WCRP Strategic Plan 2019-2028 and the identified “Lighthouse Activities” are closely aligned with the thinking of leading scientists and funding agencies.

Regional Consultation

JSC-41 ACTION: Put necessary steps in place to “roll out” regional consultations on WCRP evolution.

- There needs to be an identified regional “lead” to make it happen; i.e. establish the process, establish a team from across the JSC/WCRP family to be the local leads, etc.
 - It is intended to draw upon the networks of JSC members, current WCRP Core Projects and core activities, and also YESS
- Chair and Vice Chair to attend these regional consultations to provide a consistent message
 - A package of materials will be developed to support these consultations
- Outcome: consultation outcomes will refine the Lighthouse Activities, their research program as well as the thinking process about WCRPs future structure.

Progress on this Action

- Regions defined and Regional Focal Points (RFPs) appointed
- Initial discussions with all RFPs, except Europe and Western Asia – which are planned for January 2021
- Plans for holding these initial WCRP-hosted “Climate Research Forums” are in hand and progressing
- Tune in on Day 4 of JSC-41B for more ...



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Lighthouse Activity Development Task Team

JSC-41 ACTION: Create a Task Team (TT) with a mandate to put the “flesh” on the Lighthouse Activity (LHA) “bones”, including consideration of: What do we need, what is missing?

- **Membership:** WCRP core activities to propose names from their membership to join this, along with those who originally wrote the LHA proposal text.
- **Key Steps**
 - The TT will develop a potential plan and then report back to the core activity leads and JSC.
 - The LHAs then will evolve in an iterative way, with the JSC and core activity leads taking on the responsibility of carrying the process forward to next levels.
 - Importantly this will include brainstorming about external engagement and exploring partnerships.

Progress on this Action

- “Science Plan Development” teams established, along with interim Leaders, for all LHAs
- Leaders will present their ideas and progress at JSC41B
- This will include addressing not just the science questions and challenges, but also discussions about how to:
 - Strengthen the diversity of the teams
 - Communicate, and facilitate engagement, with the WCRP family, allied Partner programs, funders, and users of the science
 - Ensure effective and clear links to WCRP Core Activities and Regional Consultations

Engagement with Partners and Funders

Update on Progress

1. Future Earth Joint Statement [Detlef]
 - MoUs as needed with Future Earth Programs (SOLAS, AIMES, PAGES et al)
2. START [Helen]
 - Assist WCRP in enhancing diversity in our membership
 - Exploring opportunities for collaborative activities and projects in Africa
3. USGCRP Discussions [Detlef]
 - Proposal to USGCRP [Detlef]
 - Engagement with LHAs
 - Co-Sponsorship - one of the North America Regional Consultations
5. Other....



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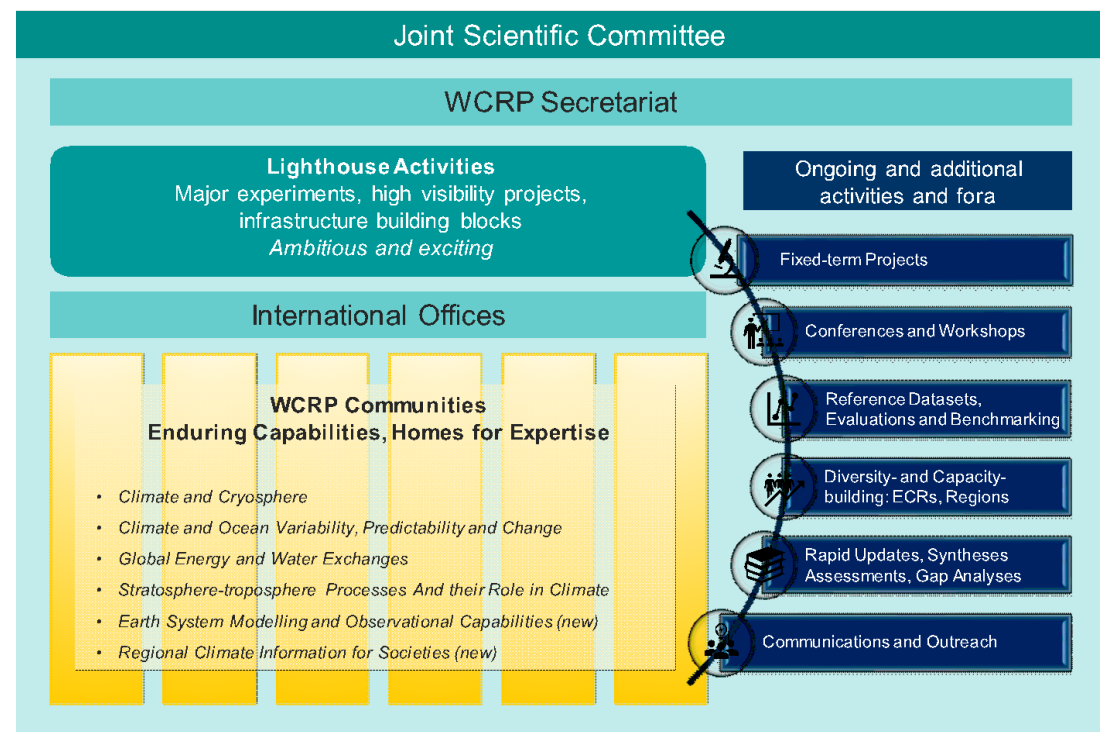


Concluding Comments and Discussion

- We have a “blueprint” for a new WCRP in terms of structure and elements
- While turning this “blueprint” into a fully functioning WCRP will take some time, our soft transition effectively begins this week
 - **Revised and new Core Projects:** enduring capabilities or “homes”
 - **Lighthouse Activities:** new science and activities to meet the most pressing challenges of the coming decade
 - **Climate Research Forums:** for consultation and dialogue with our WCRP family, research partners, funders and users
 - **Ongoing activities**

Discussion points for now and the week ahead:

- *Points of clarification*
- *Budgets*
- *Governance*
- *Anything overlooked*
- *Concerns*
- *New ideas*
- *.....*



Session 2: WCRP Strategy Implementation and Transition

End of Session 2



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Alignment between Lighthouse Activities, Implementation Priorities and Scientific Objectives (DRAFT *still under construction*)

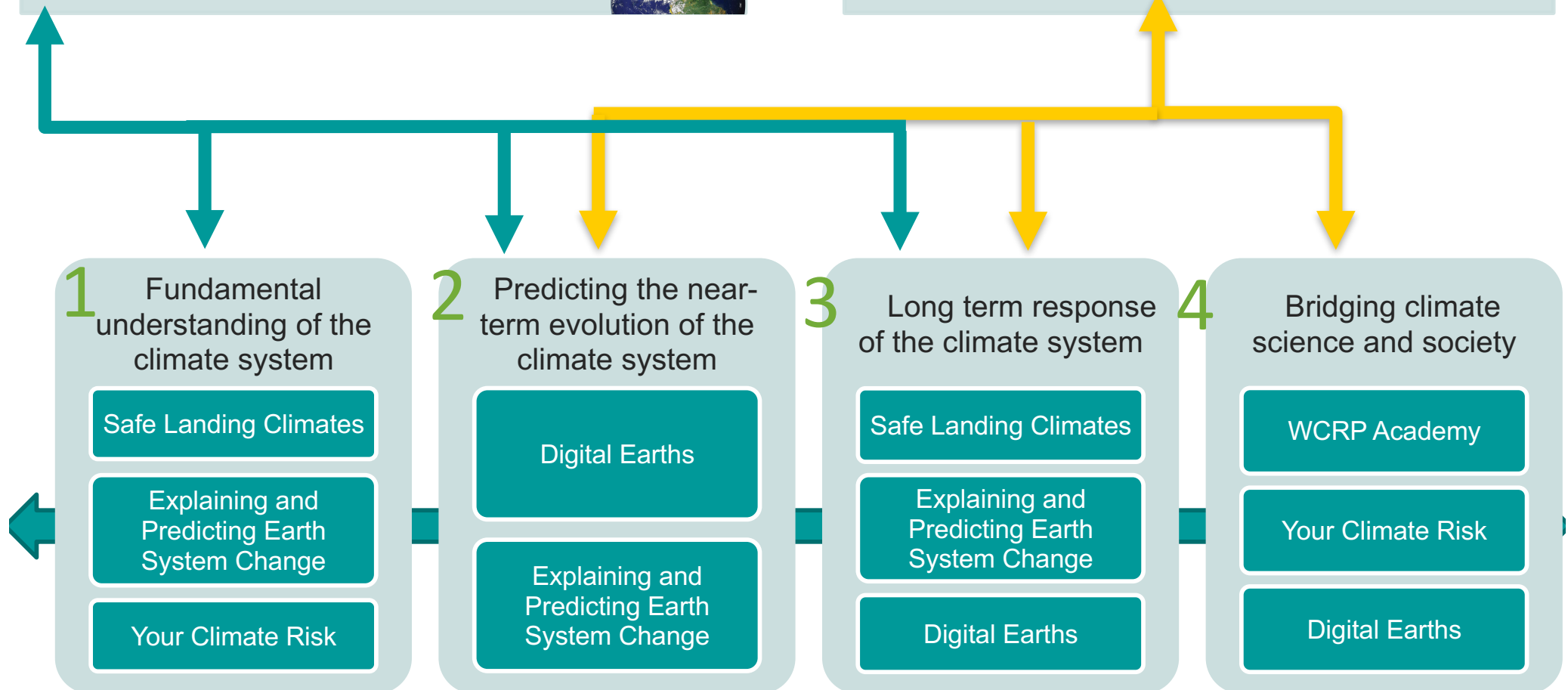
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Implementation Plan - Elements

Implementation Plan Elements

Research Projects

- Lifecycle (start and end) with a clear timeline and deliverables
- Joint and co-designed with Partners outside WCRP
- Deliver to Strategic Plan Objectives
- WCRP attributes: Integration; Scale; Relevance; Climate Change; Discovery and Innovation

Jointly through
dialogue and
co-design

Conferences, Workshops, WCRP Forum

**Enduring capability - people:
Climate System Elements
Infrastructure and Integration**

Projects and fora to engage and empower ECRs; and regional partners: part of the WCRP family

Regular Syntheses, Assessments, Gap Analyses Rapid Assessments and Reports

Reference data sets (observed, modelled)

Evaluations, Inter-comparisons, Benchmarking, Standards

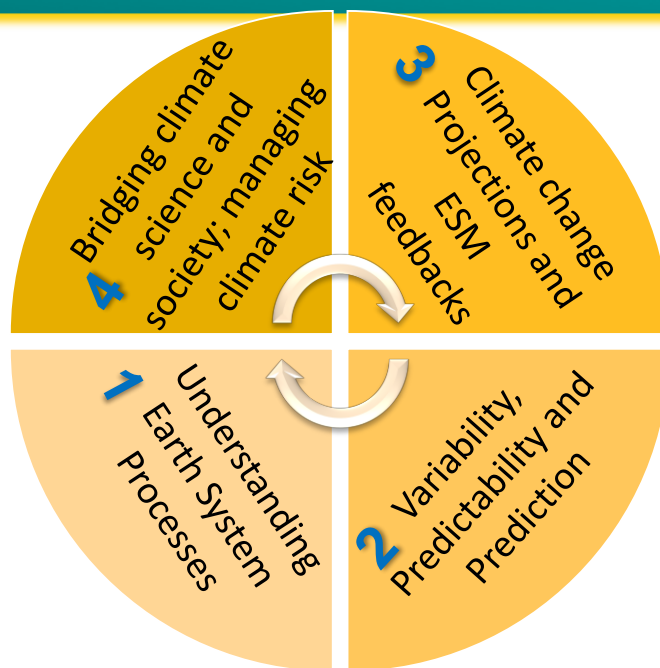
Coordination

Educational services and activities

Stakeholder engagement and outreach

Capacity building and communication

WCRP Mission: to coordinate and facilitate international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being



[Partnerships] Links to sustained observing systems (e.g. GCOS)

Science Questions: Relevance, Innovation, Discovery, Integration

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

Climate
System
Elements

Function: Enduring capability and Link to science communities

Water, Energy, Composition, Dynamics, (Biosphere)
Ocean, Atmosphere, Cryosphere, Land

Regional
and
Global

[Partnerships] Coordinated Model Experiments and Assessments | Production | Evaluation