



Welcome to the WCRP Climate Research Forum
Climate research priorities for the next decade
Europe and Western Asia Region
9 June 2021

WCRP Climate Research Forum

Program – Europe and Western Asia Region

Session 1: Introduction and Welcome [WCRP Joint Scientific Committee (JSC) Chairs, 10 mins]

Slido Introduction and Icebreaker

Session 2: WCRP's "Our Climate Future" [Helen Cleugh and Detlef Stammer, 25 mins]

Session 3: WCRP advancing climate science: Achievements, Impacts and Outlook

Chair: Detlef Stammer [65 mins]

Slido Poll and Q&A for Sessions 2 & 3

Short Break

Session 4: WCRP Coordination, Partnerships and Collaboration - two Panel Discussions
[45 mins each]

Panel 1: Opportunities to broaden WCRP science engagement.

***Moderators:** Pascale Braconnot, LSCE-IPSL, JSC Officer; and Svetlana Travova, Hydromet. Research Centre of Russian Federation, Regional Focal Point.*

Panel 2: Opportunities to strengthen support for WCRP science.

***Moderators:** Martin Visbeck, GEOMAR, JSC Member; and Eleni Katragkou, Aristotle University of Thessaloniki, Regional Focal Point.*

Session 5: Wrap-up and Thank you [Detlef Stammer and Helen Cleugh, 10 mins]

1. Introduction and Welcome

- Welcome from Detlef Stammer and Helen Cleugh
Chair and Vice Chair of the Joint Scientific Committee (JSC) of the WCRP
- Purpose of the Climate Research Forums

1. Introduction and Welcome

Special thanks to:

a) Our WCRP Regional Focal Points, who organized the Forum, and their institutions:

- Andrea Steiner, Center for Climate and Global Change, University of Graz, Austria
- Andrea Storto, Institute of Marine Sciences (ISMAR), National Research of Council (CNR), Italy
- Eleni Katragkou, Aristotle University of Thessaloniki, Greece
- Frank Kreienkamp, Deutscher Wetterdienst, Germany
- Hauke Schmidt, Max Planck Institute for Meteorology (MPI), Germany
- Masa Kageyama, Laboratoire des sciences du climat et de l'environnement (LSCE), France
- Orli Lachmy, Open University of Israel, Israel
- Ségolène Berthou, Met Office Hadley Centre, UK
- Stefan Sobolowski, NORCE and the Bjerknes Centre for Climate Research, Norway
- Svetlana Travova, Hydrometeorological Research Centre of the Russian Federation, Russia

b) WCRP's CliC (Beatriz Balino) and SPARC (Mareike Heckl) Project Offices, and the WCRP Secretariat (Narelle van der Wel), for their assistance in planning for, and running, today's Forum.

c) Deutscher Wetterdienst (DWD) (Frank Kreienkamp and Miriam Tivig) for hosting the Forum and supporting the WebEx videoconference platform



2. WORLD CLIMATE RESEARCH PROGRAMME (WCRP)

Our Climate Future

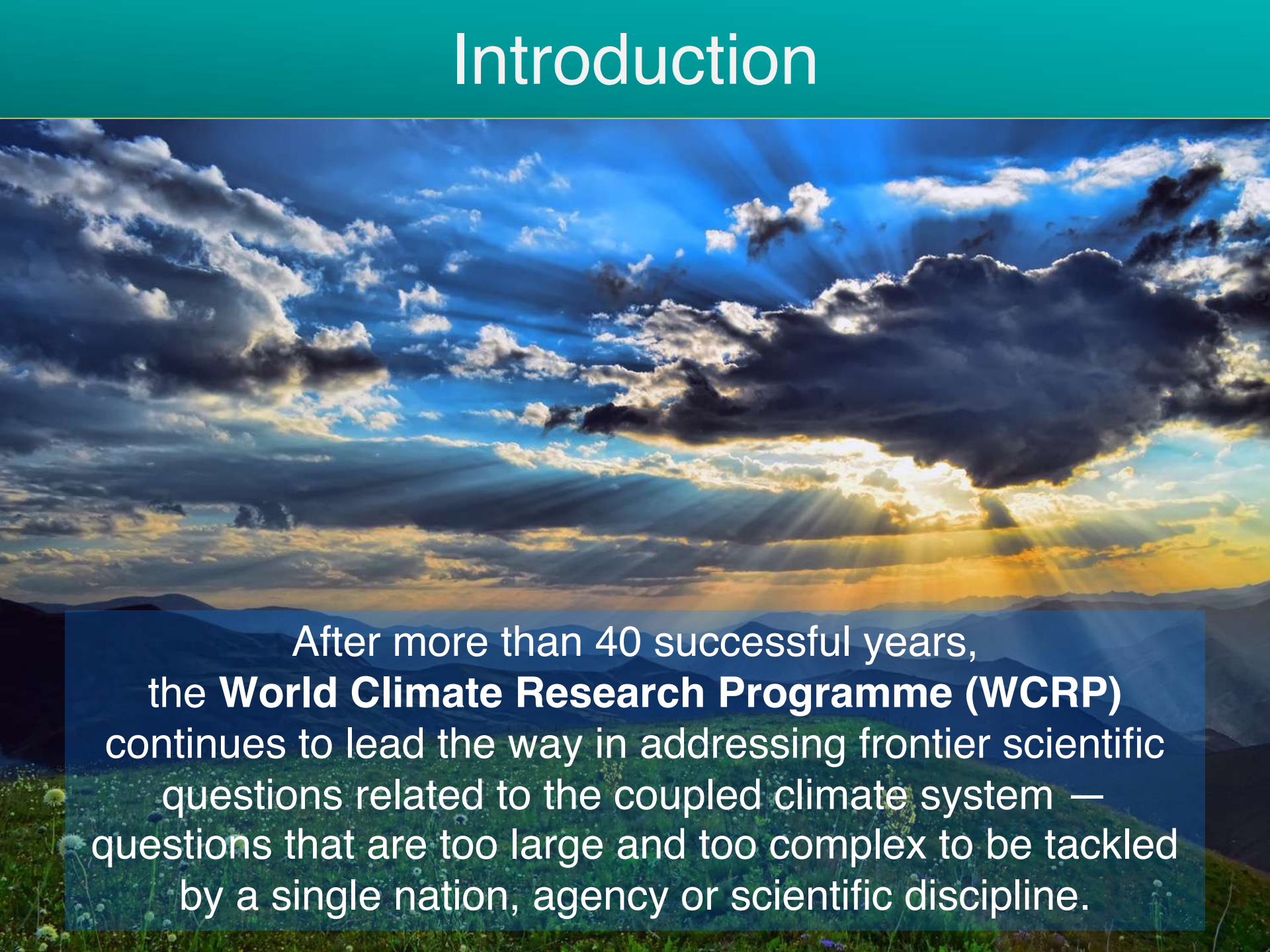
Detlef Stammer and Helen Cleugh
WCRP JSC Chair and Vice Chair



International
Science Council



Introduction



After more than 40 successful years,
the **World Climate Research Programme (WCRP)**
continues to lead the way in addressing frontier scientific
questions related to the coupled climate system —
questions that are too large and too complex to be tackled
by a single nation, agency or scientific discipline.

Introduction

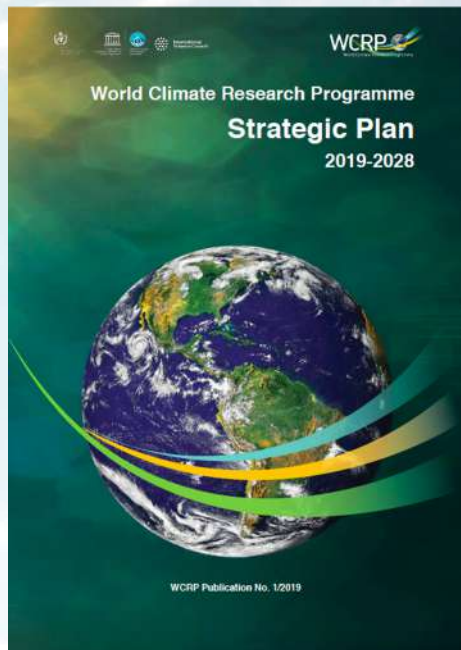
In the past, WCRP pioneered international climate research advancing our understanding of the climate system and how it is being affected by humans.

The next decade will bring even bigger challenges that can only be addressed through a worldwide coordinated effort; involving co-design and stakeholder engagement conducted by a prepared scientific workforce.

Society requires decision-relevant, evidence-based climate information to support adaptation planning and mitigation strategies.

The Future WCRP

A Strategic Plan for this Decade



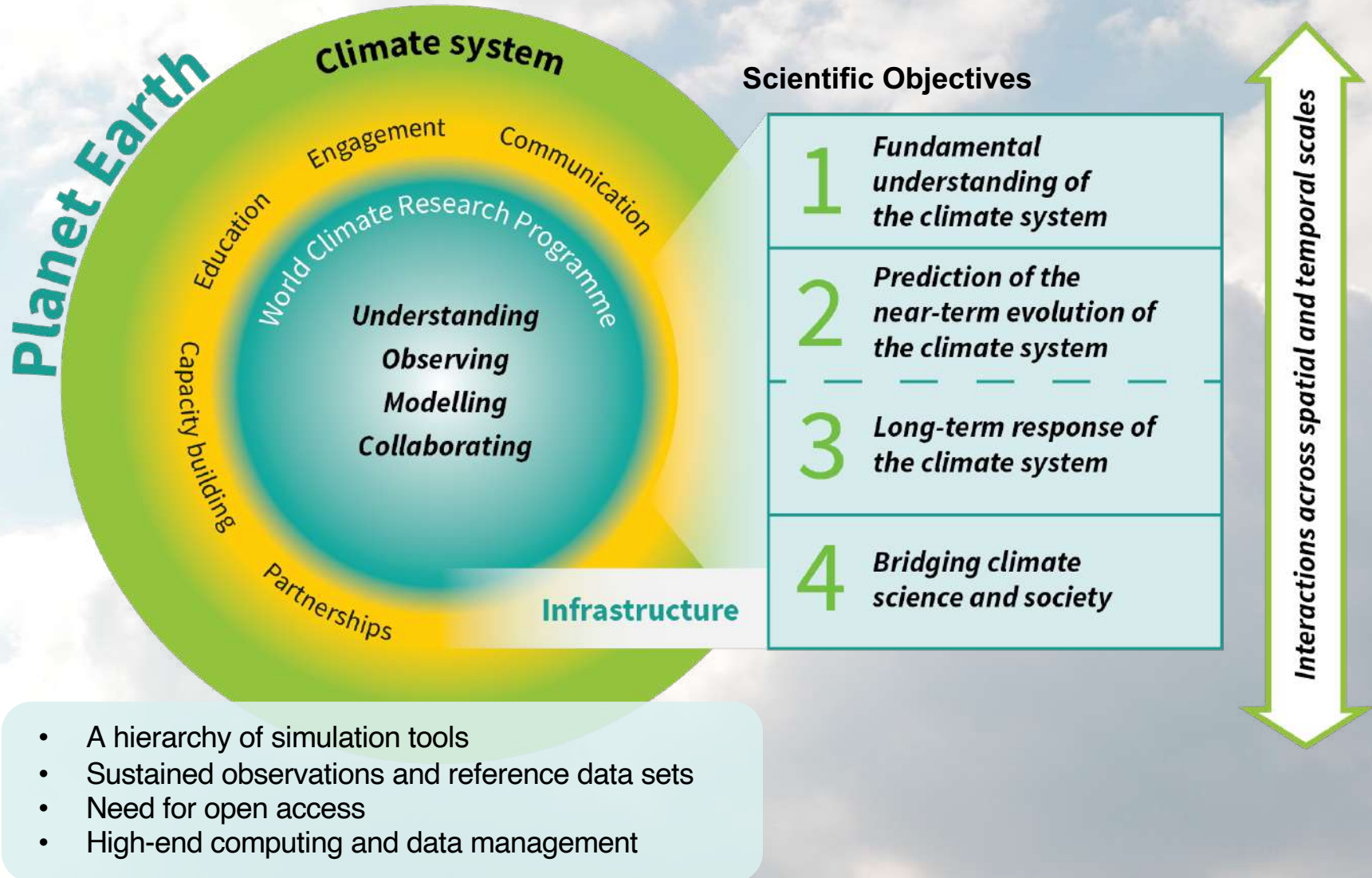
The Vision *(our aspiration)*

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.

Overview of the WCRP Strategic Plan



Implementing the Strategy

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



WCRP Lighthouse Activities

These are new scientific approaches, technologies, and institutional frameworks required to meet society's need for robust and actionable climate information

Explaining and
Predicting Earth
System Change

Digital Earths

Safe
Landing
Climates

WCRP
Academy

WCRP Lighthouses

My Climate
Risk

WCRP Lighthouse Activities

<https://www.wcrp-climate.org/lha-overview>



Explaining and Predicting 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 millennial timescales; connecting climate, Earth system and socio-economic sciences.
Explore present-to-future "pathways" for achievement of key SDGs.

WCRP Academy

To determine the requirements for climate research education and to build enabling mechanisms.
The Academy will work with WCRP core activities and established climate education providers, including universities, to achieve this.

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 Lighthouse Activities



Digital Earths

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

Co-leads: Peter Bauer and Christian Jakob

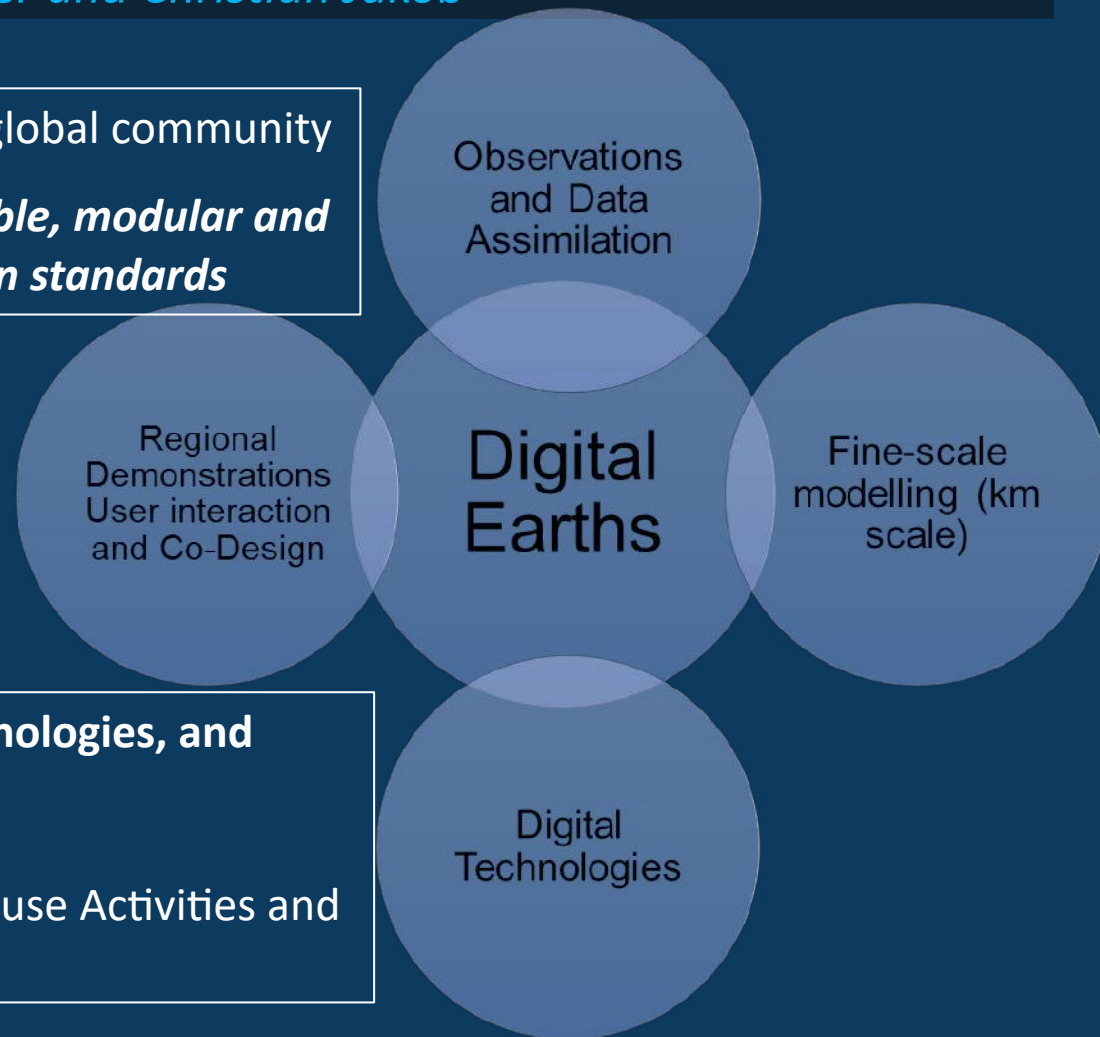
Framework to develop capabilities for global community

Software that is ***open and freely available, modular and interoperable, and built to agreed-upon standards***

Global and regional systems envisaged under the Framework

Four components across **Science, Technologies, and User engagement**

Cross-cutting with other WCRP Lighthouse Activities and Core Projects



WCRP Lighthouse Activities: Status

Draft Science / Business Plans for each Lighthouse Activity are being developed by the WCRP community by June 2021, with the goal of broader consultation through 2021.

We aim to:

- **Enhance the diversity** of the science community - as both contributors to, and users of, research.
- **Co-design the activities** with key partners and get input from our stakeholders.
- **Ensure they are linked to WCRP's** core research activities.

We also seek interest from potential funding partners.

More information on how you can connect on last slide of Session 2, as well as Sessions 3 and 5

WCRP Core Projects and Research Communities

Enduring Capabilities, “Homes” of Expertise

Prioritize the research and technologies needed to advance our understanding of the multi-scale dynamics of Earth's climate system, and co-develop climate information needed for decision support, adaptation planning and climate mitigation.

This requires:

- Expertise and capabilities across oceans, cryosphere, land and atmospheric science domains.
- Process studies, observations, modelling and simulation.
- Capability for providing regional climate information.
- Model – data fusion science.
- Modelling and observing technologies and infrastructure.

WCRP's Ongoing Core Projects

Enduring Capabilities, Research Community "Homes"

CLIVAR - Climate and Ocean Variability, Predictability and Change

Understanding the **coupled ocean-atmosphere system**, to better understand climate variability and change.

www.clivar.org



GEWEX - Global Energy and Water Exchanges

Observing, understanding and modelling the **global and regional water cycles and energy budgets** in the Earth's atmosphere and at the surface.

www.gewex.org



CliC - Climate and Cryosphere

Improving our understanding of the **cryosphere and its interactions with the global climate system**; and using the cryosphere to detect climate change.

www.climate-cryosphere.org



SPARC - Stratosphere-troposphere Processes and their Role in Climate

The **role of the atmosphere** in climate variability and prediction; atmospheric dynamics and predictability; chemistry and climate.

www.sparc-climate.org



WCRP's New Core Projects

Enduring Capabilities, Research Community “Homes”

Earth System Modelling and Observations [ESMO] (new)

Science and technologies for modelling, observations and model – data fusion.
Unite and strengthen the work of these communities and groups:

- Working Groups on:
 - Coupled Modelling (WGCM) incl. CMIP (CMIP & Infrastructure Panels)
 - Numerical Experimentation (WGNE)
 - Sub-seasonal to Interdecadal Prediction (WGSIP)
- WCRP Modelling and Data Advisory Councils (WMAC and WDAC)



Regional Information for Societies [RIfS] (new)

Science and capability needed for providing societally-relevant climate information for regions.
Unite and strengthen the work of these communities and groups:

- CORDEX (science and applications of regional climate downscaling)
- Working Group on Regional Climate (WGRC)



WCRP Grand Challenges

will “sunset” by 2022; i.e. transition to other research activities and/or conclude.





United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission



WORLD
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ORGANIZATION

WCRP Structure



International
Science Council

Joint Scientific Committee (JSC)

WCRP Secretariat

Lighthouse Activities *New*

International Offices

Core Projects and Research Communities

- Climate and Cryosphere (CliC)
- Global Energy and Water Exchanges (GEWEX)
- Climate and Ocean Variability, Predictability and Change (CLIVAR)
- Stratosphere-troposphere Processes And their Role in Climate (SPARC)
- *Earth System Modelling and Observations (ESMO)*
- *Regional Information for Societies (RIfS)*

Ongoing 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 analysis
- Communications and outreach

A soft transition to the new WCRP: Timeline

2020

- Consultation on proposed WCRP structure and elements
- Assessment of all existing WCRP activities

2021

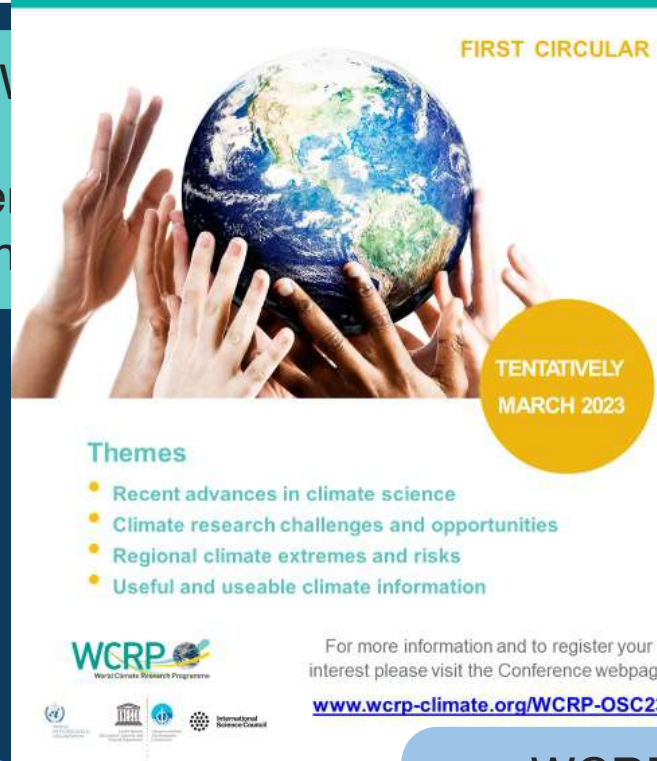
- New elements (Core Projects): Approved in principle; being designed
- Lighthouse Activities: Science planning underway; activities initiated
- Older elements transitioning

- New WCRP
- Implementation continuing

WCRP Open Science Conference 2023

Advancing climate science for a sustainable future

2023



WCRP Open
Science Conference
in first half of 2023

“Sunset” and transition
Grand Challenges

Our Joint Climate Future

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

It is also important for WCRP to engage the next generation of scientists and improve our diversity – across nations, regions and disciplines.

We want to explore ways to better connect and work with you, *during and after today's Forum.*



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You can help shape the future WCRP

We welcome your suggestions and feedback on our new Lighthouse activities, new and ongoing Core Projects, and new structure.

We are very grateful to all our sponsors, nations and agencies who have supported us so far.

We welcome you to continue on this journey with us, to foster, coordinate and co-design the science that is important for you.

See last slide for information describing how you can connect with us

WCRP is here to support you

Sponsors, Partners and Nations: WCRP stands ready to support your needs for relevant, accessible and credible climate knowledge and information, by:

- Working with you to jointly identify research frontiers, challenges and collaborations.
- Directing our scientific expertise towards innovation in new scientific, technological and institutional approaches.

Through WCRP's core activities, i.e. Core Projects, Lighthouse activities etc.

See last slide for information describing how you can connect with us

Today's Forum is just the beginning

We welcome your ideas for follow-up activities, for example:

- Forums to focus on specific research themes, from our Core Projects and Lighthouse activities.
- Further engagement with partners and sponsors, to:
 - Build and strengthen partnerships
 - Identify research priorities of mutual benefit
 - Co-design research
- Connecting with Early to Mid-Career Researchers, including YESS (Young Earth System Scientists).

See last slide for information describing how you can connect with us

Our Climate Future – Key Contacts

We are keen to hear from you and continue the conversation. We will therefore contact you after today's Forum – *please let us know if you'd rather not be contacted.*

If you want to know more, or wish to be involved in any of our activities, then you can:

1. Email us with questions or ideas at climatefuture@wcrp-climate.org
2. Register for email updates at www.wcrp-climate.org/wcrp-ip-connect
3. Register at www.wcrp-climate.org/climate-research-forums to tell us more about you and your interests
4. Check website for updates at www.wcrp-climate.org/wcrp-ip-overview

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Chair: Detlef Stammer [65 mins]

- a) WCRP 40th Anniversary Video
- b) WCRP Lighthouse Activities: Showcasing draft science plans for discussion and feedback
 - Safe Landing Climates
 - WCRP Academy
 - My Climate Risk
 - Explaining and Predicting Earth System Change
- c) WCRP Core Activities: Showcasing achievements and impact
 - CLIVAR, GEWEX, SPARC, CMIP and CORDEX

Q&A using slido

Slido Survey / Poll for Sessions 2 & 3

Short Break

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Program – Europe and Western Asia Region

Panel 1: Panel Members are researchers from across the region:

- Wendy Broadgate, Future Earth Global Hub Director, Sweden
- Alexander Chernokulsky, Obukhov Institute of Atmospheric Physics, Russia
- Panos Hadjinicolaou, Climate and Atmosphere Research Center, The Cyprus Institute, Cyprus
- Orli Lachmy, Open University of Israel, Israel
- Gaby Langendijk, GERICS Climate Service Center, Germany, and Young Earth System Scientists (YESS) Community

Session 4: WCRP Coordination, Partnerships and Collaboration: Two Panel Discussions [45 mins each]

Panel 1: Opportunities to broaden WCRP science engagement.

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Panel 2: Opportunities to strengthen support for WCRP science.

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WCRP Climate Research Forum

Panel 2: Representatives from funding agencies across the region.

- Philippe Tulkens, Climate and Planetary Boundaries Unit, European Commission, Belgium
- Sarah Webb, Natural Environment Research Council, UK
- Antonios Gypakis, General Secretariat for Research and Innovation, Greece
- Susanne Mecklenburg, European Space Agency (ESA), UK
- Jean-Noël Thépaut, Copernicus Services, European Centre for Medium-Range Weather Forecasts (ECMWF), UK

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5. WORLD CLIMATE RESEARCH PROGRAMME

Wrap-up and Thank you

Detlef Stammer and Helen Cleugh
WCRP Chair and JSC Vice Chair

Next steps - today's Forum is just the beginning

We welcome your ideas for follow-up activities. These could be virtual Forums like today as well as further bilateral discussions.

For example, to explore opportunities for:

- Follow-up Forums to focus on specific research themes, from our Core Projects or Lighthouse activities.
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3. Register at www.wcrp-climate.org/climate-research-forums to tell us more about you and your interests
4. Check website for updates at www.wcrp-climate.org/wcrp-ip-overview

Thank you
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