

The scope of WCRP?

Regional information **for** Society (RIfS)

(its about positioning WCRP research in the bigger picture)

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

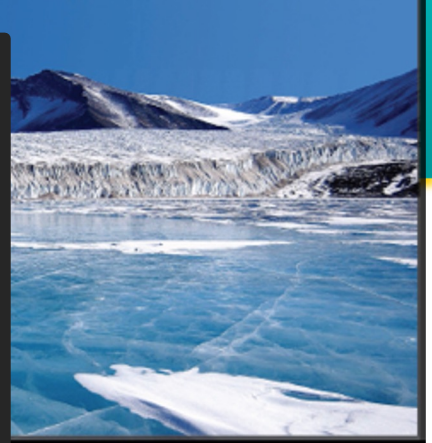
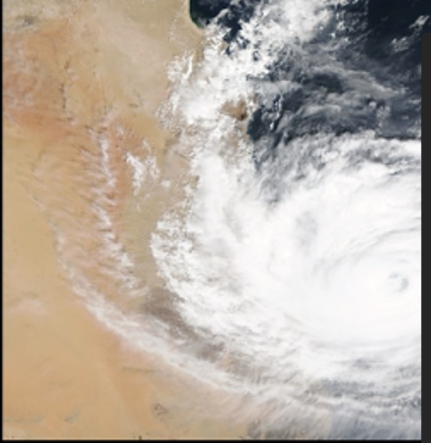
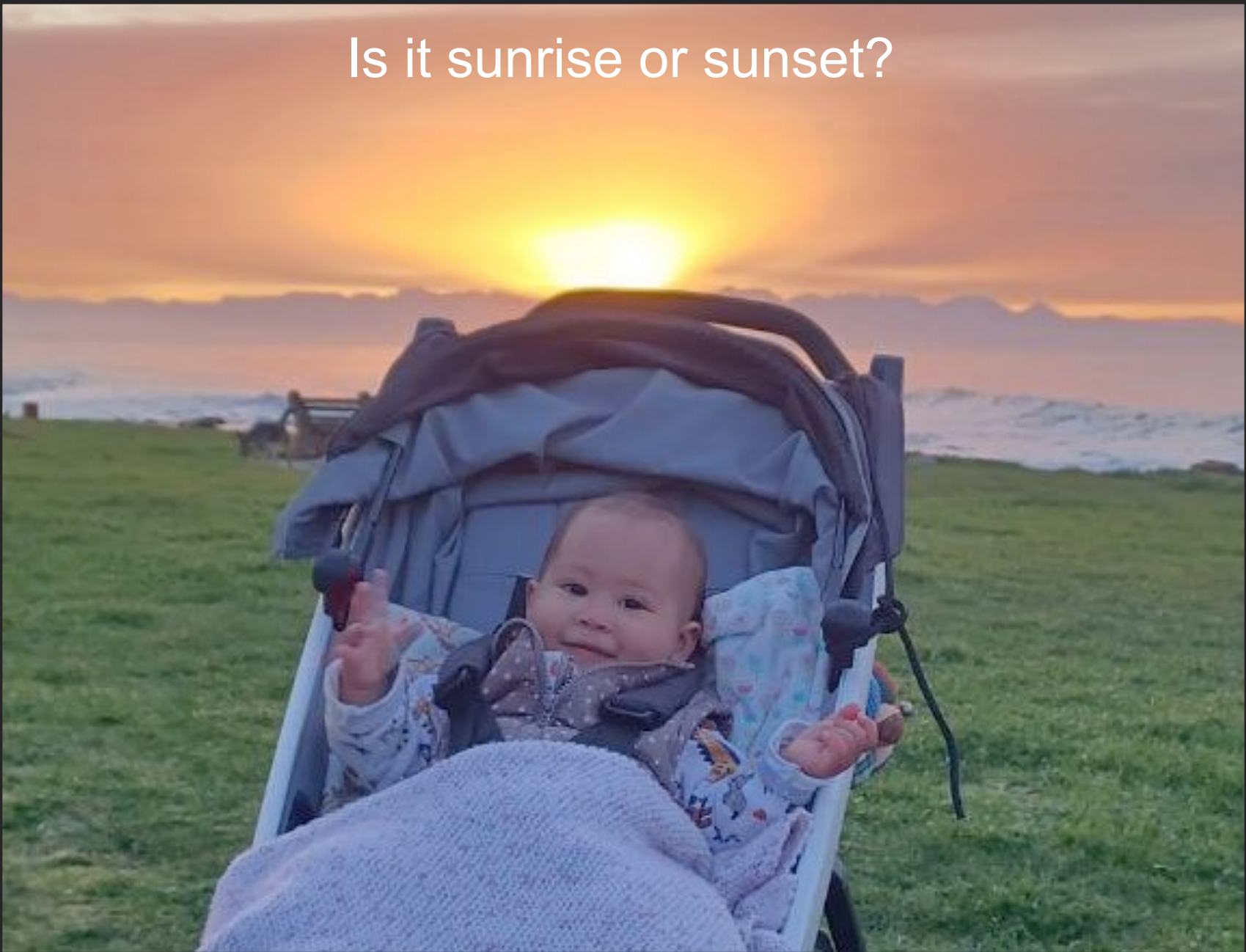
https://www.wcrp-climate.org/images/core-projects/RIfs/RIfS_Science_and_Implementation_Plan.pdf



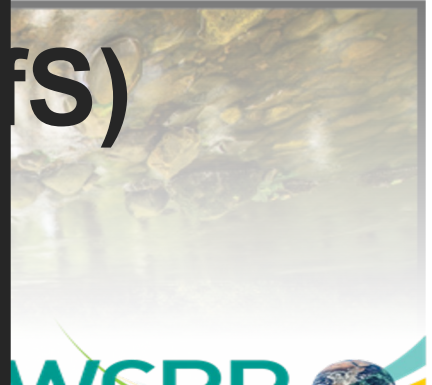
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Is it sunrise or sunset?



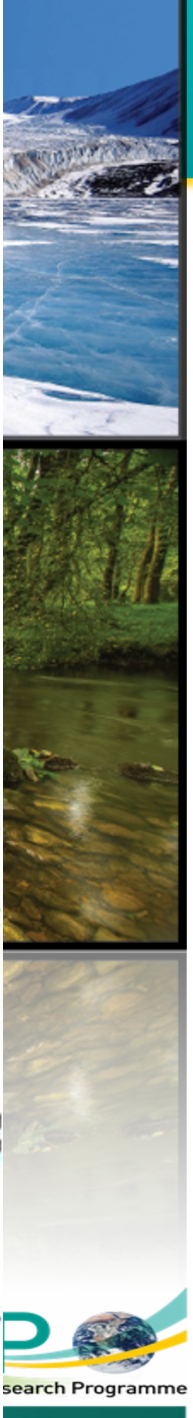
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<https://www.wcrp-climate.org>
https://www.wcrp-climate.org/images/core-projects/RIfs/RIfS_Science_and_Implementation_Plan.pdf





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What is RfS about?

VISION

To understand, develop, and enhance the effective flow of relevant information among scientists, decision makers and society

MISSION

- Facilitate targeted research on regional climate information [for society]
- Integrated with other WCRP activities and initiatives
- Augmented through external partnerships
- Engaged with the climate services community
- Connected with stakeholder communities
- Enhance the construction, communication, and adoption of climate information by society.

RfS is NOT WCRP's climate service



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The RfS science plan

Three overarching CHALLENGES focused on the regional / decision scale

1. How to optimally identify, understand, and model the relevant climate processes and their interactions which are most critical to manage the socio-ecological risks at the decision scales within regions.
2. How to optimally integrate multiple lines of evidence from observations, understanding of physical climate processes, and data from dynamical and statistical regional and global models to inform society's climate information needs.
3. How to best undertake engagement between stakeholders and the science community in different regional contexts to maximize the information benefit for the stakeholder and ensure that the user context is integrated into the design and execution of relevant climate research.



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Organization of RfS

Structure

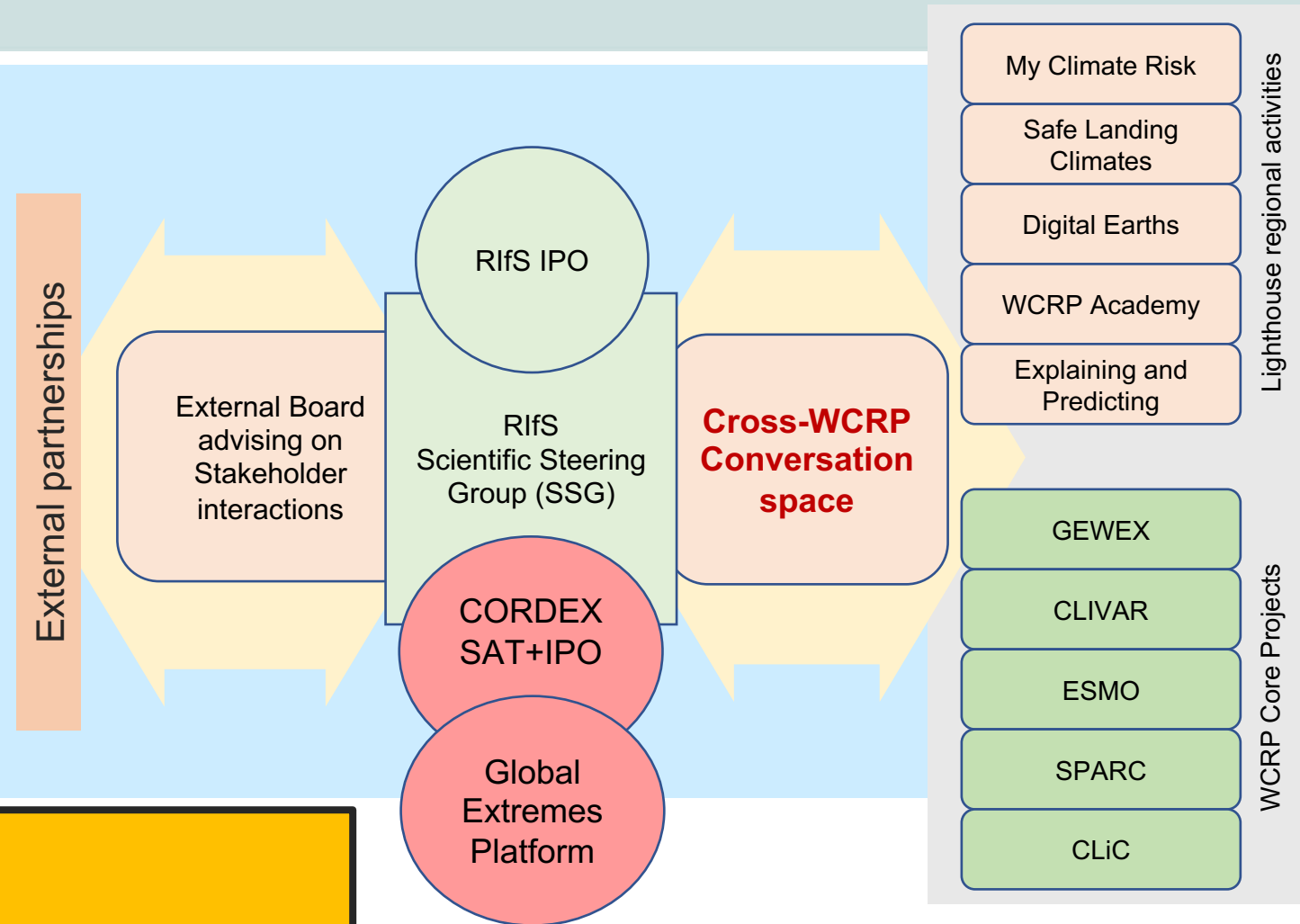
RfS is globally connected, regionally focused

A science plan for research about:

- Being contextually aware, societally engaged
- Generating scale appropriate data
- Translating to relevant information
- Communication to society

RfS seeking partnerships to:

- Support regional actions
- Engage in informing RfS of context
- Collaborate in developing networks
- Contribute to capacity development



IPO: hosted by Ouranos, Montreal, Canada

New director: Dr. Naomi Goldenson, with a PhD in atmospheric science and relevant experience in engaging with society



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Conversations to explore collaboration

Exploring collaborations

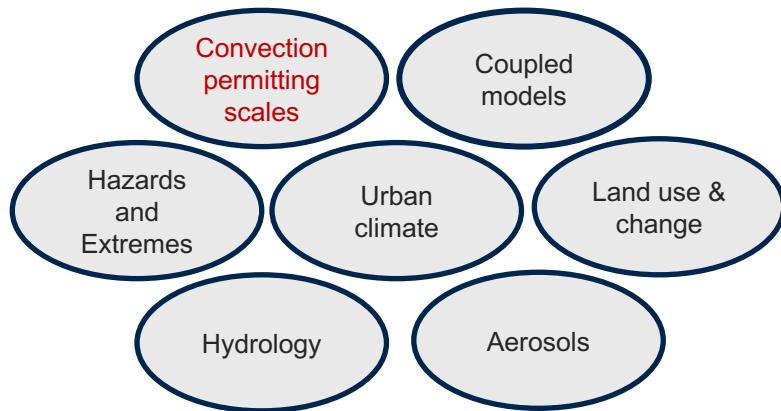
SPARC: “how chemical and physical processes in the atmosphere interact with climate and climate change”

Dynamics and Predictability

Chemistry and Climate

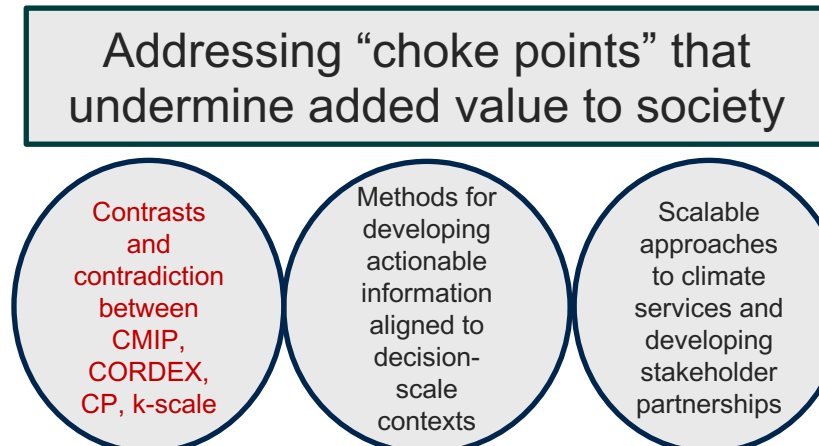
Long-term Records

Conversations between RfS and SPARC to find added value collaborations that are regionally relevant, inform the policy community, and unlock responsible decisions by stakeholders



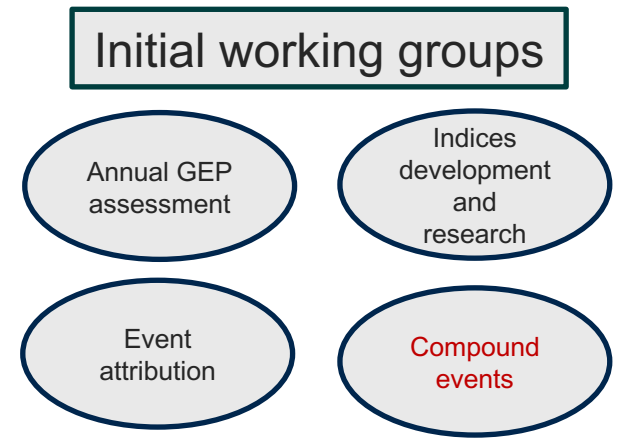
e.g. Flagship pilot studies

CORDEX



Examples

RfS core foci



In development

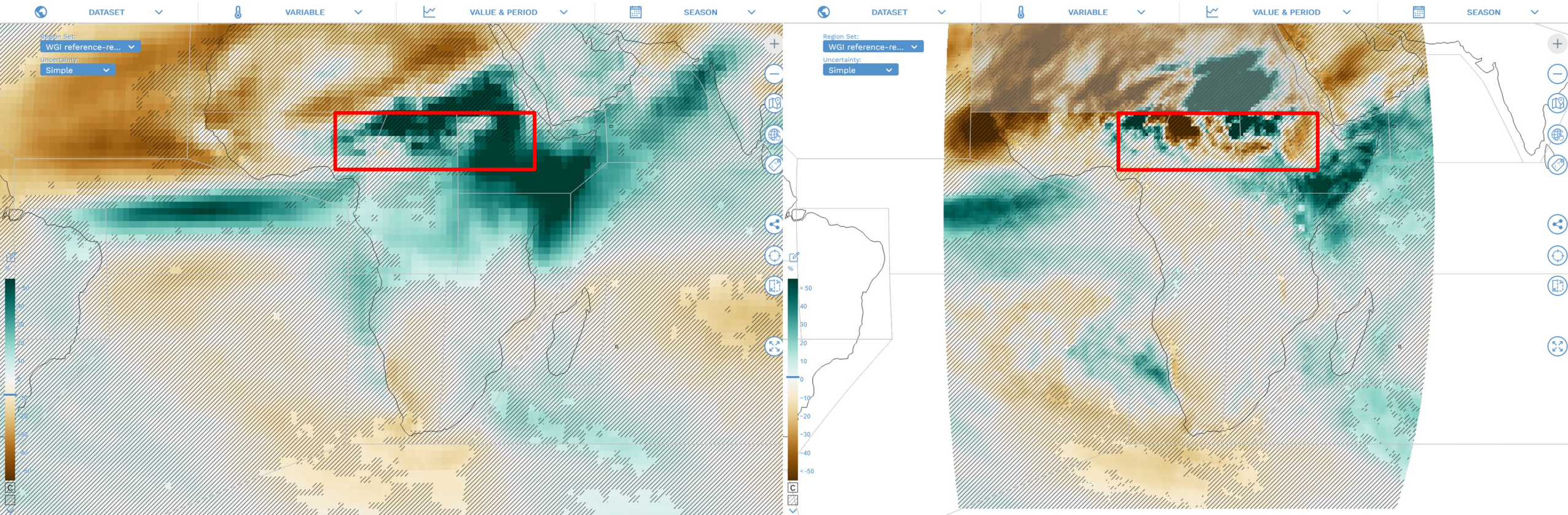
Global Extremes Platform

RfS: “foundations for effective links between climate research and the information needs of society”

Thinking about obvious challenges

A typical output from “Science to society”
This is a problem for decision makers!

Images from the AR6 WG1 Atlas (<https://interactive-atlas.ipcc.ch/>)



CMIP6 - Total precipitation (PR) Change % - Warming 3°C SSP5 8.5 (rel. to 1986-2005) - December to February (33 models)

CMIP6, 33 models, DJF, projected change in precip (%)

CORDEX Africa - Total precipitation (PR) Change % - Warming 3°C RCP 8.5 (rel. to 1986-2005) - December to February (31 models)

CORDEX, 31 models, DJF, projected change in precip (%)

“Context is King” – But there are multiple entry points to assess context

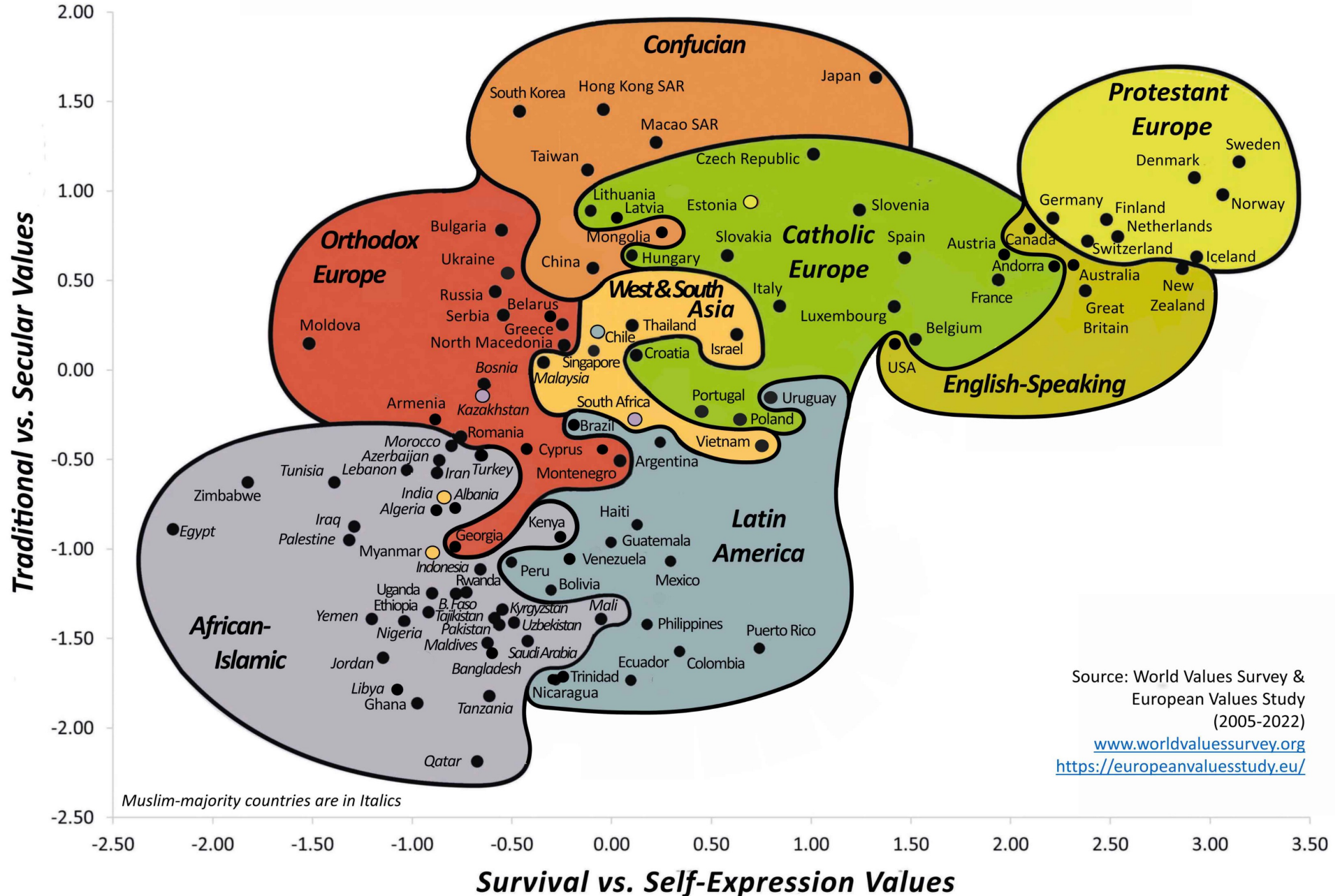
The difference between awareness and comprehension

We can be aware of issues, that is different to comprehending the lived experience

A sample of what the unusual RfS research challenges may include:

- Understanding modalities: client-supplier; co-production, partner relationship
- The (debilitating) power of presumption and assumption result in power relationships, e.g.:
 - between the global and south (resource rich and resource poor)
 - between science “authority” and policy and decision maker communities
 - from one cultural set of values to another
 - even between different communities within science
- The mismatch between the adaptation context and the information on scales in space and time, when thresholds will be reached, derivative attributes, compound events, uncertainty in the impact-inducing tails of the distribution

The Inglehart-Welzel World Cultural Map 2022



The Inglehart-Welzel World Cultural Map 2022

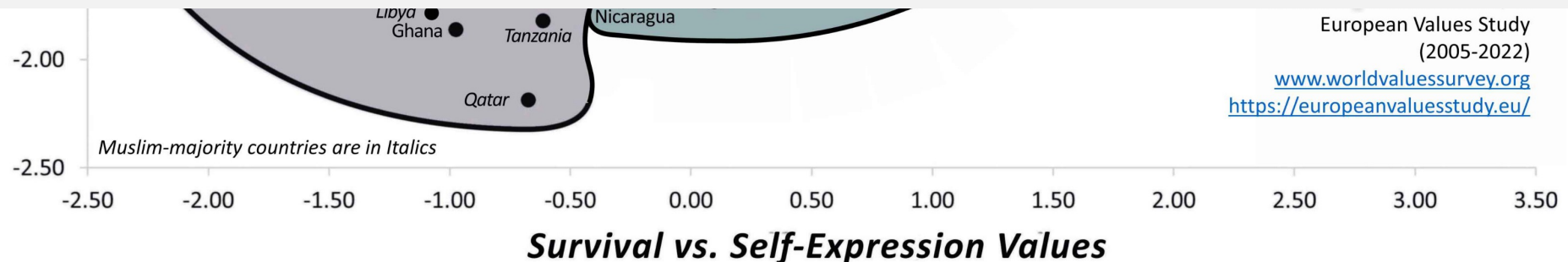
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Confucian

[Anna Steynor: PhD on climate services] *“The specificities of the decision context are not well understood and are often not considered in the development, tailoring and supply of climate services. Yet, the utility of climate services relies on them being suitable for the decision context, so an understanding of the decision context should be central to climate services development.”*

[Jessica Lee: PhD on values in climate science] *“... three important value-related conflicts can arise, even when conditions seem right for values to influence choices in science: [1] conflicts between epistemic and social values; [2] conflicts related to the multiple roles that scientists might occupy in society; and [3] conflicts between personal values and community values. Embracing non-epistemic values as constitutive of the field could have implications for practice and could contribute to the development of a code of ethics for climate scientists”*

How does one “stand in the shoes of another” and comprehend how differences in values changes how we see the context



“Context is King” – But there are multiple entry points to assess context

The difference between awareness and comprehension

We can be aware of issues, but that is different to knowing the lived experience

How RfS articulates the research questions is critical to the outcome:

e.g. the conventional approach of asking the “users”: *tell us what you need*, establishes a modality of supply-chain presumptions of understanding context. Whereas asking *what do you really wish that us scientists would understand about your context* can dramatically alter the approach to research.

e.g. self-awareness and asking *what don't I get about the lived experience of the decision makers context* is humbling, and catalyzes an examination of values.

Global models (ESMs, AOGCMs, AGCMs)

Standard resolution

High resolution

Dynamical downscaling

High resolution RCMs

Convection permitting RCMs

Statistical approaches

Bias adjustment

Perfect prognosis

Weather generators

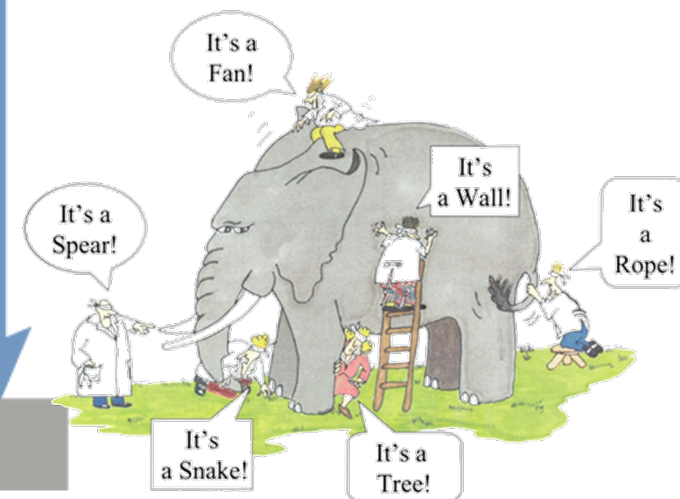
Target variable at target resolution

The Elephant in the room

Problem: How is the decision maker to handle contrasting and conflicting messages from the data subsets they are able to access?

Challenge: there is no systematic endeavor by the science community to undertake this challenge

RfS can contribute



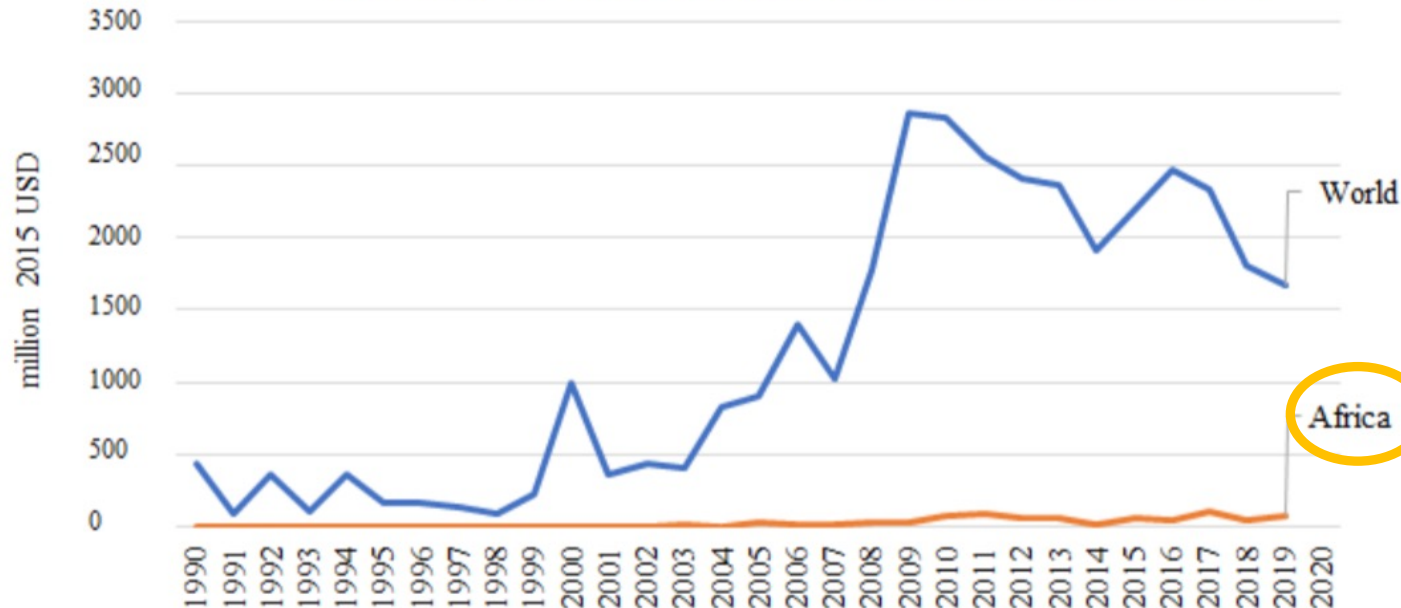
A last word on the time imperative in “the decade of action” [COP26]

We, and RfS, have a challenge on our hands

Very little finance for research on climate change in Africa: **Only 3.8% of global climate change research funding was spent on Africa since 1990.**

Most funding for climate research on Africa goes to EU & US institutions (<1% to African Institutions)

a) Funding for climate research on Africa and on whole world



d) Top 10 country locations of institutions receiving funding for climate change research on Africa, 1990–2020, million 2010 USD

