
WCRP
World Climate Research Programme
Welcome to the WCRP Climate Research Forum
Climate research priorities for the next decade
Southeast Asia Sub-Region
25 May 2021

Technical Guidance and Participation

- Technical guidance:
  - Please have **sli.do** loaded before we start the first Session
    - *The link is in the Zoom Chat window; it was also provided in the email from Eventbrite (along with the Zoom videoconference link).*
  - A reminder to keep your microphone off unless you are invited to speak.
  - For technical assistance, email Beatriz: **beatriz.balino@uib.no**
- Participation in today's Forum:
  - You can post questions into the Zoom Q&A window
    - *This will be monitored, and questions relayed to the Speakers.*
  - Discussion is very welcome in the Chat window/area ("Zoom Chat")
    - *This won't be monitored for questions – please use Zoom Q&A!*
  - The Forum's final Sessions 4 and 5 include opportunities for discussion as well as information about how to engage with WCRP after today.
- Recording:
  - This Forum is being recorded to assist in documenting the outcomes.

WCRP Climate Research Forum

Program – Southeast Asia Sub-Region

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

Sli.Do Introduction and Icebreaker

Session 2: WCRP's "Our Climate Future" [Detlef Stammer and Helen Cleugh, 20 mins]

Sli.Do Poll for Session 2

Session 3: Climate Science and Information Priorities and Needs – Researcher and End User Perspectives from 4 invited Speakers [60 mins]

***Chair**: Dr Anastasia Kuswardani, Ministry of Marine Affairs and Fisheries, Jakarta*

Session 4: Moderated Q&A Session [20 mins]

***Chair and Moderator**: Dr Kendra Gotangco Gonzales, Ateneo de Manila University*

- Q&A from Session 3
- Feedback and discussion on WCRP initiatives

Sli.Do Poll for Sessions 3 and 4

Session 5: Concluding discussion [Helen Cleugh, 10 mins]

- Key messages.
- Plans for future forums.
- Ways to engage with WCRP after this Forum.

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

- Special thanks to:
  - Our WCRP Regional Focal Points, who organized the Forum, and their respective institutions
    - *Kendra Gotangco, Ateneo de Manila University, Philippines.*
    - *Fredolin Tangang, National University of Malaysia, Malaysia.*
    - *Anna Kuswardani, Ministry of Marine Affairs and Fisheries, Indonesia.*
  - WCRP's CORA Project Office for their assistance in planning for, and running, today's Forum.

- Sli.do Introduction and Icebreaker question(s)

Sli.Do Introduction and Icebreaker question(s)

- A reminder that **Zoom chat** is for discussion and comments; while **Zoom Q&A** is where you can post questions.
  - *We will aim to take as many questions as possible in the time available*
  - *Missed questions? We will try and address in an FAQ from the Forum*

- We will be using **sli.do** to get your feedback and input to some of our questions.
  - *As an icebreaker, and practice using sli.do, please launch sli.do and ...*

slido

Icebreaker

ⓘ Start presenting to display the poll results on this slide.

2. WORLD CLIMATE RESEARCH PROGRAMME (WCRP)

Our Climate Future

Detlef Stammer and Helen Cleugh
WCRP JSC Chair and Vice Chair

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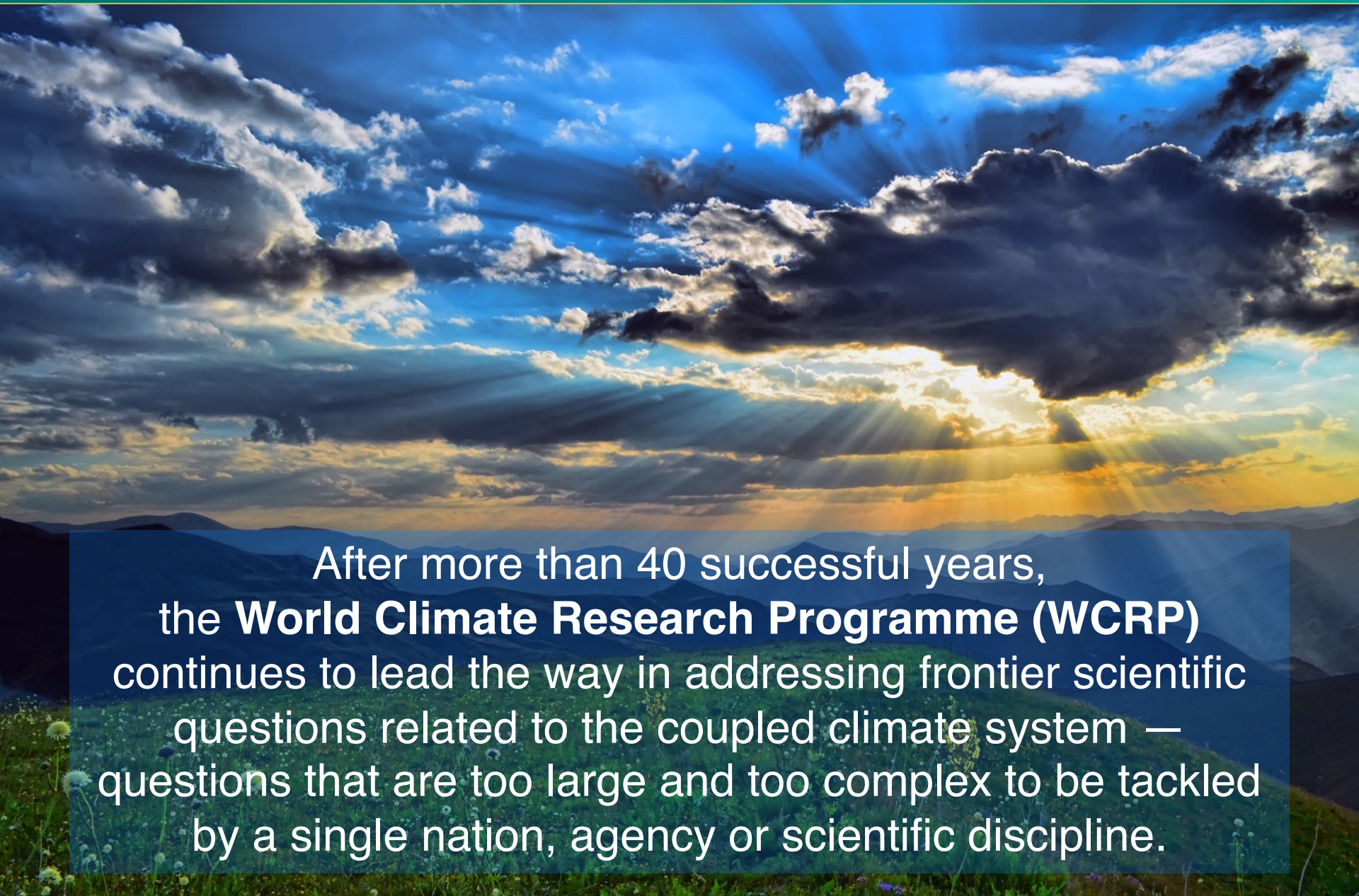
WCRP World Climate Research Programme

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

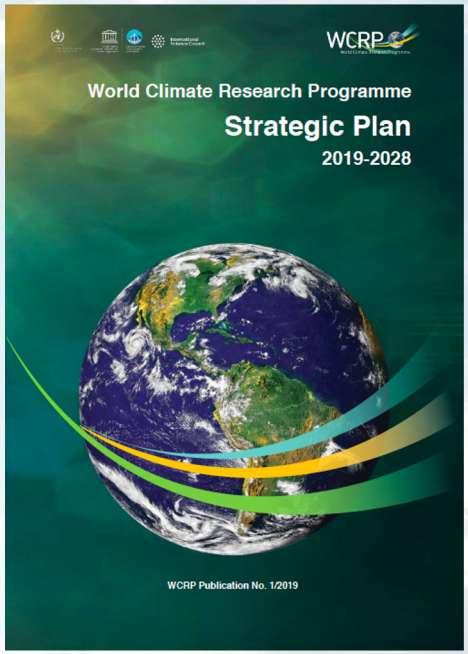
In the past, WCRP pioneered international climate research advancing our understanding of the climate system and how it is being affected by humans.

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*)

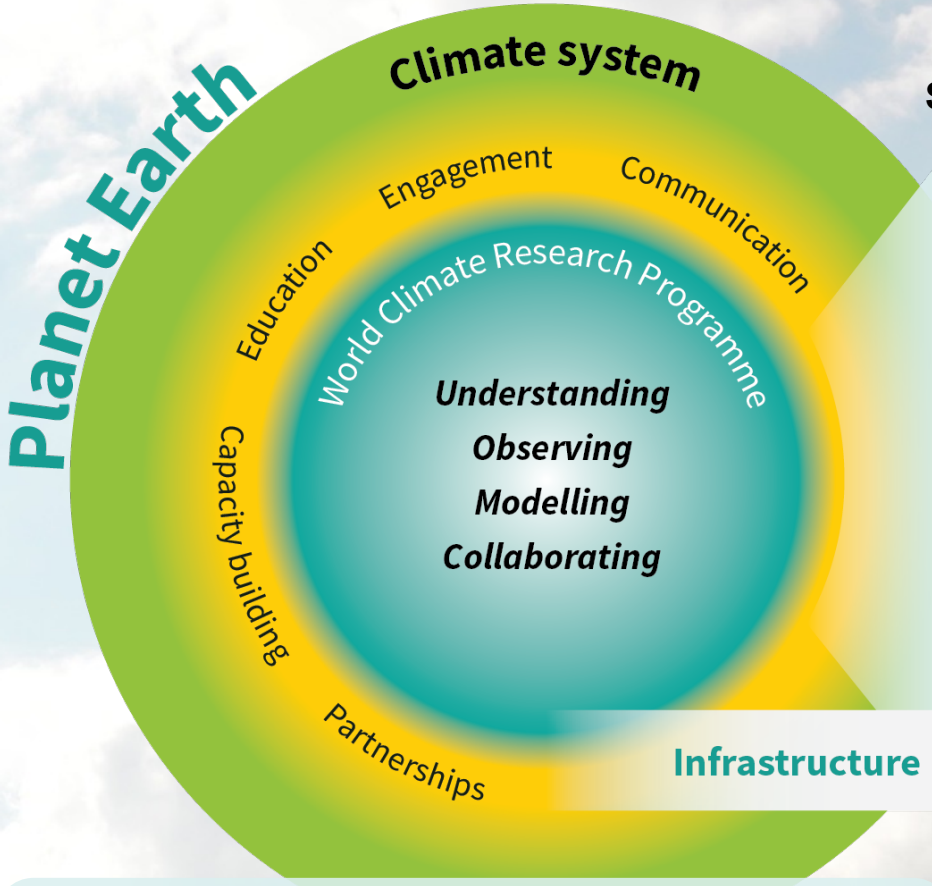
A world that uses sound, relevant, and timely climate science to ensure a more resilient present and sustainable future for humankind.

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.

www.wcrp-climate.org/wcrp-sp-overview

Overview of the WCRP Strategic Plan



Scientific Objectives

1. *Fundamental understanding of the climate system*
2. *Prediction of the near-term evolution of the climate system*
3. *Long-term response of the climate system*
4. *Bridging climate science and society*

Interactions across spatial and temporal scales

- A hierarchy of simulation tools
- Sustained observations and reference data sets
- Need for open access
- High-end computing and data management

www.wcrp-climate.org/wcrp-sp

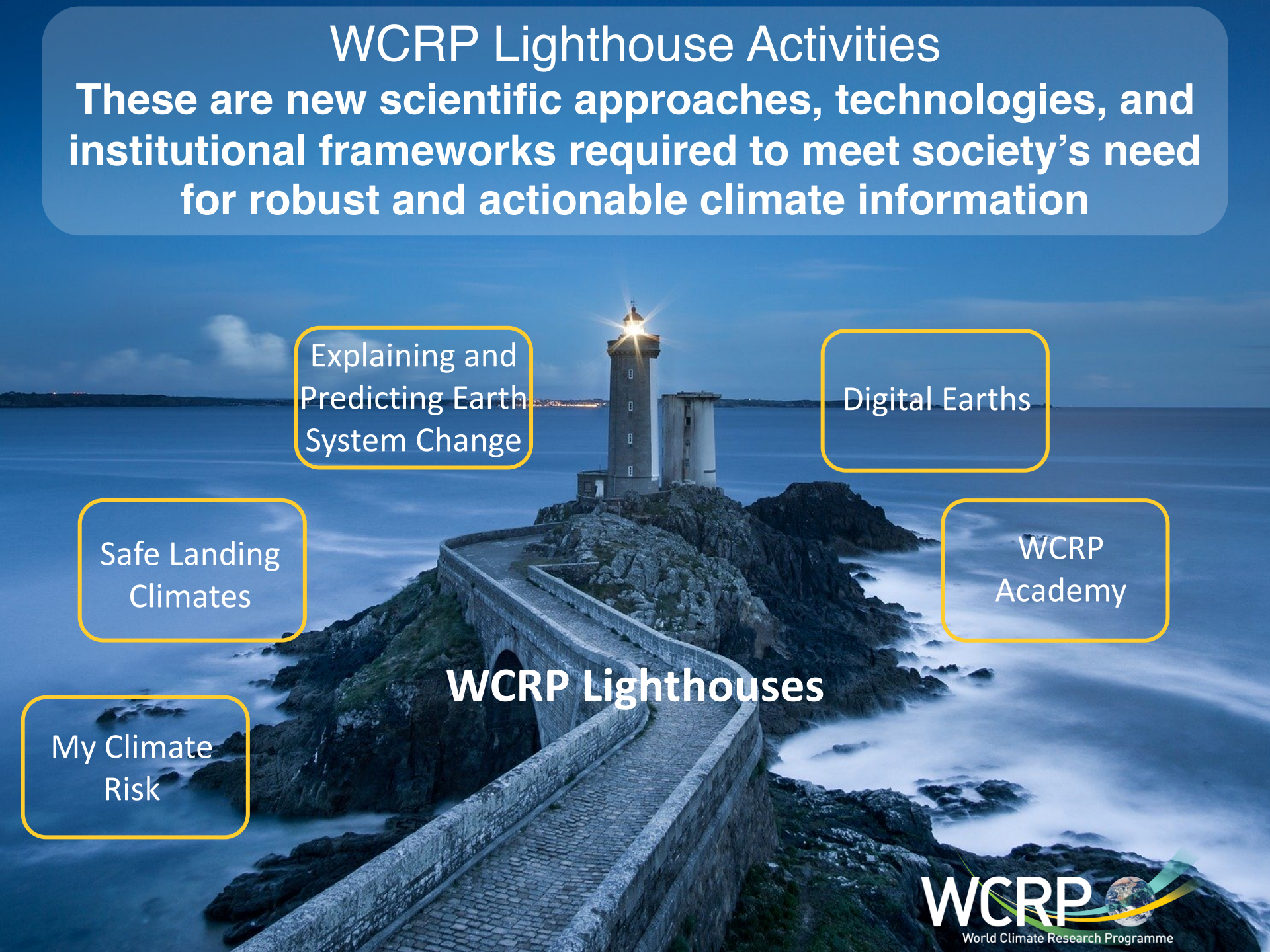
Implementing the Strategy

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
World Climate Research Programme

WCRP Lighthouse Activities

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



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.
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 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.

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.

Session 5 will provide information on how you can connect

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)

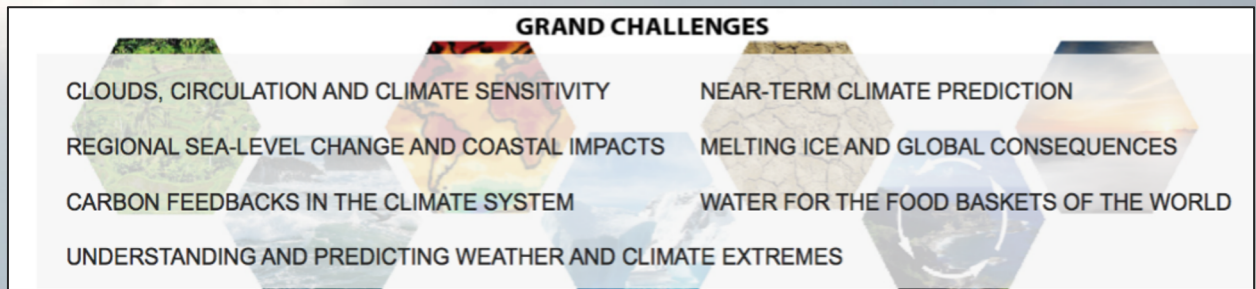
Science and capability needed for providing societally-relevant climate information for regions.

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 CORDEX

WCRP Grand Challenges will "sunset" by 2022; i.e. transition to other research activities and/or conclude.



WCRP Structure

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

WORLD METEOROLOGICAL ORGANIZATION

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 W
- Imple
  contin

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

2023

"Sunset" and transition Grand Challenges

WCRP Open Science Conference in first half of 2023

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:
Sessions 4, 5 and beyond.

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United Nations Educational, Scientific and Cultural Organization
Intergovernmental Oceanographic Commission
International Science Council
WCRP World Climate Research Programme

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World Climate Research Programme

Session 4 provides opportunities for questions and discussion.

Session 5 provides information on how you can connect with us.

Sli.Do Poll for Session 2

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Session 2: Our Climate Future

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WCRP Climate Research Forum

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Session 2: WCRP's "Our Climate Future" [Helen Cleugh, 20 mins]

Sli.Do Poll for Session 2

Session 3: Climate Science and Information Priorities and Needs – Researcher and End User Perspectives [60 mins]

1. **CORDEX-SEA: Providing Regional Climate Change Information for Enabling Adaptations in Southeast Asia**.

   Fredolin Tangang (Professor, Department of Earth Sciences and Environment, The National University of Malaysia; CORDEX-SEA Coordinator).

2. **Climate Science and Information Priorities and Needs – Researcher and End User Perspectives**.

   Ardhasena Sopaheluwakan (Director, Center for Applied Climate Services, BMKG, Indonesia).

3. **Climate science as decision-support for resilience: transdisciplinary approaches from local to global**.

   Jessica Dator-Bercilla (University of the Philippines in the Visayas and Asia Climate Change Consortium).

4. **From Science to Action: Bridging Researchers and Practitioners.**

   Dr Rodel Lasco (Executive Director, The Oscar M. Lopez Center; Philippines Country Coordinator for ICRAF).

Session 4: Moderated Q&A Session [20 mins]

Sli.Do Poll for Sessions 3 and 4

Session 5: Concluding discussion [Detlef Stammer and Helen Cleugh, 10 mins]

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Sli.Do Poll for Sessions 3 and 4

Session 5: Concluding discussion [Detlef Stammer and Helen Cleugh, 10 mins]

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Session 4: WCRP in Southeast Asia

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5. WORLD CLIMATE RESEARCH PROGRAMME

Concluding discussion

Helen Cleugh, WCRP JSC Vice Chair

You can help shape the future WCRP

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

Engage with us to jointly develop and deliver our research.

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 deliver the science that is important for you.
- Co-design and co-produce climate knowledge and information so that it better targets your needs.

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 any, or all, of WCRP's core activities (i.e. Core Projects, Lighthouse activities etc)

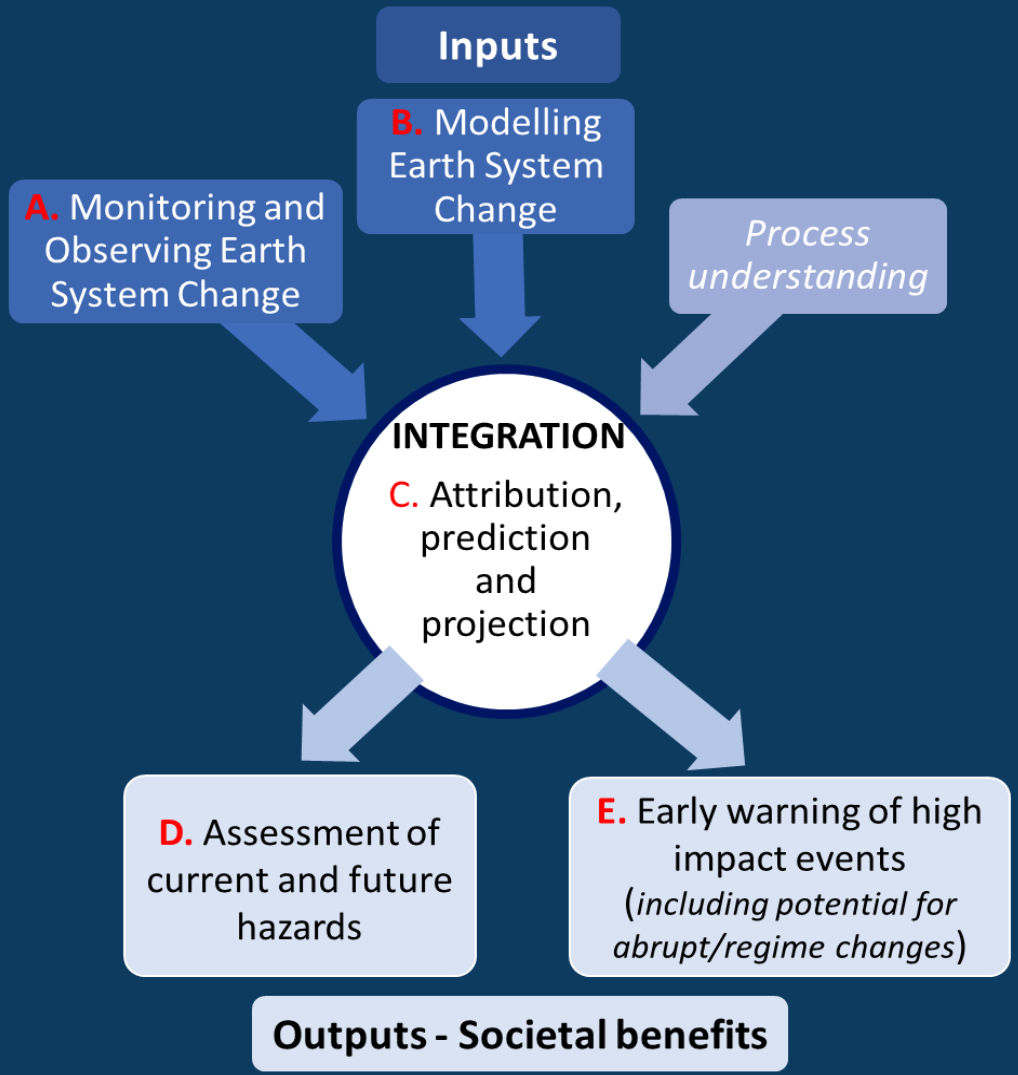
See last slide for information describing how you can connect with us

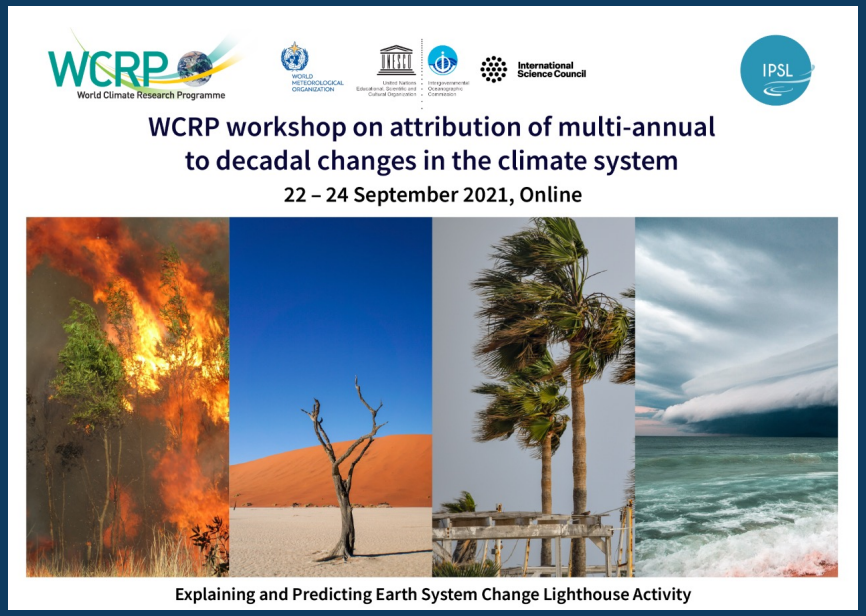
WCRP Lighthouse Activities

Explaining and Predicting Earth System Change

An integrated capability for observing, explaining and providing early warnings and predictions of Earth System Change.

Co-leads: Rowan Sutton and Kirsten Findell





Workshop website:
https://wcrp-epesc.sciencesconf.org

WCRP Lighthouse Activities

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.

Co-leads: Regina Rodrigues and Ted Shepherd

Purpose:

Make climate information more meaningful at local scales

Vision:

New science is about how models, observations and process understanding can be used together within the context of uncertainty

Goal:

A new approach for regional climate risk assessment – one that starts with the decision context

What?

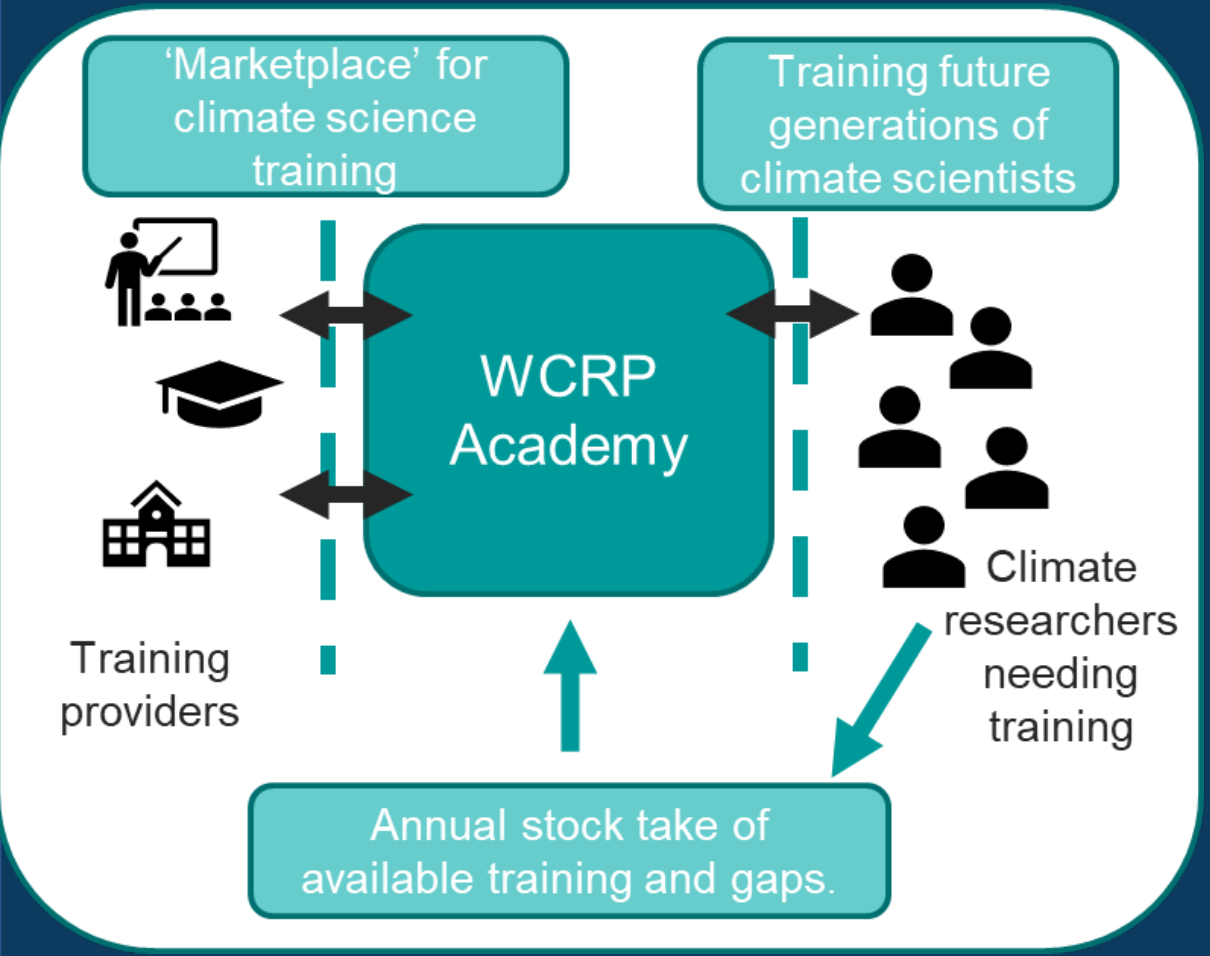
- A Risk Framework that is applicable to various types of region (large-scale, urban etc); to underpin development of climate services.
- A case-study approach via "labs", these are dynamic, exploratory, transdisciplinary environments - more like communities of practice than physical infrastructure – where application of the Framework can be demonstrated.

WCRP Lighthouse Activities

WCRP Academy

To determine the requirements for climate research education and build enabling mechanisms; by working with WCRP core activities and established climate education providers, including universities.

Co-leads: Angela Maharaj and Andrew Charlton-Perez



You can be involved:

- *Take part in first stock take* (coming soon in 2021).
- *Can your organisation fill the training gaps*? Watch for results of stock take (likely Dec 2021).
- *We need expertise in working with philanthropic donors and in setting up non-profit organisations.*

Contact Narelle Van Der Wel: nvanderwel@wmo.int

Today's Forum is just the beginning

We welcome your ideas and feedback on next steps. These could be more virtual Forums like today; as well as further bilateral discussions.

For example, to explore opportunities for:

- Follow-up Forums(s) to focus on specific research themes, from our Core Projects or 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).

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 then 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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Given the current and new initiatives presented in this forum, which of the following WCRP activities would you like to be involved in? Select all that apply.

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Thank you
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Lighthouse Slides

WCRP Lighthouse Activities

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.

Co-leads: Steven Sherwood and Gabi Hegerl

WCRP Lighthouse Activities

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.

Co-leads: Peter Bauer and Christian Jakob

Some Key Aspects

- ***Framework*** to develop capabilities for the global community
- Software that is ***open and freely available, modular and interoperable, and built to agreed-upon standards***

- Envisage developing ***global and regional*** systems under the Framework

- Organised into four components across **Science, Technologies, and User engagement**
- **Cross-cutting** with other WCRP Lighthouse Activities and Core Projects