



WORLD CLIMATE RESEARCH PROGRAMME

Connecting climate science and society

Workshop on Observing the Coastal and Marginal Seas in the Western Indian
Ocean

Maputo, 07-09 June 2022

Hindumathi Palanisamy, WCRP Secretariat




International
Science Council



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

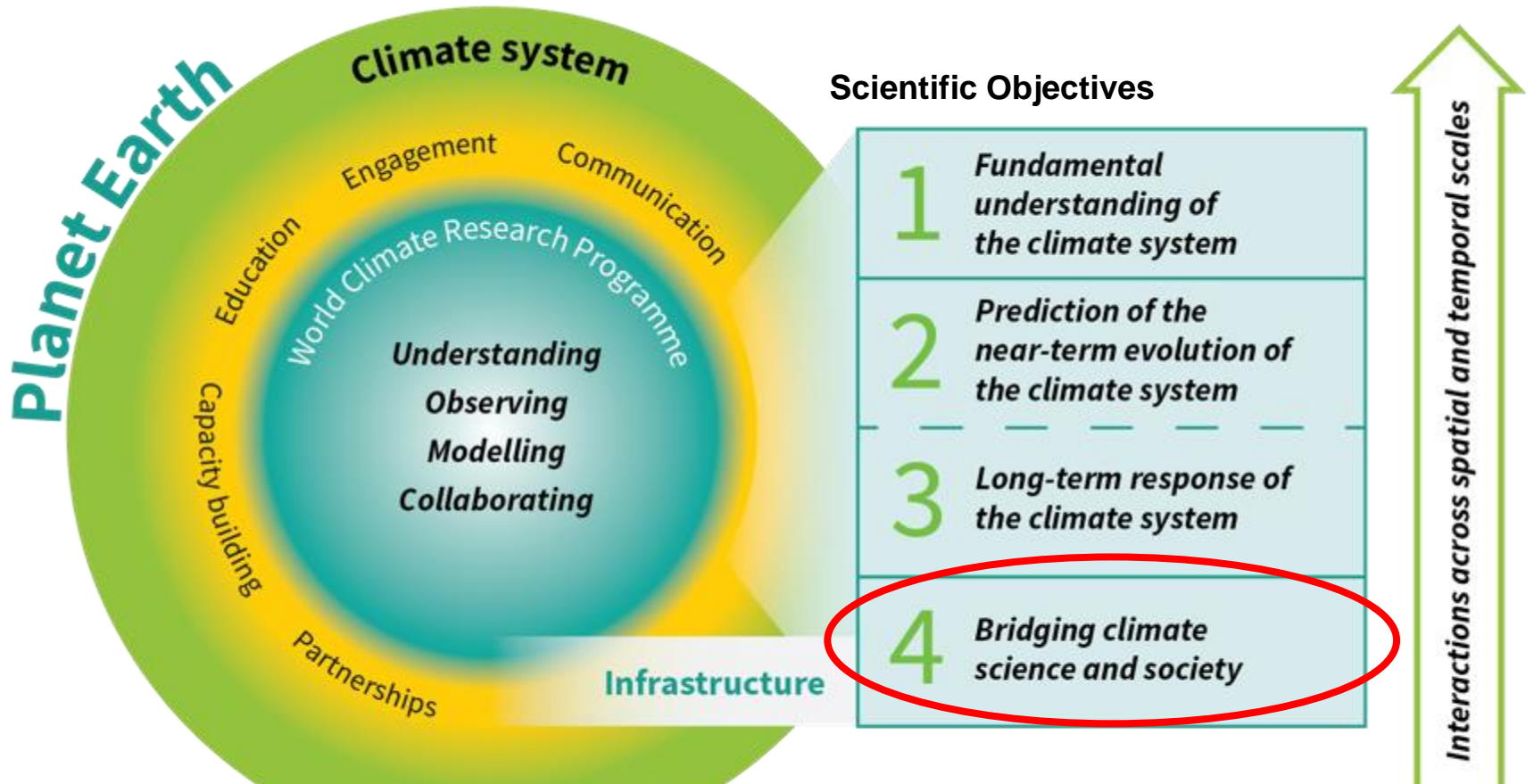
In the past, WCRP pioneered international climate research advancing our understanding of the climate system and how it is being affected by humans.

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.



Overview of the WCRP Strategic Plan



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

Implementing the Strategy - 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*

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*



Explaining and
Predicting Earth
System Change

My Climate
Risk

Digital Earths

Safe Landing
Climates

WCRP
Academy

WCRP Lighthouse Activities are the major and new scientific approaches, technologies, and institutional frameworks – required to meet society’s need for robust and actionable climate information

Some WCRP Issues and Questions

Bridging climate science and society:

1. What frameworks are needed to bridge climate science and decision making?
 - *What is the role of a scientist?*
2. What climate science information is critical for decision making and how to ensure that we provide it at the right time, to the right people, and in a way that is useable and useful?
 - *Adaptation planning and Managing climate risk*
3. What is the role of climate services?
 - *Are we clear on what we mean by 'climate services'?*
4. New ideas for capacity building and education
 - *WCRP Academy*
5. Harnessing new technologies to support Climate modelling and observations; Data curation and sharing (FAIR principles); etc ...
 - *Digital Earths Lighthouse*
 - *Earth System Modelling and Observations (new Core Project)*

Findable, Accessible, Interoperable, and Reusable

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.
- 8 Regional Hubs currently being established: www.wcrp-climate.org/mcr-hubs

Structure



Network of regional hubs



Grow network of *regional hubs* based on and driven by existing institutions who share values with MCR

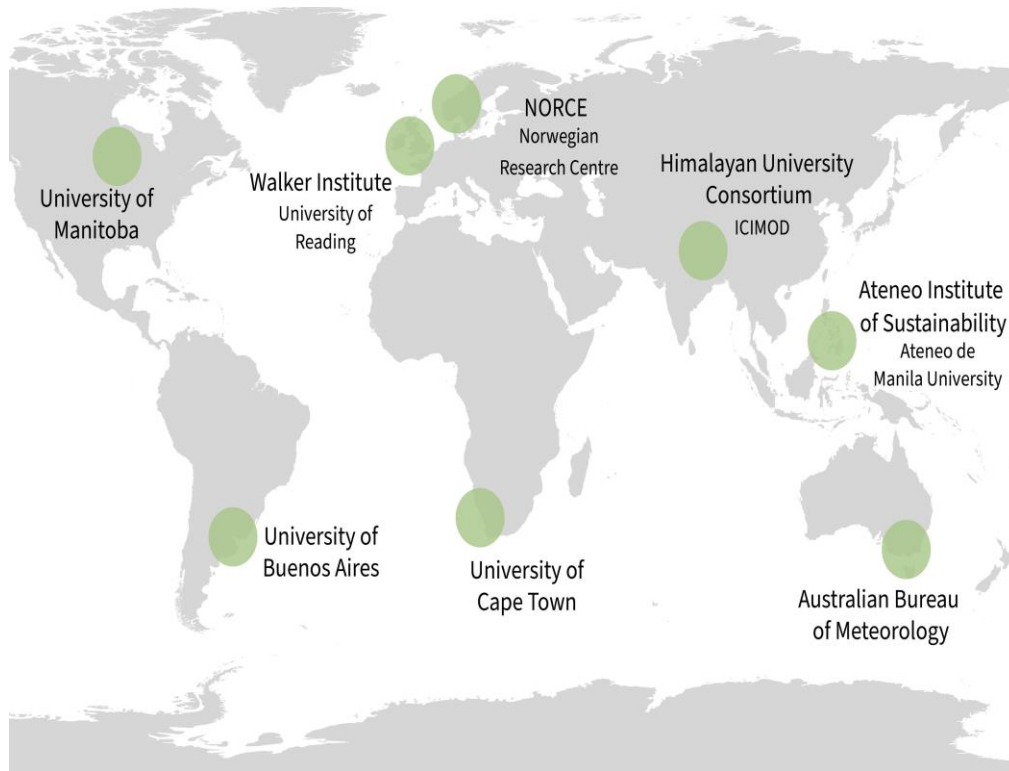
The *regional hubs* should support and connect local labs and would be represented on the MCR science team, providing the connection to the rest of the WCRP

Connections to the *regional hubs* would be nurtured through a variety of mechanisms, including training, to develop trust and build long-term, equitable partnerships

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.

Network of regional hubs



Australian Bureau of Meteorology (Melbourne, Australia)	Sugata Narsey
Ateneo de Manila University (Manila, Philippines)	C. Kendra Gotangco Gonzales
Himalayan University Consortium (Kathmandu, Nepal)	Chi Huyen Truong (Shachi)
Climate Futures, NORCE (Bergen, Norway)	Erik Kolstad
University of Buenos Aires (Buenos Aires, Argentina)	Anna Sörensson
University of Cape Town (Cape Town, South Africa)	Chris Jack
University of Manitoba (Winnipeg, Canada)	Julienne Stroeve Jennifer Lukovich
Walker Institute, University of Reading (Reading, UK)	Ros Cornforth

Slide courtesy: Regina & Ted, presented at My Climate Risk General Assembly, June 2022

Questions



What activities can we expect from the hubs?

- ✓ The regional hubs are conceived as a locally-based alternative to the traditional WCRP structure of panels and high-level working groups.
- ✓ They are expected to help catalyse a variety of activities following the spirit of My Climate Risk, such as webinars, workshops, training schools, etc.
- ✓ They are also expected to share their experiences through web pages, contribute to newsletters, and participate in the My Climate Risk annual General Assemblies.
- ✓ Importantly, the hubs are not expected to coordinate all MCR-relevant activity within their region. Rather, they are available as a potential contact point, and source of support, for those who need it.

Questions



Why were these institutions chosen?

- ✓ The aim is to ensure global representation, and a balance between Global North and Global South.
- ✓ **Several of the hubs arose from the WCRP Climate Research Forums**, which exposed the wider climate science community in a particular region to the suite of WCRP activities, including My Climate Risk.
- ✓ Others arose from direct inquiry or from discussions as the MCR leadership team explored potential partnerships during the initial phase of the activity, where we identified groups that already shared the spirit of My Climate Risk.
- ✓ *More hubs should be added in parts of the world where the international expertise and coordination that WCRP can provide is helpful for building and empowering the local climate science community interested in climate risk at the decision scale.*

Questions

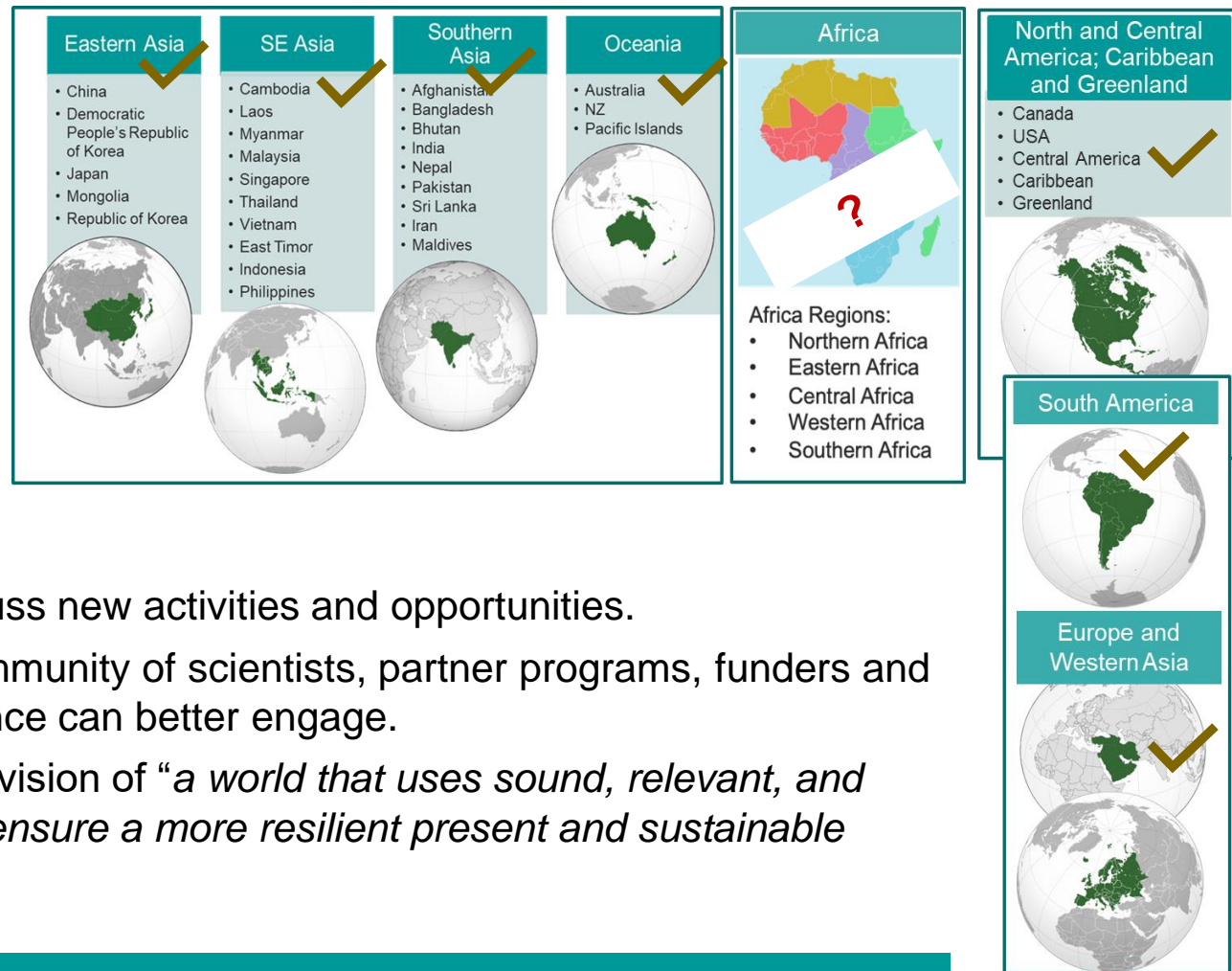


Can anyone propose a new hub?

- ✓ The typical regional hub should be a small group of researchers, albeit working within a larger institution (normally a university), and to be actively engaged in capacity building so that we can help train the next generation of scientists working in this space.
- ✓ There has to be a strong pull in both directions, i.e., the regional hub has to need My Climate Risk. A conscious decision was made during the initial scoping of My Climate Risk not to reach into the domain of climate services, which already has many well-established bodies operating in this space.
- ✓ The goal is rather to help build the scientific foundation for climate services in places where there is a need for this, particularly in the Global South.

WCRP Climate Research Forum

Regionally-based Climate Research Forums



WCRP-hosted Forums to:

- Exchange ideas and discuss new activities and opportunities.
- Explore ways that our community of scientists, partner programs, funders and end-users of climate science can better engage.
- Contribute to building our vision of “*a world that uses sound, relevant, and timely climate science to ensure a more resilient present and sustainable future for humankind*”.

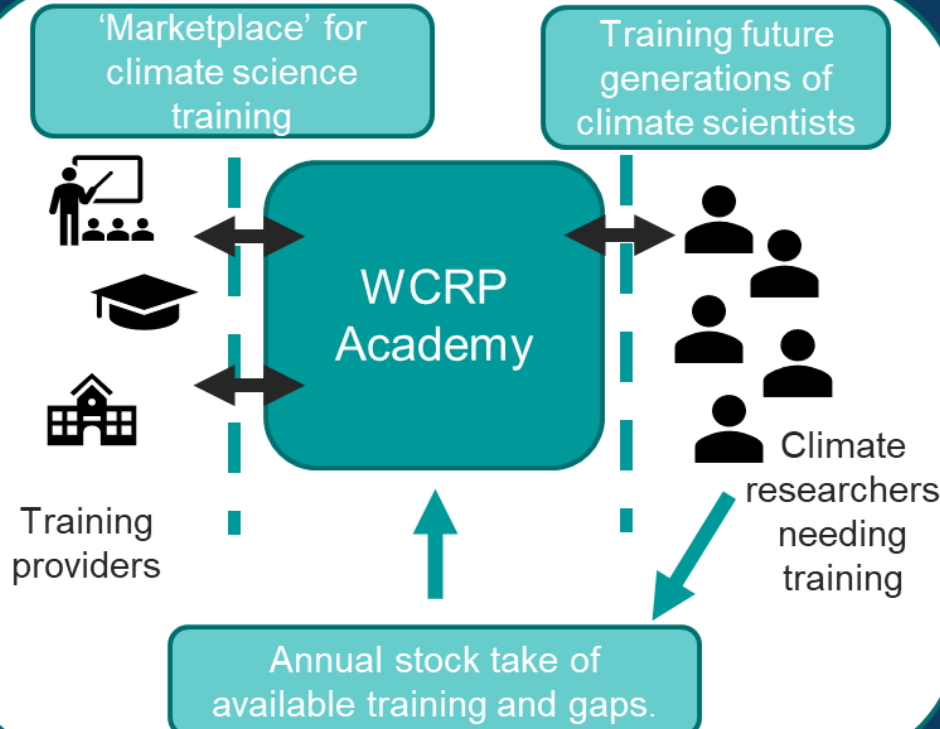
<https://www.wcrp-climate.org/climate-research-forums>

WCRP Lighthouse Activities

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.

Co-leads: Angela Maharaj and Chris Lennard



No one institution can provide the complete training that modern climate scientists require.

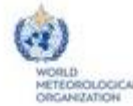
Climate science training could be made more useful if designed with the impact of climate variability and change on society in mind.

Barriers to access to training are primarily geographical and financial not a lack of prior learning or desire for training.

Delivery of climate science training needs governmental, institutional and philanthropic grants and paid for training.

Training at the scale and quality required for the next generation of climate scientists will require delivery both online and in-person.

WCRP Structure



International
Science Council



Joint Scientific Committee (JSC)

WCRP Secretariat

Lighthouse Activities

International Offices

Core Projects

- 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 Society (RiFS)*

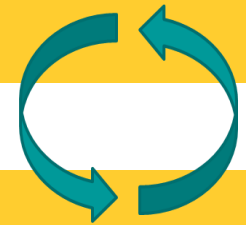
Ongoing Activities and Fora

- 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

WCRP New Core Projects

Earth System Modelling and Observations [ESMO] (new)

- Science and technologies for modelling, observations and model – data fusion.
- Unite and strengthen the work of our Working Groups on:
 - Coupled Modelling (WGCM) incl. CMIP (CMIP & Infrastructure Panels)
 - Numerical Experimentation (WGNE)
 - Sub-seasonal to Interdecadal Prediction (WGSIP)
- Replaces WCRP Modelling and Data Advisory Councils (WMAC and WDAC)



Regional Information for Society [Rifs] (new)

- Science and capability needed for providing societally-relevant climate information for regions.
- Unite, strengthen and expand the work of:
 - CORDEX (science and applications of regional climate downscaling)
 - Former Working Group on Regional Climate (WGRC)



WCRP Open Science Conference 2023

Advancing climate science for a sustainable future

SAVE THE DATE

23-27 October 2023

Kigali Convention Centre
Kigali - Rwanda

