



Coordinated Regional Climate  
Downscaling Experiment

## Report 2024



The established Task Forces are:

- **Regional ocean modeling and climate projections**
- **Convection permitting modelling**
- **Machine learning**
- **CORDEX-CORE CMIP6**
- **Preparing CORDEX-CMIP7**

Read more about the [Task Forces on the website](#).

### Task Forces

At the International Regional Climate Conference - CORDEX 2023, the conference sessions brought to light several scientific and technical challenges. These challenges require rapid coordination and strategic planning within CORDEX, as well as collaboration with other WCRP and external communities.

In these discussions, it was recognised that the challenges require urgent planning and coordination action beyond the existing CORDEX instruments (domain activities, downscaling intercomparison experiments and Flagship Pilot Studies, FPS), so the CORDEX SAT decided to implement a new instrument (Task Forces) to address these challenges.

Task Forces (TFs) are established as short-term planning actions, lasting up to one year from the time of endorsement, to address rapidly evolving challenges in coordination with other relevant initiatives, where appropriate. The primary goal of a TF is to identify strategic needs and tasks, ultimately developing a proposal of planning steps to implement these activities within the CORDEX framework. This will allow CORDEX SAT to make informed decisions that may involve new instruments, such as working groups.

During 2024 CORDEX opened a call for new Flagship Pilot Studies (FPSs) which lead to the endorsement of five new FPSs starting during 2025. Please find the titles of the new FPSs below (click the link to read more about each FPS).

[Australasia: Sub-Hourly Extreme Precipitation \(SHEP\)](#)

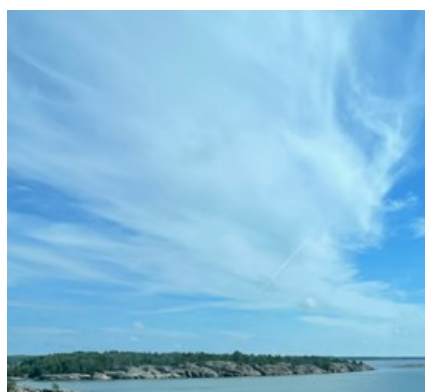
[Macaronesian Archipelagos: Convection Permitting projections focused on island processes \(FPS-I-Mac\)](#)

[Island Climate - Pacific \(IC-Pac\)](#)

[Enhancing climate downscaling at km-scale in sub-tropical South America using](#)

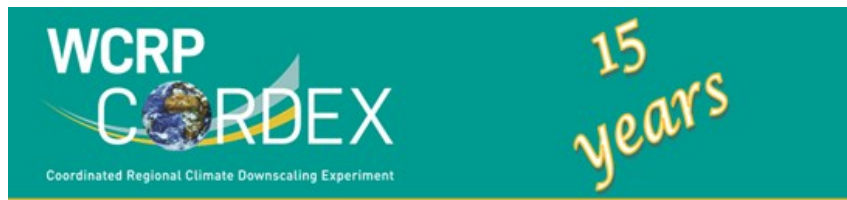
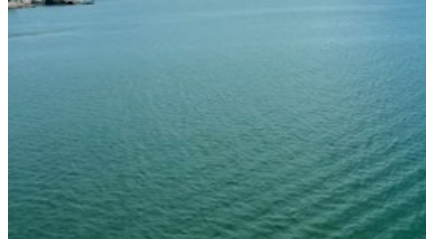


Flagship Pilot Studies



machine learning CPRCM-CMIP6  
emulators

High-resolution downscaling of tropical  
cyclones in the Caribbean region  
(HighResTC-CAR)



## CORDEX celebrated 15 years

2024 CORDEX celebrated 15 years and we took the opportunity to look back at these years as well as the plans ahead. All domains have provided a short summary of their achievements, challenges and activities during the years. These summaries have been published in the newsletters during the year and can also be found on our website under [About/History/CORDEX 15 years](#).

In addition to this CORDEX is putting together a 15th Anniversary Special Collection of papers to showcase the significant achievements, ongoing progress and future challenges of CORDEX.

## EGU24 Townhall

During EGU24, CORDEX IPO together with CMIP and RIFS IPOs organised an information gathering Townhall. The Townhall was designed to understand the challenges of producing information for society based on climate science. This included topics ranging from data access to the treatment of uncertainty and expert judgement over what constitutes robust, decision-ready information.

The key objective of the event was to gather knowledge from people who use climate information to better understand:

- Where do they access data used to produce actionable information?
- What are the challenges of producing information for society?
- How do they handle issues in the data or represent the range of possibilities?



[Read the full report](#)



Four of the SAT members ended their terms at the end of 2024 and [eight new SAT members were appointed](#)

## Extended CORDEX Science Advisory Team meeting in Santander, Spain and online in September.

The objective of the meeting was to move forward in the restructuring of CORDEX, including welcoming a third co-chair, selecting new SAT members and defining responsibilities. There was also an open part of the meeting that aimed to involve the CORDEX community and others in the discussions on the newly established Task Forces, new scientific topics, challenges, collaborations with various WCRP activities as well as

and started at the beginning with non WCRP initiatives and future plans. of 2025.

[Read the report here.](#)

Another topic at the extended SAT meeting was to re-design the CORDEX logo. The new logo has been developed to align with the new WCRP logo and brand identity while still keeping the characteristic parts of the former CORDEX logo.



## Call for proposals to host the CORDEX IPO

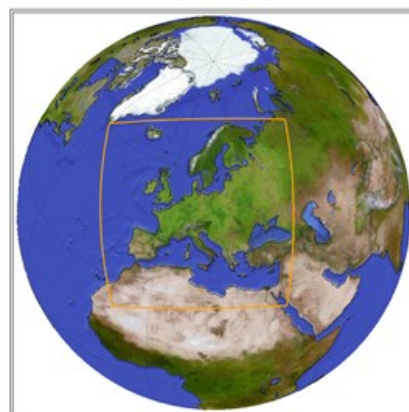
At the end of 2024 a call for proposals to host the next CORDEX International Project Office was launched. The call is still open and more information can be found at the [WCRP website](#).



## A selection of CORDEX domain workshops and events

There were many other activities going on in the domains during this year and below is a selection.

The **8th international Med-CORDEX Workshop**, locally organised by ENEA in Rome, Italy, was a successful event. During the three days, 14-16 May 2024, about 60 participants attended onsite and some invited speakers participated online. [Read more here.](#)



The **14th General Assembly of the EURO-CORDEX** took place 22-25 January, 2024 in Hamburg, Germany. They also celebrated the 15th anniversary of the EURO-CORDEX initiative. [Find out more.](#)

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. [Read the summary report here.](#)

In addition to this 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 26-28 November. [Care for SEA Megacities and CORDEX SEA special session at the IVCEES 2024](#)





On 26 June **CORDEX Africa** held a [strategic meeting online](#) with 20 persons attending, all involved in the CORDEX Africa community in different ways. The objectives of this meeting were to outline priorities for future activities and make a draft master plan for the coming years.

The plans for a bigger hybrid workshop together with RIFS during 2025 are currently ongoing.

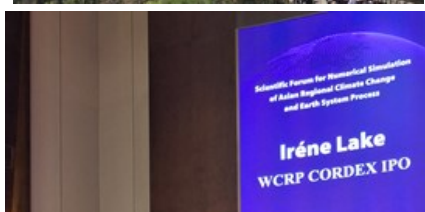


The **Polar CORDEX** community held a very successful meeting in Potsdam, Germany. There was a good mix of presentations on the latest scientific and modelling advances in the Arctic and Antarctic. Read about the meeting [here](#).

The second workshop held by the **FPS: Dynamical downscaling experiments and hydrological modelling for Canada and Mexico** took place in Villahermosa, Mexico in November. The event concluded with a roadmap for delivering integrated climate-hydrology outputs by 2025. Participants highlighted the need to strengthen dynamical downscaling expertise and secure additional resources for continued project development. Read more [here](#).



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. The aim of the activity was to follow up on the FPS-SESA studies and to keep the work dynamics and collaboration network active. [Read more](#).



**CORDEX-MAIRS-FE Workshop on Science-Impacts-Society and Multi-scale Climate-Air-Water Nexus for Sustainable Health, Food, and Energy** was held in Beijing, China 17-18 October. At this joint workshop the specific emphasis was on how climate change is related to air quality and water scarcity/abundance, and the related threats to public health, food and energy security. [Read more](#).

Just before this workshop CORDEX was co-hosting another event also held in





China: the **Scientific Forum for Numerical Simulation of Asian Regional Climate Change and Earth System Process** was held in Suzhou 14-16 October. The forum aimed to improve the understanding of regional climate change and associated Earth system processes, promoting in-depth collaboration among earth system science disciplines.

At the AGU24 in Washington D.C. 9-13 December CORDEX was present. For instance, the session **Regional Climate: Modeling, Analysis, and Impacts** was convened by members from the North America CORDEX. There were also other CORDEX related presentations in other sessions.

[Read more on our website.](#)



## CORDEX at AGU



### Some additional highlights from the **domain reports 2024**

**South America:** Mini-Course “Statistical downscaling techniques” and CMIP6-RegCM5 simulations for the domain.

**Central America:** Special session at the RAUGM related to the new CORDEX Task Force on Regional ocean modeling and climate projections. Members of South and Central America were part of many publications.

**North America:** Many simulations ongoing and planned and many presentations at the AGU Fall Meeting 2024.

**EURO-CORDEX:** Ongoing CMIP6/EURO-CORDEX simulations. Planning for CMIP6/EURO-CORDEX evaluation and Preparation for CORDEX-CMIP7.

**CORDEX Africa:** Two additional Points of Contact and a North Africa team formed.

**South Asia:** Simulations of CORDEX CMIP6 data completed and the data CMORization and publication procedure has been initiated.

**East Asia:** The climate variables displayed in an Atlas implemented using CMIP6 global model data and downscaled data sets on the East Asian region.

**Central Asia:** Collaboration with North America on dissemination of CORDEX activities in the Central Asia domain and support efforts to conduct climate projections for the region initiated. Several presentations at Asian workshops were also held.

**Australasia:** Production of CMIP6 CORDEX Australasia projection datasets and Convective scale simulations for Southeast Australia.

**Polar CORDEX:** Development of an ensemble of regional climate model downscaling of two CMIP6 models over the Arctic CORDEX and Antarctic CORDEX domains.

**Med-CORDEX:** Updated version of the Med-CORDEX-CMIP6 related documents published.

**South East Asia:** Presentations of CORDEX-SEA initiatives at many events and focus on CMIP6 downscaling experiments.

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