

WCRP CORDEX

Coordinated Regional Climate Downscaling Experiment

Report 2023



Scientific highlights

The [white paper on CMIP6 GCM selection and Matrix design for EURO-CORDEX](#) was published during the year. This white paper is meant to help modellers in EURO-CORDEX, and elsewhere, make informed decisions when it comes to selecting GCMs for downscaling from the CMIP6 archive.

An [updated version of the Med-CORDEX-CMIP6 baseline run protocol](#) was also published. This protocol concerns fully-coupled Atm-Land-River-Ocean RCM simulations which is a main focus of Med-CORDEX.

The [CORDEX-CMIP6 Archiving Specifications for dynamical downscaling](#) have been open for comments during 2023 and are now about to be finalized.



25-29 SEPTEMBER 2023 TRIESTE, ITALY

ICRC-CORDEX 2023

The International Conference on Regional Climate-CORDEX 2023

was held in Trieste, Italy and Pune, India and online in September. This was the fifth CORDEX conference and it was very successful and, among others, showed the large variety of scientific topics in the regional climate community and also demonstrated the need and desire to network and discuss. At the [website](#) you can find out more about the conference, see the sessions again, look at the presentations and posters that were presented and much more!

CORDEX at the WCRP OSC

At the WCRP Open Science Conference in Kigali, Rwanda, in October, CORDEX organized two side events. One for **CORDEX Africa** with the aim for climate experts and climate stakeholders to meet, interact and exchange knowhow and experiences. The other one



organized together with CMIP entitled **CMIP and CORDEX Analysis and Evaluation Tools**. It aimed at showcasing some of the available tools for CMIP and CORDEX analysis and evaluation as well as demonstrating their main uses, advantages and limitations. Besides these events an overview of CORDEX and key messages from the ICRC-CORDEX were presented at the OSC Forum. At the CORDEX website you can read more about all this and also find the reports from [the side events](#).



CORDEX publications

To peer reviewed publications during 2023

Peer reviewed publications

CORDEX publications starting from recently published in press and back, by alphabetical order for each year:

- Publications 2024
- Publications 2023
- Publications 2022
- Publications 2021
- Publications 2020
- Publications 2019
- Publications 2018
- Publications 2017
- Publications 2016
- Publications 2015
- Publications 2014
- Publications 2013 and back

Keep submitting your publications

Submit your CORDEX related peer reviewed publication for publication at the CORDEX website. [Use this link](#).

Your submission will then be held for approval by the CORDEX office.

Some CORDEX meetings and collaborations

Silvina Solman, one of the CORDEX co-chairs, attended in person the WCRP JSC 44 in Brussels in May. The interaction with WCRP, the Core projects and Lighthouse Activities is important for the future plans of CORDEX and both the Science Advisory Team (SAT) and the Project Office are attending many meetings and activities to promote such collaborations.

Besides the regular online meetings within CORDEX SAT this year there was also the great opportunity to meet at the ICRC-CORDEX2023. Thus, there were longer hybrid SAT-meetings both before and after the conference and the SAT members were also highly involved in the scientific work during the conference.

The WCRP International Project Offices meet regularly online throughout the year. The CORDEX office, SAT and the rest of the community also have more intense collaborations with some of the WCRP Projects. For instance the CORDEX co-chairs, Silvina Solman and Daniela Jacob and the co-chairs for CMIP, John Dunne and Helen Hewitt, and the two project offices had a virtual meeting in November to ensure close collaboration and engagement between CMIP and CORDEX.



SAT members attending ICRC-CORDEX 2023 in Trieste

A selection of CORDEX domain workshops and events

Even though the main focus during 2023 was on the CORDEX conference and the WCRP Open Science Conference there were still many other activities going on in the domains.

The **7th International Med-CORDEX Workshop** was successfully conducted online on 15-16 of May. The workshop brought together 106 participants from 16 countries, primarily from Europe, North Africa, and the Middle East. Read more about the workshop [here](#).



The EURO-CORDEX Points of Contact met virtually for the **EURO-CORDEX General Assembly** 31 January-2 February to discuss the ongoing activities and future plans.

Several of the CORDEX domains and Flagship Pilot Studies took the chance to have a **side event during the ICRC-CORDEX2023** in September. Since many members from the community were gathered this was a great opportunity to meet and discuss in person.

25-29 SEPTEMBER 2023 TRIESTE, ITALY
ICRC-CORDEX 2023
 International Conference On Regional Climate

The annual **Polar CORDEX meeting** took place in Utrecht, Netherlands on 4-6 October. 25 researchers from Europe, North America and Asia participated in this hybrid meeting. The aim of the meeting was to have scientific exchange of Polar CORDEX and related groups on ongoing research including presentations and discussions. Read more about the meeting [here](#).



CORDEX Central Asia domain hosted a workshop on **Climate Data Analyses and Downscaling** in Samarkand, Uzbekistan in November. This was the first time a workshop was held in this domain. The aim was to contribute to capacity building and promote climate resilience. The workshop contained both talks and seminars that focused on the CMIP and CORDEX datasets, as well as the processing and interpretation of these datasets. Read the [outcomes from the workshop](#).



The "Climatic hazard Assessment to enhance Resilience against climate Extremes for Southeast Asian megacities (**CARE for SEA megacities**)" project is the latest activity under the Southeast Asia Regional Climate Downscaling / Coordinated Regional Climate Downscaling Experiment Southeast Asia (SEACLID / CORDEX-SEA) collaboration. An inception workshop and stakeholder consultation was held in Bangkok, Thailand in November. The full report can be found [here](#).



Summary Report of the CARE for SEA megacities:
 Inception workshop and stakeholder consultation
 The Berkeley Hotel Pratoom, Bangkok, Thailand
 22-24 November 2023

The "Climate hazard Assessment to enhance Resilience against climate Extremes for Southeast Asian megacities (CARE for SEA megacities)" project is the latest activity under the Southeast Asia Regional Climate Downscaling / Coordinated Regional Climate Downscaling Experiment Southeast Asia (SEACLID / CORDEX-SEA) collaboration. Funded by the Asia-Pacific Network for Global Change Research (APN), this three-year project started in October 2020, and aims to generate city-scale climate hazard information for SEA megacities (Bangkok, Hanoi, Jakarta, Kuala Lumpur, and Manila) under multiple SSP scenarios that will be relevant and useful for policy-making to enhance urban resilience in a globally warmer future.

The three-day inception workshop and stakeholder consultation was held in the Berkeley Hotel Pratoom, Bangkok, Thailand from 22-24 November 2023. With support from APN, WCRP-CORDEX and the National Research Council of Thailand, the workshop was hosted by Kasikornrajavidyalaya University (Thailand), with Manila Observatory (Philippines) and Institut Teknologi Sepuluh Nopember (Indonesia) as co-organizers.

The workshop aimed:

1. To launch the "Climate hazard Assessment to enhance Resilience against climate Extremes for Southeast Asian megacities (CARE for SEA megacities)" project;
2. To coordinate and discuss activities on the improved statistical downscaling (SD) and dynamical downscaling activities of CORDEX Southeast Asia and partners, particularly initiatives that will support CARE for SEA megacities;
3. To explore collaboration with other WCRP activities, particularly the city climate risk, lightweight activity;
4. To identify primary climate hazards in the selected SEA megacities through consultation with local policymakers; and
5. To provide a platform for engagement between climate scientists and researchers, and policymakers.

There were 66 in-person and 12 online participants composed of CARE for SEA megacities collaborators and SEACLID/CORDEX SEA members, partner host policymakers and stakeholders.

Workshop on Developing a Strategy

for Future Climate Projections in South Asia The workshop was conducted in person in Dhulikhel, Nepal in December. It brought together providers of climate information, academia, as well as research organizations and provided an opportunity to map the use of future climate projection datasets and understand their needs and priorities with the aim to develop a strategy.



As a follow up of the **CORDEX Africa** side event at WCRP OSC an online meeting was held in December to discuss the outcomes from the event. There were discussions on downscaling of CMIP6 for Africa and data storage and on how to increase collaboration within the CORDEX community, the African teams and how to better engage with stakeholders. The discussions and the work will continue during 2024.



The collaboration between **CORDEX and MAIRS-Future Earth** have been reinitiated after being put on hold for a while due to Covid-19 and restructuring. A planning meeting was conducted in December to discuss the way forward with joint activities.



CORDEX at COP28

At the COP28, IPCC Pavilion event: Physical Science Challenges for AR7 on 2 December, Silvina Solman, one of the co-chair of CORDEX, held an online presentation on behalf of CORDEX Science Advisory Team. The presentation was on *Knowledge gaps and scientific challenges: Focus on regional information*.

You can find the presentations from the event and more information [here](#).



Some highlights from the domain reports 2023

- Central America and South America: CORDEX POCs and Regional focal points of the WCRP from SAM and CAM have coordinated a concept paper with a focus on CAM and SAM to contribute to the series of concept papers planned for the WCRP's OSC 2023.
- North America: Additional variables from CMIP5-forced simulations published.
- East Asia: Sharing of research outcomes on future assessment of change in East Asian climate based on SSP-driven regional climate projections through participation in AOGS and ICRC-CORDEX2023.
- Central Asia: Presentation at COP28 Uzbekistan pavilion on CORDEX Data and Activity.
- Australasia: Four modelling groups are actively completing CORDEX-CMIP6 simulations.
- EURO: CMIP6/Euro-CORDEX simulation protocol finalized.
- South Asia: The CORDEX-WAS CMIP6 downscaling experiments are approaching

completion.

- Antarctic and Arctic: Session on “Polar Modelling” at IUGG, Berlin, Germany.
- MENA: A session with special focus on the MENA climate change based on the results of the MENA-CORDEX activities at the International workshop on Regional Capabilities for Monitoring and Projecting in Climate Changes - Jeddah, Saudi Arabia.
- Southeast Asia: CMIP6 downscaling experiments ongoing.

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**The International Project Office for CORDEX is hosted by
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