

CORDEX Report

1. Highlights for JSC, since April 2017

-- The CORDEX-CORE (Coordinated Output for Regional Evaluations) framework was finalized and three modeling communities (RegCM, REMO, COMSO-CLM) committed to completing the full set of experiments (some experiments are already under way). Other models will contribute over individual domains.

-- The Flagship Pilot Study (FPS) concept was consolidated. Two new FPS proposals were endorsed (both for Africa), five first FPSs reported on progress. In particular the Convection-Permitting (CP) FPS showed substantial progress, with first papers produced.

-- Plans well under way for the organization of the fourth Pan-CORDEX conference to be held in Beijing in the Fall of 2019. Summaries of the CORDEX 2016 conference were published in BAMS and the APN Science Bulletin.

-- A number of CORDEX-related events were organized, including:

- CORDEX Africa Analysis workshops, Cape Town, August, November, December 2017 and February 2018
- CORDEX African Impact Atlas workshops, Cape Town, August, November, December 2017 and February 2018
- Workshop "The Science of Climate Change: a focus on Central America and the Caribbean Islands", Antigua, Guatemala, March 2017
- Session on "Regional Climate Modeling, including CORDEX.", EGU, Vienna, April 2017.
- The 5th Med-CORDEX workshop, Barcelona, July 2017.
- Joint Polar CORDEX meeting, Cambridge, Sept/Oct 2017
- SEACLID/CORDEX Southeast Asia 4th Workshop, Hanoi, November 2017
- Pan-WCRP Modelling Meeting, Exeter, October 2017
- CORDEX and regional downscaling session in AOGS2017, 6-11 August, Singapore
- Euro-CORDEX General Assembly, Hamburg, Germany, January 2018
- CORDEX-Asia ESD session during the International Workshop on Climate Downscaling Studies, 2-4 October 2017, Tsukuba, Japan
- CORDEX Asia ESD Project Meeting, 4 October, Tuskuba, Japan
- Med-CORDEX involvement in the MISTRALS workshop, Montpellier, France, October 2017

- FPS-convection group meetings in Hamburg, January 2017 and in Trieste, November 2017
- Special Session at UGM, Puerto Vallarta, Mexico. SE04: Modelación Climática Regional / Regional Climate Modeling, November 2017.
- CORDEX session at the AGU general assembly, New Orleans, December 2017.
- FPS air-sea (Med) + Med-CORDEX meeting, Majorca, Spain, March 2018

-- Other activities include

- EURO-CORDEX guidelines on climate projections and its use completed, <http://euro-cordex.net/imperia/md/content/csc/cordex/euro-cordex-guidelines-version1.0-2017.08.pdf>
- Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP; <http://www.icimod.org/himap>) partly based on CORDEX results
- Future Climate Change Projections over India assessed using CORDEX South Asia RCM outputs (<http://cccr.tropmet.res.in/home/reports.jsp>)
- WCRP Report No17_2017
- The Arctic ESD tool is followed by users spread over a large number of countries: <https://www.facebook.com/Rclimateanalysis/insights/?section=navPeople>
- [Support for the IPCC AR6 by collecting a bibliography of all CORDEX publications in recent years](#)

2. Early success and/or planned activities in 2017/2018, some pending decision on funding

- Workshop on Polar lows and extreme weather events, Trier, Germany, April 2018
- Regional climate modeling, including CORDEX, session at EGU, Vienna, Austria, April 2018
- Climate change and its impacts in the Latin America and Caribbean region, session at EGU, Vienna, Austria, April 2018
- MENA-CORDEX meeting in connection to Climate Change in the Mediterranean and the Middle East, Cyprus, May 2018
- Polar Cordex workshop, Warsaw, Poland, Autumn 2018.
- Aerosol FPS (Med) meeting, Toulouse France, June 2018
- Regional downscaling session at AOGS2018, 3-8 June 2018, Honolulu Hawaii
- CORDEX SEA 1st 2018 Workshop, Kuala Lumpur, Malaysia, May 2018
- Regional training Workshop/CORDEX in La Paz, Bolivia, June 2018
- LUCAS FPS annual meeting, Thessaloniki, Greece, June 2018
- Special Session on Regional climate modeling and CORDEX, UGM, Puerto Vallarta, Mexico, October 2018
- Creation of an interactive web page with regional climate data for the CAM-CORDEX region
- FPS Convection Permitting Modeling workshop in Boulder, CO Fall, 2018
- CORDEX SEA 2nd 2018 Workshop, Manila, Philippines, November 2018

- Med-CORDEX will contribute to the MedECC report, 'a regional climate change assessment report' targeting the stakeholders, <http://www.medecc.org/>

3. Primary science issues (ahead, 3 to 5 years)

- CORDEX CORE.. While the first set of CORDEX CORE experiments has been designed and is currently under way, there is the need of develop a cross domain analysis strategy to best address scientific issues such as: added value of the use of RCMs; process studies resulting in a better understanding of fine scale climate change signals; processing of model output to optimize the contribution to CMIP6, the IPCC and the use in VIA applications.
- Better elucidate the added value of CP modeling as applied to long term climate simulations. The CORDEX FPS on CP will be pivotal in this process.
- Better elucidate the need and advantages of regional coupling of Earth System components. The CORDEX FPS on aerosols, and the Med-CORDEX and BALTEX initiatives will contribute to this issue.
- Revisit the CORDEX Regional Scientific Challenges. Currently, five general cross-cutting scientific challenges have been identified: Added value of downscaling, inclusion of human element in climate models, regional coupled modeling, CP modeling, and capacity building. While these are cross-cutting challenges, more focused science issues need to be identified to better solicit scientist involvement. Currently, a matrix-system of themes/focuses is being developed, for which CORDEX can provide maximum contributions, including foci such as the study of coastal urban environments, inland water bodies and islands, extremes, and high mountain environments. This matrix is still evolving and will need to be discussed with the broader CORDEX community.
- Review CORDEX goals to ensure alignment with the new WCRP Strategic Plan and its implementation plan.

4. Issues and challenges:

- The two CORDEX SAT co-chairs will rotate off within the next couple of years and suitable replacements will need to be recruited.
- The role of CORDEX within the new WCRP structure needs to be clarified.
- The scientific boundaries of CORDEX activities need to be better clarified.
- Better coordination across different regional CORDEX activities.
- Improved interactions with CMIP6 and other WCRP activities and programs.
- Improved communication across the CORDEX regional communities.
- Strategies for obtaining funding for CORDEX activities need to be developed, especially for activities outside Europe and the U.S.
