



The 2nd WCRP CORDEX South Asia Science and Technology Workshop

(in partnership with MAIRS, APN, ICIMOD, CCCR-IITM, IAP)

27-30 August 2013, ICIMOD, Kathmandu, Nepal

DRAFT OUTCOME

With rising levels of green house gases in the atmosphere, there is growing concern about diverse risks from climate change. As temperatures increase and rainfall patterns change, communities are asking about the potential impacts on water, food, and energy.

To help answer such questions, 70 experts from 16 countries met in Kathmandu from 27 to 30 August 2013. The meeting was hosted by the International Centre for Integrated Mountain Development (ICIMOD) in collaboration with the World Climate Research Programme (WCRP), the Indian Institute of Tropical Meteorology (IITM), the Chinese Academy of Sciences (CAS), and Monsoon Asia Integrated Regional Study (MAIRS). The programme is funded by the Asia Pacific Network for Global Change Research (APN) and WCRP.

The first two days of the workshop focussed on evaluation of monsoon climate simulation in Hindu Kush-Himalayan and Tibetan Plateau region from multiple climate models and assessment of downscaling techniques and their products to understand uncertainties accompanying the regional climate projections. On the third day a dedicated session on end users applications (hydrology, agriculture, water resources, land cover and ecosystem, human health etc.) was held. The user's needs from the climate modeling communities were expressed and needs to bridge the gaps between end users' needs and climate modeling communities. Discussions were held on downscaled products, with definition of data types, formats and resolutions, for vulnerability, impacts and adaptation analysis. Hands on training on various user modules (hydrology, agriculture, economic impact of climate change on agricultural production, land use change etc) were introduced and training conducted.

Key Issues

Climate modelling

- Accuracy and availability of observed data is very important for verification and for bias correction
- On regional scales climate simulations from different climate models can vary significantly for example Indian monsoon rainfall simulation from two models.
For example: RegCM and WRF
- In addition to RCP 4.5 it might be desirable to have other RCP scenarios .
- Quantify and reduce uncertainties in regional climate projections

- Suggestion to have intercomparison of hydrological models for the HKH region with consistent data and inputs

Impact Modelling

- Application of CORDEX data for impact assessment of climate change through various modelling approaches (hydrology, agriculture, health, ecosystems, water resources, etc)
- Generate knowledge for different impact models for different sectors – Status and gaps
- Quantify uncertainties in impact models and improvement in existing impact models by incorporating reliable observations
- Adaptation measures to climate change must be integrated holistically with other related issues and not treated as a problem by itself.

End user interface with climate scientists

- User chain – various levels of end users - suggestion to invite the various users including the extension workers who can demonstrate real impact
- Application scientists are the ones to bridge the climate scientists and the end users.
- Need reliable and convincing and clear signal and impact assessment – need fast and attractive information – idea about knowledge management system to communicate to the end users
- Limitations and applicability of observations and model data must be clearly understood by users. Need to convert the scientific information that can be understood by the end users.

Data and products

- Co-ordinate data distribution, archival and hosting of data at CCCR-IITM through CCCR web-portal (mail to: cccr.tropmet.res.in) in standard format using Integrated Rule-Oriented Data System (iRODS)
- Data supporting frame in CORDEX Asia (download, documentation, evaluation, parameter recommendation for different users) depending on the current data centres in 3 regions. Link websites of coordinating agencies e.g., IITM, ICIMOD, MAIRS, GDSC-Korea, etc.

Capacity building and training

- Reliable technical supports for data access and downscaling is important for user community.

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- Need for capacity building in understanding the uncertainties and applying climate scenarios.
 - Downscaling supporting frame in CORDEX ASIA (key scientists and core institutes) including dynamical and statistical downscaling is suggested
 - Appointing key organizations as centres of excellence for CORDEX Asia training

Future Actions

- Data to be made available in the CORDEX South Asia portal by IITM, Pune by last quarter of 2013. To start with surface parameters will be uploaded.
- List of variables of interest to users to be compiled and made available to IITM, Pune. Participants to send in the list to IITM by September, 15, 2013 to communicate about the data requirements from users (Email: cccroutreach@tropmet.res.in)
- Develop CORDEX Asia user forum and mechanisms to help stakeholders for various activities – scenario generations, impact assessments, evaluate uncertainties, generating products that are easy-to-create and understand, publications etc
- Publication of the proceedings of the 2nd CORDEX South Asia workshop for which speakers and participants send in abstract of presentation by September 15, 2013.
- CORDEX Conference in Brussels in November: outcomes of this science and training workshop to be shared and recommendations to be placed before WCRP-CORDEX.