

To the members of the WCRP Joint Scientific Committee (JSC),

Please find attached the reports of RfS, with CORDEX report following for the 46th Session of the WCRP JSC. For your convenience, we've pulled out some high-level highlights from across these reports on this cover page.

New RfS activities are being refined and formally launched:

1. RfS has an interim working group (IWG), which emerged from the Brussels meeting of April 2024 on Robustness of Climate Change Information for Decisions. The IWG had a planning retreat in December 2024, where they laid out a work plan for the group, with three initial task teams under it. The open calls are being drafted at the time of this writing.
2. RfS and CMIP have launched an open call for a joint Task Team on Responsible Data Use, open through March 21. Spots are specifically reserved for members with CORDEX involvement.
3. A new partnership has been confirmed with the CLARE Project (IDRC + FCDO) to fund personnel (a science officer and two post-doc) and activities in Africa. This 2 year project (420,000USD) aims to strengthened coordination among existing activities on the continent, increase capacity to produce and utilize climate information, synthesis of knowledge across projects, and support and guidance for new emerging actions. See Sections 4 & 7.
4. A call is open until March 31 for an Africa Task Team to steer the work of the above project.
5. The RfS Science and Implementation Plan is undergoing an update to bring it up-to-date, with the aim to share in advance of the May JSC meeting. We plan a larger update for the next version in 2026.

GEP is also launching new activities:

1. GEP has established a Coordinating Group as the governance structure to manage its daily activities.
2. The Event Attribution Working Group had its inaugural meeting Nov 26-29, 2024 in Nanjing, China.
3. An initial version of the Global Extreme Indices Data portal (<http://globalextremeindices.com>), under the auspices of GEP, has been built and can be viewed online.
4. GEP has been contributing to the Indicators of Global Climate Change (IGCC) 2024 on weather and climate extremes, with a focus on extreme temperature and precipitation.
5. GEP is calling for nominations of early career researchers to form a cross-WCRP Contact Group on the subject of extremes, to share information across activities, and provide a leadership development opportunity in developing a project together. The response has been good so far.
6. GEP held an International Workshop on Weather and Climate Extreme Events on November 25, 2024, in Nanjing, China.

CORDEX had a busy year, including:

1. [Report from the EGU Town Hall](#), [SAT-meeting in Santander](#), [BAMS article on the ICRC-CORDEX2023: CORDEX—Advancing High-Resolution Climate Information and Its Use in Society in: Bulletin of the American Meteorological Society Volume 105 Issue 7 \(2024\)](#). CORDEX 15 years Special Issue planning started.
2. Start-up of five Task Forces to address key scientific and technical challenges (<https://cordex.org/strategic-activities/taskforces/>)
3. Endorsed five new Flagship Pilot Studies (<https://cordex.org/strategic-activities/flagship-pilot-studies/endorsed-cordex-flagship-pilote-studies>)
4. A number of domain/FPS workshops/trainings, including joint workshop in Beijing with MAIRS-FE and Future Earth on multi-scale Climate-Air-Water nexus for Sustainable Health, Food and Energy
5. More POCs and enlarged SAT to better cover all domains and impact side
6. New North Africa Team – now five teams; North, East, West, Central and South
7. SAT members and IPO Director members of several SSGs/STGs and Panels
8. A summary of activities during 2024 can also be found [here](#)
9. The CORDEX IPO contract between WMO/WCRP and SMHI ended 20 January but has been extended with a period equivalent of six working months.

46th Session of the WCRP Joint Scientific Committee (JSC)

Date: 12-16 May 2025

Update report for the WCRP Joint Scientific Committee

RIfS

1. High-level publications *(in particular strategic publications/assessments that are direct outcomes of your activity)*

- Goldenson, N., Horsburgh, K., Hewitson, B., et al. (2024): Lessons from the Regional Information for Society (RIfS) Expert Meeting on Robustness of Climate Change Information for Decisions. Abstract GC53H-0446 presented at AGU Fall Meeting, 9-13 Dec.
- The following reports are expected to be available on our website shortly: <https://www.wcrp-rifs.org/activities/reports/>
 - Report of the Expert Meeting on Robustness of Climate Change Information for Decisions
 - SSG Montreal meeting, Sept. 2024 https://www.wcrp-rifs.org/wp-content/uploads/2025/03/RIfS-SSG-Annual-Meeting-Report_Montreal-Sep-2024.pdf
- A comprehensive list of conference presentations about RIfS can be found on our website: <https://www.wcrp-rifs.org/activities/presentations-about-rifs/>
- Additionally, presentations were provided in the last year at the CliC, APARC, and GEWEX SSG meetings.
- RIfS SSG member Lincoln Alves, and several others with RIfS involvement contributed to “Climate extremes and risks: links between climate science and decision-making” for the WCRP Frontiers in Climate special issue.
- Four members of the GEP Event Attribution Working Group — Sarah Perkins-Kirkpatrick, Mark New, Izidine Pinto, and Aurélien Ribes — contributed to “Frontiers in attributing climate extremes and associated impacts” for the WCRP Frontiers in Climate special issue.

2. Capacity Building/Education and Training Highlights

GEP held an International Workshop on Weather and Climate Extreme Events on November 25, 2024, in Nanjing, China. During the workshop, GEP and its Global Extreme Indices data portal were introduced to the public. It attracted over 270 participants, including researchers, teachers, and students.

- Agenda can be found at the GEP website: <https://gep.wcrp-rifs.org/wp-content/uploads/2025/03/Agenda-International-Workshop-on-Weather-and-Climate-Extreme-Events.pdf>
- A video clip can be accessed here: <https://gep.wcrp-rifs.org/wp-content/uploads/2025/03/Clip-International-Workshop-on-Weather-and-Climate-Extreme-Events.mp4>

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

- A new joint task team with CMIP is being formed to address Responsible Data Use. Given the well-established role of CMIP data, to inform decisions at the regional scale, this task team seeks to reduce data misuse by developing recommendations for better means of documenting the limitations of CMIP model outputs for various key applications. As a key intermediary use is in driving the CORDEX simulations, space is particularly reserved for members with CORDEX involvement. The call for members is open until March 21st, 2025 (<https://www.wcrp-rifs.org/get-involved/responsible-data-use/>).
- RIfS is continuing to develop its collaboration with the GEWEX RHP ANDEX, and having conversations about potentially collaborating in Africa as well. We've included hydrology/hydro-climate as an area of expertise in the new Africa Task Team to facilitate future collaborations with GEWEX.
- RIfS is planning the 2025 SSG meeting to align with the Academy SSG meeting in Cape Town (September 2025), also adjacent to the planned Africa workshop with CORDEX Africa that was part of RIfS' 2025 strategic funding request.
- An active member of the GEP Working Group on Event Attribution, Yukiko Imada, concurrently serves in the Working Group III (Assessment of Current and Future Hazards) of Explaining and Predicting Earth System Change (EPESC) Lighthouse Activity. The GEP Working Group on Event Attribution will be working closely with EPESC, and initially, a joint meeting has been proposed between the GEP Working Group and the Working Group III of EPESC.

4. Partnerships with entities outside of WCRP

- A new partnership has been confirmed with the CLARE Project (IDRC + FCDO) to fund personnel (a science officer and two post-doc) and activities in Africa. This 2 year project (420,000USD) aims to strengthened coordination among existing activities on the continent, increased capacity of actors to produce and utilise climate information, synthesis of knowledge across projects, and support and guidance for new emerging actions. Discussions with Wellcome Trust have also taken place and their interest is confirmed. We will continue discussions in the next weeks to confirm their commitment.
- The GCF was also involved in the discussions concerning the organization of the RIfS/CORDEX Africa workshop (Cape Town, Sept. 2025). It is possible that the GCF will co-finance the event, but still to be confirmed. It's also to be confirmed to have support from the UK's WISER project to support some workshop attendees.
- The Nanjing University of Information Science & Technology (NUIST) supports the Support Unit of GEP. NUIST also partnered with and funded the International Workshop on Weather and Climate Extreme Events (Nanjing, November 25, 2024) as well as the inaugural meeting of the GEP Working Group on Event Attribution (Nanjing, November 26-29, 2024). More details about the workshop/meeting can be found in Section 2/6.
- GEP co-organized sessions on event attribution during the 15th International Meeting on Statistical Climatology (Toulouse, June 2024). During the meeting, GEP co-chair Xuebin Zhang held a side meeting on event attribution with IDAG. He presented the main objectives of the GEP Working Group on Event Attribution, gathered additional ideas for the working group, and discussed the future of BAMS articles explaining weather extremes, along with GEP's potential role in curating and synthesizing global event attribution efforts.
- GEP had an initial discussion with some leads of the WMO's State of the Global Climate in September 2024 about its potential for contributing to future State of the Global Climate, sharing common interests in global/near-global extreme indices data, and agreeing to collaborate on indices development and selection, assessment and annual updates, and

attribution of extreme events. Follow-up coordination meetings will be arranged in due course. In March 2025, the GEP Working Group on Event Attribution met with a representative from the State of the Global Climate to explore the possibility of conducting an external review of attribution-related guidelines for the report.

- GEP has been contributing to the activities of Indicators of Global Climate Change (IGCC) focusing on weather and climate extremes. Current contributions include extreme temperature, and future updates will also include extreme precipitation. The purpose of the IGCC effort, grounded in an open data, open science approach, is to make annually updated reliable global climate indicators available in the public domain. Both extreme temperature and extreme precipitation on land regions in 2024 have been the most intense.

5. Future Science Directions for JSC consideration (e.g., new groups, activities)

RIfS plans to start developing a third exemplar study in another part of the world which would commence in 2026, with a continued Global South focus, with one possibility working with indigenous communities in North America.

RIfS will be advancing this year on the previously identified objective of “Mapping Barriers and Challenges” to developing usable regional climate information. We envision that this activity could help inform science priorities and advocacy on the allocation of resources. The RIfS IPO will commit substantial resources to develop a rigorous survey or other instrument to help synthesize common and un-common challenges across sectors and regions.

A major strategic workshop is being organized to take place in Africa as a partnership between RIfS and CORDEX-Africa, with funds from the WCRP 2025 strategic funding request and other partners. The workshop objectives are to outline a long term strategy, and to scope and catalyze new collaborative activities in Africa that foster an integrated community of practice linked with and beneficial for society decision makers. The workshop will be built on the core RIfS/CORDEX network in Africa, and draw in participants from a broad spectrum of communities including physical climate science, climate services, donor agencies, impacts & adaptation research, stakeholders, ethics and values, and policy actors.

Finally, strategic planning at the last annual SSG meeting surfaced some additional priorities to develop, for example to have a targeted activity for early career researchers, and a focus on equity and North–South collaborations (see the Report of the 2nd Annual Hybrid RIfS SSG Meeting, linked above).

GEP Annual Updates Working Group: The main objective of this working group is to produce retrospective scientific syntheses on extreme weather and climate events over the past year, published annually. This synthesis should place events in a long-term historical perspective and in the context of human-induced climate change, with a comprehensive global focus that better encompasses the Global South than existing literature and reports. It will build on IPCC-assessed methodologies and recent scientific literature. Extensive cooperation is expected between this Working Group and the GEP Event Attribution Working Group, other WCRP initiatives, the WMO Expert Team responsible for the State of Global Climate report, and other key organizations active in the field to build synergy.

6. New Activities (e.g., structural changes to your activity, plans for databases and other products not covered in the above)

The Robust Information Interim Working Group launched after the expert meeting April 2024 in Brussels is converting into a regular Working Group, with two initial task teams operating below it. This workplan was developed at a planning retreat just outside Washington, D.C. before the 2024

AGU fall meeting. The calls should be out in March 2025 and the full Working Group and Task Teams should be operative by the end of April 2025.

In addition to the joint Task Team with CMIP (see point 3), a new Africa Task Team is being formed. This Task Team will steer the work funded by FCDO+IDRC CLARE project in Africa. The call for members is open until March 15, 2025. We consider this a trial of a model that could be expanded to other regions of the world with different partnerships.

Early work has begun involving initial co-authors on a paper to explore the gaps, needs, and opportunities for developing climate literacy, recognizing this applies across the web of actors and is not confined to scientists building literacy among stakeholders. This work will provide a foundation for new efforts on climate literacy within the FCDO funded action, and inform the RIfS/CORDEX-Africa joint strategic workshop in Sept 2025.

The GEP Working Group on Event Attribution, established after the approval of the initial 10 membership by RIfS' SSG in August 2024, had its first in-person meeting on November 26–29, 2024. The meeting finalized the group's terms of reference and a work plan to cover the next year, with ideas for longer-term actions.

- The membership is listed here: <https://gep.wcrp-rifs.org/event-attribution/>
- The meeting summary is provided here: https://gep.wcrp-rifs.org/wp-content/uploads/2025/02/Meeting_summary_GEP-WG-Event_Attribution.pdf

The GEP Working Group on Event Attribution is active in surveying the state of extreme event attribution, in discussing approaches for data sharing, and in developing a critical review from operational event attribution perspective. The group is progressing towards its agreed objectives, making progress in developing review papers and a guidance document on event attribution from operational attribution perspective.

To foster communication within WCRP on activities related to weather and climate extremes, GEP will be hosting a Contact Group consisting of early-career scientists with an interest in extremes. The response to the call for nominations for membership has been positive. Members of this group will liaise with other WCRP initiatives and partners to build networks on issues related to weather and climate extremes. The leads of this group will also participate in GEP's planning and management.

7. General *(Highlight any other outcomes etc. that you wish to make the JSC and other WCRP activities aware of (in particular regionally focussed activities we could use in any highlights brochure). Are there particular challenges faced in the last year that the JSC should be aware of?*

- For the new Africa initiative in partnership with the CLARE project (see Section 4 above), we welcome discussion about how to create synergy with other WCRP activities in Africa, including with the WCRP Fellow. This effort is envisioned to be about coordination and creating connections with existing activities, inside and outside of WCRP.
- RIfS is working on bringing our draft Science and Implementation Plan up-to-date with the aim of sharing it in advance of the JSC meeting in May. This update consists of 1) an updated vision and mission statement, 2) additional background/context material, 3) some reorganization, 4) updates to the implementation part in particular to reflect the emerging structure. This will be considered v2 of the April 2022 plan. The RIfS leadership (SSG and leaders of major activities) will bring a process at the next SSG meeting in September 2025 to

review the Science goals and strategic planning for a larger update in 2026, which will be a plan for the subsequent 5 or 10 years (TBD).

- Considering the strategic scientific contributions from the WCRP expected for the AR7 IPCC report, a joint CORDEX-RIfS activity is planned for early 2026 to design collaborative studies that analyse the latest regional-scale results based on the analysis of the coordinated CORDEX and CMIP7 simulations, and bring together diverse communities working on regional information for society.
- GEP has established a Coordinating Group to manage its daily activities. Currently this group consists of GEP co-chairs, the director of GEP-SU, co-chairs of GEP working groups, and a representative from RIfS SSG. This group is responsible for managing GEP activities, proposing new initiatives, facilitating communication within GEP and with RIfS/WCRP, and representing GEP at academic meetings and events.
- The Global Extreme Indices Data portal (<http://globalextremeindices.com>), under the auspices of GEP, has been developed and the initial version is available. The portal aims to deliver global extreme weather and climate indices data for regional and global analysis, offering indices data products derived from station observations, reanalysis products, and model simulations. The activity supports other GEP activities such as annual update of the state of global weather and climate extremes. The website allows users to select a region of their interest and then download data and conduct some simple analyses on the fly.

46th Session of the WCRP Joint Scientific Committee (JSC)

Date: 12-16 May 2025

DEADLINE: 15 Feb 2025

Instructions

Overarching content/goal: To provide an update on progress made during the last year, and to identify issues etc. in advance of the JSC meeting. This will allow more discussion and less reporting at the JSC meeting itself. The outcomes from this report will also feed into a highlights brochure planned for the first quarter of the year. The Secretariat will arrange calls prior to the JSC meeting with JSC liaisons (as appropriate) to discuss the input and any issues to the JSC meeting itself. Please work with the WCRP secretariat responsible for your activity, in the preparation of the report.

Please keep the information as focused as possible and provide links to websites where more details can be accessed.

Update report for the WCRP Joint Scientific Committee

[Rifs - CORDEX]

1. High-level publications (in particular strategic publications/assessments that are direct outcomes of your activity)

- [Report from the EGU Town Hall](#)
- [Report from the SAT-meeting in Santander](#)
- [BAMS article on the ICRC-CORDEX2023: CORDEX—Advancing High-Resolution Climate Information and Its Use in Society in: Bulletin of the American Meteorological Society Volume 105 Issue 7 \(2024\)](#)
- [Book chapter in the annual report of the Superior Council of the Central American countries \(CSUCA in Spanish\). First prize award of the respective call for papers.](#)
- [Cavazos et al. \(with members of CORDEX CAM and SAM\) published “Challenges for climate change adaptation in Latin America and the Caribbean” in Frontiers in Climate as part of 2024 WCRP Concept Papers.](#)
- [Higher-resolution projections needed for small island climates. Nature Climate Change. 14: 668-670; DOI: <https://doi.org/10.1038/s41558-024-02028-9>](#)
- [Convection-permitting climate models offer more certain extreme rainfall projections. npj Climate and Atmospheric Science . 7: 51; DOI: <https://www.nature.com/articles/s41612-024-00600-w>](#)
- [Towards better understanding the urban environment and its interactions with regional climate change-The WCRP CORDEX Flagship Pilot Study URB-RCC.. Urban Climate, 58. 58: 102165; DOI: <https://www.sciencedirect.com/science/article/pii/S2212095524003626?via%3Dihub>](#)
- [Bringing it all together: Science priorities for improved understanding of Earth system change and to support international climate policy.. Earth Syst. Dynam.. 15: 1319–1351; DOI: <https://doi.org/10.5194/esd-15-1319-2024>](#)
- [Regional climate change: consensus, discrepancies, and ways forward.. Frontiers in Climate. 6: 6-11; DOI: <https://www.frontiersin.org/journals/climate/articles/10.3389/fclim.2024.1391634/full>](#)
- [More CORDEX related publications 2024 available \[here\]\(#\)](#)

2. Capacity Building/Education and Training Highlights

- The CARE for SEA megacities project of CORDEX Southeast Asia (CORDEX SEA) held an in person three-day [training workshop on empirical statistical downscaling](#) (ESD) and urban climate downscaling in Kuala Lumpur, Malaysia on 14-16 May 2024.
- Various domain meetings/workshops containing educational elements
- Two workshops in Mozambique and South Asia were postponed to the beginning of 2025 due to political unrest and institutional reorganizations

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

- EGU Town Hall + Zenodo report in collaboration with RfS and CMIP. User cases,
- SAT-member and IPO director representatives in the STG for the CMIP7 I&A Data Request Paper/group
- [Task Forces](#), for instance the TF on Preparation for CORDEX-CMIP7 and the one on Regional Climate Ocean Projections which is in collaboration with CLIVAR.
- A special session at the annual meeting of the Mexican Geophysical Union (RAUGM) was organized by T. Cavazos (SAT member), Sheila Estrada (member of the regional ocean TaskForce) and two other CICESE scientists to initiate the activities of the regional ocean modeling and climate projections TF.
- Polar CORDEX coordinated together with CLiC. Annual meeting in Germany in October
- 26 June [CORDEX Africa strategic meeting/workshop online](#) – collaboration with RfS and now working on the next step
- CORDEX SAT member part of CMIP Core Panel
- CORDEX SAT member part of GEWEX SSG
- CORDEX SAT member part of RfS SSG

4. Partnerships with entities outside of WCRP

- Joint conference with Nanjing University in Suzhou
- Joint workshop with MAIRS-FE, Future Earth in Beijing
- Workshop with BRICS Ideas and indigenous representatives in Xiamen
- [CF Community workshop](#)
- [CARE for SEA Megacities and CORDEX-SEA had a special session at the 4th International Vietnam Conference on Earth and Environmental Sciences \(iVCEES-2024\)](#) in Quy Nhon, Vietnam during 26-28 November 2024

5. Future Science Directions for JSC consideration (e.g., new groups, activities)

- SAT enlarged to better cover all domains and also socio-economic aspects of regional climate

- More Points of Contact (POCs) to better integrate all parts of large domains. Also the new North Africa Team constellation settled and first planning meeting held
- [Five new Task Forces](#)
- Updated version of the Med-CORDEX-CMIP6 related documents published.
- New Flagship Pilot Studies endorsed

6. New Activities (e.g., structural changes to your activity, plans for databases and other products not covered in the above)

- The five Task Forces will set out the direction, plans and strategies for their respective focus area
- [Five new Flagship Pilot Studies](#) endorsed, two of which focusing on Small Islands
- CORDEX 15 years Special Issue ongoing

7. General (Highlight any other outcomes etc. that you wish to make the JSC and other WCRP activities aware of (in particular regionally focussed activities we could use in any highlights brochure). Are there particular challenges faced in the last year that the JSC should be aware of?

- Second workshop held by the FPS: Dynamical downscaling experiments and hydrological modelling for Canada and Mexico took <https://cordex.org/2024/12/18/report-from-the-second-workshop-held-by-the-fps-dynamical-downscaling-experiments-and-hydrological-modelling-for-canada-and-mexico/> place in Villahermosa, Mexico in November.
- During the Pan American Meteorological Conference (CPAM 2024) at the University of São Paulo in Brazil 19-23 August 2024 the Flagship Pilot Study (FPS) **Extreme precipitation events in South-eastern South America** (SESA) had a parallel meeting.
- Session on [Regional Climate; Modelling, Analysis and Impacts](#) at AGU
- At the hybrid SAT-meeting in Santander, Spain, in September we discussed and initiated several ideas on structure and new 'bodies' under CORDEX to better meet and respond to existing and coming scientific and societal challenges. The new structures will even more than before open up for liaising with other WCRP groups and activities.
- In the extended newsletter CORDEX Report 2024 more on CORDEX highlights for 2024 can be found
- It is important to underline the need for continuous interaction between the JSC and all the WCRP leadership members, including the major activities under the CORE projects.
- We also want to underline that RfS includes both CORDEX and GEP which seems not to be reflected in the budget allocation.