

Session D8 - Coordinated training programmes in CORDEX
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A series of questions were drafted and participants asked to share their experiences pertaining to the questions

What have your experiences of workshops been?

1. *What was the theme of the workshop?*
 - Model system training; analysis; learning about sea-level rise and hands-on training; data handling; paper writing workshop; software training;
2. *What kind of activities did the workshop facilitate?*
 - RCMES training at ICRC2016; python (notebooks) and CDO training; how to write a paper; how to set up an experiment and run the model; how the model works;
3. *What were some of the outcomes of the workshop?*
 - Can help with analysis for thesis; model execution; workshop presentations;
4. *Did you find the workshop useful for your career / studies?*
 - Personal skills development; community development; meeting senior scientists;
5. *What difficulties did you experience?*
 - some people do not know netcdf; short training workshops are difficult because low time exposure to analysis software; post-workshop follow up; it is difficult to get selected to attend some workshops; some do not have peers to work with;
6. *What did you like most about the workshop?*
 - workshop documentation put online; follow up workshops;
7. *Difficulties on executing workshops in developing countries*
 - Participant selection; power cut outs; bandwidth challenges; compute facilities; software licenses; need open source; Prepare all scripts with data before the workshop to run on a virtual machine <- this makes the common environment;

Participants were then asked what kinds of workshops would be useful for them.

- Training in data analysis and making scripts available that were used in analysis and publications
 - Suggested user group support and a common repository of scripts (Github)
- Software tools upskilling (e.g. python, netcdf and CDO/NCO; familiarization with linux environment and scripting)
- Development of guidance manual of climate data analysis
- How to write papers (write shops)
- Know which audience you are running the training for and develop workshop appropriately (Training on basic understanding of climate data/information)
- Workshops for impact scientists to understand how to work with CORDEX data (develop some basic understanding on climate, weather, ensembles, uncertainty, interpretation of data)
- Workshops on how to run a regional model in a local place e.g. having the RegCM workshop in a local region was useful

Lastly participants were asked how they thought CORDEX could contribute to workshop content and logistics.

- Develop a few kinds of common workshop that could be executed across all domains.

- The development of ECS through these workshops
- Create a coordinated repository of presentations, analysis software, analysis guidelines
- SAT regional members and POCs to look into potential regional/global funders
- Tailor workshops to a particular audience – are they “next users (data)” or “end users (information)”
- Training on theory and execution of regional climate models
- Training on how to write a journal paper
- Extended workshop: e.g. 1-week startup in Africa; 3 weeks intensive in Europe (ICTP in Italy or SMHI Sweden)
- Develop CORDEX data in ascii for impact scientists
- Basic linux commands for 2 days before anything else with relevant exercises
 - Scripts need to be very well commented
- Prepare all scripts with data before the workshop to run on a virtual machine <- this makes the common environment

In summary:

1. Develop a common and coordinated approach/structure in running workshops that could be transferable across CORDEX domains
2. Four types of workshops should be considered:
 - Training on theory and execution of regional climate models
 - Data analysis (including software training, e.g RCMES, ESMvalTool; python, CDO, NCO, etc)
 - Paper writing
 - Training on basic understanding of climate data/information
3. Coordinated repository of presentations, analysis software, scripts, documentation would be extremely useful (also assists with helping people who could not attend workshops)
4. Funding for workshop always a problem
 - SAT and regional POCs to identify potential funders
 - Support from WCRP to approach funders