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Plans for the next phase of CORDEX activities

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Ensembles of Regional Climate Model (RCM) projections have been
completed under the protocol of the first phase of the COordinated Regional Downscaling EXperiment (CORDEX, Giorgi et al. 2009) over most CORDEX domains. As a result of these activities a number of scientific issues have emerged, which provide the basis for discussion of the next phase of the CORDEX program. Among such issues are a clearer identification and quantification of the added value of the use of RCMs, the development and use of a new generation of very high resolution (<10 km), convection permitting RCMs, the coordination across development efforts of coupled Regional Earth System Models (RESMs), a more detailed and process-based analysis of RCM simulations, the effects of regional forcings (e.g. land use change and aerosols) and a better integration of empirical/statistical downscaling within the CORDEX framework. A large inhomogeneity was also noted across different CORDEX regional efforts, with some domains (e.g. EURO-CORDEX, AFRICA-CORDEX and MED-CORDEX) being covered by large ensembles and others by much more sparse experiment matrices. This has limited the use of CORDEX results in international programs such as the Intergovernmental Panel on Climate Change (IPCC). Two avenues are being discussed in order to address these issues. The first is to produce a homogeneous set of higher resolution projections (10-20 km) across all or most CORDEX domains using a core set of RCMs downscaling a core set of GCMs. The second is to develop and implement a set of "Flagship Pilot Studies (FPSs)" over sub-regions of interest aimed at addressing specific scientific questions (e.g. added value and convection-permitting simulations, intercomparison of different downscaling approaches, land-use and aerosol effects). In this presentation we will describe the status of the discussion and plans for these new CORDEX initiatives, which will be likely finalized at the upcoming third Pan-CORDEX conference (ICRC-CORDEX 2016) to be held in Stockholm on 17-10 May, 2016.

Giorgi F, Jones C, Asrar G, 2009. Addressing climate information needs at the regional level: the CORDEX framework. WMO Bulletin, 58:175-183.