

Objectives of the discussion session

- Overall goal: Discuss and possibly agree on the basic frameworks for CORDEX2
- 1) Discuss and revise the key CORDEX scientific challenges identified in the SAT2 meeting (Gutowski)
- 2) Flagship Pilot Studies (FPSs) (Kjellstrom)
 - Announce the approval of the first 5 FPSs
 - Review the procedure for FPS approval and monitoring
- 3) Discuss and possibly agree on the Common Regional Experiment (CORE) Framework (Giorgi)

Some input to consider: WCRP

- WCRP is revising some of its structure and the place of CORDEX is still not well defined
 - Used to be a project under the framework of the WGRC (Working Group on Regional Climate) mandate
 - Currently listed in the WCRP website as a “CORE Project” (same level as CLiC, CLIVAR, GEWEX, SPARC)
- Call for a better integration with other WCRP programs, in particular the WCRP Grand Challenges
 - Clouds, Circulations and Climate Sensitivity
 - Melting ice and global consequences
 - Climate extremes
 - Regional sea level change and coastal Impacts
 - Water Availability
- Some new emphases
 - The FOCl initiative
 - The “Food basket regions” (Central US, SE Europe, SE Asia)
 - Coastal megacities

Some input to consider: IPCC

- Call for a general stronger contribution of CORDEX to the IPCC reports
 - In the AR5 CORDEX was not very prominent
- Call for some type of “Atlas like” product based on CORDEX runs (Brasil regional projection workshop).
 - Deadline for accepted papers: Mid June 2020
 - Greater emphasis on low end scenarios
- Call for a CORDEX contribution to the upcoming 1.5°C global warming special report
 - Deadline for accepted papers: March 2018
- General increased emphasis on low level emission scenarios

The COmmon Regional Experiment (CORE) Framework

- Main motivations
 - Call by IPCC for a greater role in the next report, and in particular for the production of a CORDEX based “Atlas like” product. (June 2020)
 - Call by IPCC to contribute to the 1.5C special report (March 2018)
 - Natural evolution of CORDEX1
- Main issues with the present (CORDEX1) framework
 - Large inhomogeneity of information (experiments) across different domains (Europe vs. Australia and Central Asia)
 - Relatively coarse resolution, in particular vs. the planned CMIP6 GCM experiments
 - Need of reasonably comprehensive and representative M^n ensembles

The COmmon Regional Experiment (CORE)

- Current thinking:
 - Step 1: Use a core set of RCMs to downscale a core set of GCMs over all (or most) CORDEX regions for a core set of scenarios (Core³)
 - Step 2: Incrementally augment the Core³ ensemble with further models/experiments (i.e. open process).

Main CORE issues to be discussed (and agreed upon?)

- How many RCMs? (Community RCMs? ~5?)
- How many GCMs? (5-6 from Bruce's talk ?)
- Resolution? (Somewhere between 10 and 25 km).
- Priority scenarios? (RCP2.6, RCP8.5)
- CMIP5 or CMIP6 GCMs?
- How to choose GCMs? Common for all regions?
- What data to be stored? (Minimum set)
- How to incorporate ESD?
- Resources?
- Timeline?