

Report to the WCRP Joint Scientific Committee

Regional Information for Society (RfS) Core Project

1. Highlights achieved since JSC-43

- Establishment of the Global Extremes Platform Support Unit (SU) hosted by Nanjing University of Information Science and Technology (NUIST) in China.
- RfS co-chairs and Peter J van Oevelen (GEWEX) co-organized a session at AGU Fall meeting [Pathways to Provision of More Robust Regional Information for Society](#): Chicago, IL December 12-16, 2022.
- RfS co-chairs and SSG members proposed multiple sessions for the upcoming WCRP Open Science conference.
- Workshop “Developing an Africa Alliance in Transdisciplinary Climate Research” (31th Oct - 2nd Nov 2022, Pretoria, South Africa) - draft report [here](#) - framed by the RfS science plan. This began a new initiative on developing a bottom-up collaboration with Africa scientists to better connect regional climate science with stakeholders and decision contexts (by Africa, for Africa). This has catalysed new funding for the initiative from the Rockefeller foundation to further develop the initiative in 2023, and is now established as the Africa Climate Alliance for Collaboration on Climate Impacts and Adaptation (ACACIA), which will be hosting a side event at OSC2023 for broader engagement with the community and funders.
- Establishment of the RfS SSG: appointments confirmed in Dec 2022 with their terms starting on 1st January 2023 (see Appendix). The SSG first met virtually on the 6th of March, 2023 ([minutes](#)), with the main focus on discussions to establish relationships and expectations, and assessing the next steps for RfS inception year.
- Establishment of the RfS International Project Office (IPO) hosted by Ouranos in Montreal (Canada), following an open call. The position for the Director of the IPO has been advertised and interviews for the position have taken place. Discussions with the leading candidate are ongoing.
- Workshop “Use of Storylines from Regional Simulation for Climate Hazards and -Stakeholder Engagement” (April 25-27, 2022, online). 125 participants from 17 countries. Each day of the workshop focused on different themes: 1) history and recent innovations, 2) applications, and 3) the complementarity of the storyline approach to more traditional modes of providing climate projections. Workshop report published in Bulletin of the American Meteorological Society 104 E96-98 (<https://journals.ametsoc.org/view/journals/bams/104/1/BAMS-D-22-0224.1.xml>). Full report will be issued as an NCAR report shortly.
- CORDEX progress
 - Publication (August 2022) of CORDEX’ s White Paper on Empirical Statistical Downscaling (ESD) (Gutiérrez et al., [The Future scientific challenges for CORDEX: Empirical Statistical Downscaling](#)). This version of the ESD White Paper focuses on empirical statistical downscaling strategies and identifies specific challenges within ESD.
 - CORDEX Simulation Status: the regional simulations/downscaling of CMIP6 that are planned for each domain have been made available in the [CORDEX Github](#)
 - First Order Draft of the CORDEX-CMIP6 archiving specifications has been developed and is now available for the CORDEX community to comment

- Publication of white paper on CMIP6 GCM selection and Matrix design for EURO-CORDEX (Sobolowski, S. et al., [EURO-CORDEX CMIP6 GCM Selection & Ensemble Design: Best Practices and Recommendations](#))
- CORDEX workshops and training activities
 - Spatial and temporal analysis of climate change variables and indices using CORDEX datasets over Bhutan (19-23 December 2022, Kathmandu, Nepal)
 - CORDEX SEA workshop on Regional Climate Downscaling and Applications (8-9 November 2022, Bangkok, Thailand)
 - Hybrid Workshop on “Consolidating downscaling for the provision of regional climate information to society” (11-13 October 2022, Oslo, Norway)
 - Conference on Regional Climate Modeling and Extreme Events over South America: results from the CORDEX-FPS & Parallel CORDEX CAM/SAM lab-training activity (4-6 September 2022 - Buenos Aires, Argentina)
- GEP progress
 - Hiring of SU support staffs: One full-time staff member is expected to start this summer. Discussions are being held regarding possible support additional science officer(s)
 - GEP Data Portal Development: Initial discussion with potential suppliers for data portal development and web hosting took place in February. NUIST is currently doing need/cost analysis and formal tendering requests for data portal development and web hosting will be posted in due course.
 - Annual update on weather and climate extremes: GEP has provided input to an IPCC-like update (led by Piers Forster) on global indicators on changes in extreme temperature. This lays some basic work for the GEP-led more comprehensive update in the fall. A small group will be working on ToR for a Working Group on annual updates in June and call for membership will be out in early July subject to RfS SSG’s approval. The outcome will feed into the GEP’s Science and implementation plans.
 - Working Group on Attribution: A half-day meeting is planned at the International ad-hoc Detection and Attribution Group meeting at UK’s Met Office in early July to gauge community interest in having a GEP-led Working Group on Attribution. The purpose charges for the workgroup include a) coordination of development and review of event attribution methodologies, b) coordination of optional event attribution activities among major centers for data/knowledge sharing with an aim for capacity building for regions of little climate modeling capacity. The outcome will also feed into the GEP’s Science and implementation plans.

2. Planned science initiatives and major events (next 3 to 5 years)

With establishment of the IPO and SSG ongoing, only tentative plans can be advanced at this stage. The following is an abbreviated list of some actions that are planned and have been articulated by the Co-chairs for consideration/dialogue by the SSG.

- Logistics: Once the IPO has been fully implemented a listserve and web-site will be developed to act as a conduit for RfS information and dissemination and will link to and supplement GEP and CORDEX actions in these realms.
- Events
 - CORDEX Conference 2023, 25-29 September 2023, Trieste, Italy

The conference will bring together the international regional climate research community, focusing on high resolution climate information and its applications to vulnerability, impacts and adaptation and the full spectrum of potential end users of regional climate information. It will promote the CORDEX vision to advance and coordinate the science and application of regional climate downscaling through global partnerships.

- CORDEX side events at the WCRP OSC; CORDEX Africa <https://wcrp-osc2023.org/side-event-th07> and CMIP and CORDEX Analysis and evaluation tools <https://wcrp-osc2023.org/side-event-ll04>
- ACACIA writeshop, 26-28 April 2023, Cape Town South Africa.
While not formally endorsed by RfS at this time (such as in the way GEWEX endorses projects, the criteria for RfS endorsement have yet to be developed by the SSG), this is nonetheless a direct outcome of the RfS supported workshop in 2022. The writeshop is developing a workplan for engaging the Africa community, establishing pilot projects, and engaging with funders.
- Planned initiatives subject to further SSG discussion and adoption of responsibilities:
 - Developing key operational documents, including a policy for endorsing regional projects under RfS and working documents for developing collaborations within WCRP and with potential partners external to the WCRP
 - Developing proposals for RfS webinars (potentially in partnership with other core projects and/or Lighthouses.
 - Explore developing a review paper and/or white paper and/or position paper on RfS priorities in the science plan in relation to the state of science and current foci in regions (for example, drawing on statements of critical research issues in the regional chapters in IPCC AR6 WG2 and the research challenges for regional information identified in IPCC AR6 WG1).
 - Face-to-face SSG meeting, likely around September, location yet to be decided.
 - We have invested time investigating appropriate tools to collate and distill information. A useful tool that might be employed within scoping and engagement activities is a Phenomena Identification and Ranking Tables (PIRT) analysis. The PIRT process is a systematic way of gathering information on a specific concept and ranking their importance in order to meet some decision-making objective. It has been widely applied within, for example, nuclear safety, but is gaining traction in other disciplines. Use of PIRT might allow us to prioritize our actions and allow integration across different constituencies.

3. Active or planned collaborations with other Core Projects, Lighthouse Activities etc.

- Strong planned collaboration with My Climate Risk LHA
- RfS co-chairs participation in Core Projects SSG meetings (including SPARC, GEWEX, MCR)
- SCP RfS representative to development of the **Science Plan on WCRP Global Precipitation Experiment** (Lincoln Alves and Stefan Pieter Sobolowski, RfS SSG members also contributed).
- Main CORDEX collaborations
 - Strong linkages with ESMO (CMIP), GEWEX, WGCM
 - Discussions with CORDEX-Africa for potential engagement in a subsequent phase.

3a. Requests for the WCRP Academy to support your training activities?

- Funding will be requested to have a small group of Post Docs and PhD students to travel to the RfS SSG meeting. Our vision is that this can contribute to cohort building and act as regional focal points for ECRs and the next generation of scientists who understand WCRP and RfS. These participants can potentially take leadership roles within WCRP. We envisage requesting support for approximately 6 such individuals and to make the process competitive while seeking to ensure geographic representation.

- We are conscious of the need to offer exposure and/or training to the broader community (especially ECRs) to explore ‘Opportunities and challenges in provision of Regional Climate Information for Society’. We are evaluating two approaches and opportunities: one option could be to schedule a 1 day workshop before the 2024 AMS annual conference 28 January to 1 February 2024 in Baltimore Maryland; an alternative expedient approach could be to cast the net wider through regional equivalents which would lower the costs of attending but increase the leadership and organizational resource requirement. We are currently evaluating capacity and resource requirements to offer such a training workshop based on the RfS science plan (this is, in part, contingent on when the IPO is fully staffed). We will open discussion with the Academy regarding this and other opportunities.
- RfS proposes that regional SSG members participate in the regional training activities of other core projects and/or Lighthouses to a) develop deeper relations, b) explore regional project opportunities for RfS, and c) increase exposure to the RfS science framing for bringing value to society from WCRP activities.
- We hope to participate (if time permits) in WCRP Explaining and Predicting Earth System Change Lighthouse Activity webinar series.

4. Partnerships with projects outside WCRP

- In Africa RfS is in conversation with work packages of the FOCUS-Africa, DELTAS CASCADES, and HEAT projects, exploring how RfS framing of the science challenges complement the work in these projects.
- SCP presented (February 2023) at an International Energy Agency workshop on damage to renewable energy sources that derive from extreme precipitation events as an initial step towards forging collaboration for activities planned with RfS and GPEX.

5. Issues and challenges:

- The IPO has yet to appoint the director, or fill the full staff complement. Our current assessment is that the full capacity of the IPO is unlikely to be realized before the end of 2023. This constrains the scope of possible initiatives that require more capacity than a volunteer SSG is able to commit.
- Developing linkages with the stakeholder communities and climate services would greatly benefit from an engagement event. How to undertake this (especially with the IPO capacity status) with regions in mind is challenging and needs some careful development on how to accomplish this.
- Developing funding opportunities to support developing actions at the regional scale RfS science plan is an important challenge. The OSC2023 is one opportunity to engage potential funders. Beyond the OSC the new SSG will need to consider how to identify a funding strategy. Additionally, co-sponsored actions (such as with GEWEX or MCR) hold potential to better leverage support, and initial conversations have begun on Africa opportunities.

Appendix A: Co-chairs

First name	Last name	Country of residence	Organization / Affiliation
Sara C	Pryor	USA	Cornell University
Bruce	Hewitson	South Africa	University of Cape Town
Silvina	Solman	Argentina	University of Buenos Aires

Appendix B: Membership of the SSG:

First name	Last name	Country of residence	Organization / Affiliation
Luke J	Harrington	New Zealand	University of Waikato
Claire	Davis-Reddy*	South Africa	South African Environmental Observation Network
Paul	Block	USA	University of Wisconsin-Madison
Kevin	Horsburgh	South Korea	Green Climate Fund
Dragana	Bojovic	Spain	Barcelona Supercomputing Center (BSC)
Patricia Ann	Sanchez	Philippines	University of the Philippines; Climate Change Commission
Morten Andreas Dahl	Larsen	Denmark	Technical University of Denmark
Alessandro	Dosio	Italy	European Commission Joint Research Centre (JRC)
Louis-Philippe	Caron	Canada	Ouranos
Wendy	Sharples	Australia	Australian Bureau of Meteorology

- *Unfortunately since the selection Claire has been unable to take up this position. The RIFs leadership are currently working to propose a replacement.