

45th Session of the WCRP Joint Scientific Committee (JSC)

27-30 May 2024

Report to the WCRP Joint Scientific Committee

RIFS — Regional Information for Society

1. Highlights for Joint Scientific Committee (including high-level publications, new achievements/products, and capacity building activities – in particular anything you feel should go into a WCRP annual achievement report or brochure)

A separate report for CORDEX was submitted, and the GEP reporting is included here together with the RIFS report.

- The RIFS IPO hired its first director (Naomi Goldenson) who started in late September of 2023. In February a second staff person joined her (Anne Debrabandere), and the office is still hiring for two more positions.
 - We have launched an initial version of the RIFS website: <https://www.wcrp-rifs.org>
- The RIFS SSG had its first in-person meeting in early October 2023 at the Barcelona Supercomputing Center, with online participants as well. A report is available for your approval.
- RIFS hosted an expert meeting, with support from the Green Climate Fund and hosted at the European Commission: *Robustness of Climate Change Information for Decisions* in April 2024. There were ~60 people in-person in Brussels with another 30-40 online, by invitation. The workshop programme is available [here](#), and a report will be forthcoming, with a goal to have a draft by mid-June.
 - The workshop included participants from a wide range of backgrounds from core climate physicists to organizations that work directly with decision-makers in different sectors, the impacts and adaptation community, and those working on climate services. All of these communities need to be engaged to address the strategic challenge of the lack of consensus for how to deal with non-congruencies across sources of information used to make crucial societal decisions.
 - An Interim Working Group will be defining next steps (see below) for multiple activities on this theme, and building on the momentum of our engaged participants and their networks.
- A running list of conference presentations about RIFS can be found on our website: <https://www.wcrp-rifs.org/activities/presentations-about-rifs/>
- GEP:
 - Hiring of support staff: The WCRP Global Extremes Platform Support Unit (GEP-SU) recruited a coordination officer (Ying Han) and a science officer (Qiaohong Sun) with support from Nanjing University of Information Science & Technology (NUIST), contributing to better operation of GEP-SU.
 - Data website development:
 - The suppliers for data website development and hosting were determined in December 2023 through open tendering, and the contracts were finalized and

- signed between NUIST and the suppliers in early 2024. The initial payments have been made by NUIST in accordance with the contracts.
- A kick-off meeting for data website development was held in January 2024. The data website is currently under construction.
 - GEP plans to host ClimDex and ClimPACT files on this data website initially, and this will expand to other relevant dataset.
 - GEP is developing a unified comprehensive dataset for real-time monitoring of extreme precipitation changes.
- Working Group on Event Attribution:
 - The idea of forming an Event Attribution Working Group was introduced at the annual meeting of the International ad hoc Detection and Attribution Group (IDAG) in July 2023.
 - A concept note for the Working Group (see Appendix) was drafted by Megan Kirchmeier-Young, Mark McCarthy, Peter Stott and Xuebin Zhang.
 - Peter Stott gave a presentation about the Working Group to the IDAG community in February 2024.
 - A tiger team of volunteers has been involved to produce a draft terms of reference since March 2024.
- Seminar and workshop:
 - GEP held an Extreme Weather and Climate Seminar for Climate Change Adaptation on 3 June 2023 in Nanjing, China. Invited experts from nearly 20 institutions and universities discussed key issues such as the changes in extreme events, disaster risk management, and impacts from extreme events.
 - GEP held a Workshop on Extreme Weather and Climate Change and Attribution on 11 September 2023 in Nanjing, China.

2. Planned science initiatives and major events (over next 1- 5 years)

- RfS will build on the expert meeting on *Robustness of Climate Change Information for Decisions* with an Interim Working Group to define the structures and terms of reference for further activity on this theme. A lot of interest was generated at the workshop with participants expressing commitment to participate in ongoing and potential new efforts identified as priority foci. These include guidance (e.g. assessing information robustness and fitness for purpose, preventing misuse of climate information. etc), recommendations around minimum standards, research actions on reducing non-congruencies in information due to epistemic uncertainties, North-South collaboration, and using and enhancing existing platforms and collaboration channels, the ethical elements of transparency and accountability, and developing concept proposals for pilot actions. We anticipate that several working groups and/or task groups will be created around activities on this topic.
- RfS will be working on a related effort on “Mapping Barriers and Challenges” to developing usable regional climate information. We expect this to be co-designed with heavy involvement from early career researchers and a focus on the Global South and North-South collaborations. We envision that this activity could help inform science priorities and advocacy on the allocation of resources. The RfS IPO is able to commit substantial resources to develop a rigorous survey or other instrument to help synthesize common and un-common challenges across sectors and regions.
- Exemplar Studies: RfS hopes by the end of 2025 to have at least two collaborations going on with existing regional activities of other WCRP projects. We see these as pilot activities to test processes for bringing more societal elements, and co-production efforts, into these activities. Over time we will add more as we build up our capacity, with the hope to create a framework for these collaborations from what we learn.
 - The first effort is to develop a collaboration with the GEWEX RHP: ANDEX
 - The second effort will be in collaboration with CORDEX-Africa and others, and is the subject of a strategic funding request.

- GEP:
 - Development of a GEP portal (different from the data website) with support from RfS
 - Working Group on Event Attribution:
 - A draft terms of reference will be produced by a tiger team of volunteers for discussion at the IDAG/IMSC meeting in June 2024.
 - Membership will be selected from the community through an open call for self-nomination.
 - An in-person kick-off meeting is planned to be held in late 2024 in Nanjing, China, which will include scientific talks and closed-door sessions. The meeting will finalize the terms of reference and decide a working plan for the following years. GEP will seek funding from NUIST for the meeting.
 - Working Group on Assessments of Extreme Events:
 - An in-person Workshop on Annual WCRP / RfS / GEP Extremes Updates: “Annual Updates on Regional Extremes for Society” is proposed for early 2025 in Switzerland (WMO or ETH Zurich) to gather international experts from WCRP/IPCC/WMO to contribute to assessments on attributable extreme events. It is hoped that the workshop will be funded by WCRP and ETH Zurich.

3. Planned Products, high-level assessments or other key outputs/publications

- Several journal articles or white papers are in conception or being drafted: a general introduction to RfS, an update on the “ethical-epistemic elephant” of regional climate information, and another on ethics and values in climate services.
- RfS will be producing a report from our expert meeting on *Robustness of Climate Change Information for Decisions*. To try to inform other efforts we also will work on a published meeting summary (e.g. in EOS) as well as exploring opportunities for an op-ed to draw attention to the need for more research activity on this theme.
- Related to the robust information theme, RfS is partnering with GCF on a wiki that collates resources about the processes and frameworks for developing actionable climate information appropriate for those applying for adaptation funding
- The “mapping barriers and challenges” group will produce a report to inform conversations within WCRP about new initiatives.
- Please see the CORDEX report for a list of other outputs.
- GEP:
 - As a core work for GEP, a public-facing extremes data website, which aims at delivering global extreme weather and climate data for regional and global analysis, will be released to the public. It will offer global extreme indices data products derived from station observations, reanalysis products, and model data. The extreme indices provided will encompass ETCCDI indices (Expert Team on Climate Change Detection and Indices), ET-SIC indices (Expert Team on Sector-Specific Climate Indices), and additional indices addressing drought or compound events. The website will provide the capability of data downloading, and also some simple analysis.
 - Review papers and guidance document on event attribution.
 - Annual updates and assessments of weather and climate extremes.

4. Linkages with other Core Projects, Lighthouse Activities, Academy etc.

- For the expert meeting on Robust Climate Information, RfS invited each Core Project and LHA to send a representative so that we’d have clear lines of communication for potential collaborations. A key activity outcome of the meeting is to develop further collaboration and communication channels..

- RfS is in the process of defining a collaboration with the GEWEX RHP: ANDEX as a pilot for exemplar studies working with existing regional projects. Several people from RfS are attending the ANDEX annual meeting to work on developing this further (Silvina Solman, Paul Block).
- At EGU in April 2024, RfS+CORDEX and CMIP held a townhall together that was well-attended: “Information for Society: from CMIP to decision-makers”. We also did a “Splinter meeting” for CORDEX and RfS attendees to discuss collaboration, open to other WCRP leadership. Both events generated valuable discussions with potential for further actions.
- RfS leadership (Pryor and Alves) have been very active within the new WCRP lighthouse - Global Precipitation Experiment and specifically ensuring that goals common to RfS and GPEX are emphasized and that synergies are fully realized. Pryor participated in the AMS townhall, meeting with funders and both Alves and Pryor contributed to the forthcoming BAMS article (Zeng X., Alves L., Boucher M., Cherchi A., DeMott C., Dimri A.P., Gettelman A., Hanna E., Horinouchi T., Huang J., Lennard C., Leung R.L., Luo Y., Thamban M., Palanisamy H., Pryor S.C., Saint-Lu M., Sobolowski S.P., Stammer D., Steiner J., Stevens B., Uhlenbrook S., Wehner M., Zuidema P.: Global Precipitation Experiment - A New World Climate Research Programme Lighthouse Activity *Bulletin of the American Meteorological Society* BAMS-D-23-0242)
- RfS and IPO leadership (Hewitson, Solman, Goldenson) have had a number of conversations with GEWEX about activities in Africa in the context of the RfS Exemplar Studies focus, and has led exploring some opportunities with funders.
- In late summer/early fall of 2023, RfS SSG performed a survey of communication ‘best practise’ within WCRP. We include a brief summary in Appendix B of the major findings.
- RfS is very interested in collaborating with the WCRP Academy to develop a peer-mentorship activity, in response to a more thorough needs-assessment, possibly to emerge from the “Mapping Barriers and Challenges” activity. We hope to define this sometime in 2025.
- Although it’s still early days, we’re interested in exploring how to piggy-back additional activities that fit with our strategic themes onto regional activities in existing region-based communities in WCRP: the very active communities around the CORDEX domains, and the MCR hubs primarily but not exclusively.
- GEP will be working closely with LHAs including Explaining and Predicting Earth System Change, My Climate Risk, and Safe Landing Climates and other interested groups.

5. Partnerships with entities outside of WCRP

- The Green Climate Fund was a sponsor of RfS’ expert meeting on Robustness of Climate Change Information for Decisions (via an SSG member who works there). We had the support of the GFCS, but need to follow-up specially to share outcomes, as they ultimately did not send a representative. The European Commission was also a co-sponsor and hosted the event because one of RfS’ SSG members works there, and arranged this.

6. Suggestions, issues or challenges, for example:

- We’d like to see additional Global Fellowships focused-on and hosted-in the global South, that emphasizes capacity-sharing to bring resources and opportunities to EMCRs working on regional studies of direct relevance in their local contexts. RfS strongly endorses the current WCRP call for proposals for a global south fellowship aligned to WCRP science priorities, and sees a strong opportunity for RfS to have a key role to assist this, in a mentorship and capacity sharing role, that brings maximum value for the long term growth of capacity that is of direct relevance to the regional contexts.
- The current communication structures in the WCRP requires the RfS IPO and co-chairs to forward every message judged to be important and relevant to the CORDEX and GEP leadership. This introduces an unnecessary bottleneck on communication, adds to additional volunteer time required from the co-chairs, and increases delays with possibilities of missed communications. We strongly

request that the CORDEX and GEP co-chairs be added directly to the email lists that are used for communication with project chairs. We see this as reducing an unnecessary communications hurdle. This does not challenge the organizational structure but instead adds more horizontal communications that would help us to integrate our efforts better and communicate more transparently about important issues that come up.

- As we move forward we would like to work cooperatively with WCRP leadership to ensure there is clarity about the scope of potential RfS activities. RfS cannot be all things to all people, and thus managing expectations and focusing effort is critical. We see RfS as focusing on the coordination, collaboration, and catalysing new research for improving systems to help make our science more fit-for-purpose for the diversity decision-making contexts and regions. We intend a range of modalities to accomplish this, including, for example, working with existing regional projects, cross-cutting activities around mapping barriers and challenges, and building consensus on better-practices. RfS has to operate within resource constraints and thus has to prioritize and cannot do all of that and also be the organ that makes WCRP science more accessible to every audience. It may well be that there is also a strategic need for more visibility of WCRP's work with the public, or in simplified terms for policy-makers, but other resources will need to be found for these important endeavours. We're open to scaling our activities as resources become available, but the efforts should be on doing a few things well rather than trying to do everything and are concerned that expectations are pragmatic and that the broader WCRP (including the JSC) has a clear understanding of this.
- Initial conversations with some funding agencies have indicated substantial appetite for supporting RfS aligned activities, and especially the foci emerging from the RfS Expert meeting. We request that RfS be included early on in any relevant donor agency conversations that the WCRP leadership and secretariat may initiate with donors, and to be included setting foci and establishing the framing of donor opportunities. This applies especially to developing opportunities for the global south, as we propose that RfS has one of the strongest mandates for the interests of the global south through the dominance of global south in addressing regional climate issues.
- In light of the recent experiences with developing WCRP branding and logo, we suggest that in the interests of transparency the WCRP leadership and JSC consult with all groups on developing a policy around copyright commitments and implications, limits, constraints and freedom to adapt and develop materials within core projects and lighthouses, and any approval processes that may be required.

Appendix A

Concept note for Event Attribution Working Group under the Global Extremes Platform Megan Kirchmeier-Young, Mark McCarthy, Peter Stott, Xuebin Zhang

Event attribution is the process of determining how anthropogenic influence on the climate has changed the likelihood or magnitude of an extreme weather event. There is an increasing demand for event attribution information, including operationally (supporting technical infrastructure and capability to provide results shortly after an event), in the context of loss and damage, and to support international activities monitoring the state of the global climate and impacts of climate change. Although many operational event attribution systems exist, with more in development, there is a wide range in the structure of these systems and in the scale and type of information they provide. There is also a range of scientific and technical challenges in the application of attribution to many types of extreme weather.

To overcome a bias in event attribution studies towards the Global North and ensure a better representativeness of event attribution studies, there is a need to increase event attribution capacity in the Global South and other underrepresented regions. There is also growing interest from meteorology centres in providing attribution information for regional and local extreme events. While there is already considerable experience in the delivery of event attribution assessments for some event types and some regions, there are growing requirements to explore a wider range of event types, impacts, and regions. In light of these developments, clear expert guidance by the climate research community is needed for the implementation and interpretation of event attribution. For event attribution to successfully meet the growing needs being placed upon it, there is a requirement for internationally recognised expert guidance based on an inclusive and collaborative approach, to ensure that the many considerations and sensitivities involved are not overlooked.

The World Climate Research Program (WCRP) has the mandate to coordinate and facilitate international climate research to develop, share, and apply climate knowledge that contributes to societal well-being. Societal demands for event attribution, and the potential for rapid growth in this capability, make it important for WCRP to establish a Working Group on Event Attribution. Although the full scope will be determined by community consultation, this Working Group will have a mandate to lead strategic discussion within the community on the direction of event attribution research, to review existing literature and practices, and to develop technical guidance on the methods and interpretation of event attribution. The goal is to provide the assessment and guidance needed to ensure event attribution information, particularly in an operational context, is clear, robust, and consistent.

Expert guidance will focus on event attribution methods and on how to properly interpret event attribution results. Interpretation includes understanding uncertainties and considering the results in the context of the data, scales, and methods used. With most studies focusing on a single, specific event, clarity is needed on if and how event attribution results can be generalized across events and regions. Additionally, the event attribution community would benefit from a focus for the mutual sharing of data and methods, thereby helping to facilitate the advancement of scientific research needed to develop further capabilities in the future.

The Working Group would be able to undertake a stocktake of the current methods, data, and capabilities. Even outside the operational context, there is a wide range of event attribution approaches in the literature. This process would identify gaps and encourage additional research. In addition, clear methodological guidance may ease the application of event attribution to new and more complex variables and their impacts.

Membership of the Working Group will be selected from the community through an open call for self-nomination and will seek a suitably diverse representation. The terms of references of the Working Group will

be developed in consultation with the community through a two-step process: drafted through discussions with community volunteers and then refined and finalized by the membership of the Working Group.

**Appendix B Executive summary of our survey of Core project and LHA leadership.
For more details, please contact Sara C Pryor, Cornell University & Louis-Phillipe Caron (Ouranos)
Presented at Fall 2023 RIFS SSG meeting, and updated: 30 September 2023**

The survey asked questions about 1. external communication, 2. project management, and 3. effective engagement with early career researchers. We received 14 responses, including from 3 other Core Projects.

For communication, in general most respondents viewed their website as their most valuable means of disseminating information, followed by newsletters, and webinars. Barely over half, however, responded that they track number of people engaging with the communication media they use. Five track visits to their own website, but it's important to note that not all respondents run their own website, and rely on WCRP to maintain pages about their activity. Webinars are a common activity that can attract anywhere from 40-200 participants, which most intend to continue with varying frequency.

To recruit new participants among early career researchers (ECRs), projects use a mix of open calls, targeted recruitment, and engagement with ECR networks and groups. Responses were split as to whether they designate specific activities for early career researchers. One Core Project ensures every working group has an early-career co-chair. The only means of offering financial support for ECRs was via travel support.

On external funding, about half had sought this on their own, for a whole range of activities. The relevant steering group, or governing panel, meets as often as every other month or as infrequently as twice per year, with most of these meetings being virtual. Most organize workshops, usually via working groups or panels that proceed with only guidance from the steering body.