Session 5: CORDEX-Asia ESD

Koji Dairaku

National Research Institute for Earth Science and Disaster Resilience

Hi-Resolution Multi-Ensemble Statistical Downscaling Regional Climate Scenarios

- 3GCMs*3RCMs RCP4.5

- Peak precipitation linked with peak temperature 19-22 degree

- Increase in temperature is from 20 to 22 (2 degree increase)

- The social implementation program on climate change adaptation technology

- 37 CPMIP5 models are used rcp8.5 for 1950-2005 and 2026-2050

- Bias corrected spatial disaggregation (BCSD) is used

- BCSD show good performance for annual and seasonal averages

- Under estimate the extreme events of hot days.

- All model have different response show increase in extremes of temperature and precipitation

- Statistical downscaling add value to the efforts of CORDEX Asia service is required

- DD and ESD both work together with Common protocol, case study in small region, improve reference data, Training workshop

- Multi model, Hi resolution, Bottom up, ESD group and CMIP6

- Comments: What is the progress on SD group?

Nuzba Shaheen

Global Change Impact Studies Centre

Performance Evaluation and Statistical Downscaling of CORDEX RCMs for Impact Assessment Studies in South Asia and South East Asia

- Skill assessment of cordex 4 models group downscaled with different GCMs compared with CRU data

- For Downscaling QM used

- RCA4 is best in precipitation in HKH region followed by REMO

- CCAM is best for temperature simulation

- RegCM has cold biases like RCA4 for 10 degree

- Agriculture: Accomplished a case study to assess changing patterns of Growing Degree Days from North to South in Pakistan, and the trend is significantly increasing in future

- Future work: Improved temp. & spat. resolution climate information

- Comments: Provide results to policy maker and then they involve different stack-holder

Shaukat Ali

Global Change Impact Studies Centre

Future Projections of Climate Extremes over Pakistan Using QM, DQM and QDM Statistical Downscaling/Bias-Correction

- Validated RegCM model

- Use CORDEX data after bais correction for hydrological study.

- Climatic and hydrological aspect were discussed

- Improved bias correction techniques were used for future trend preserving

- Issues with high resolution data needed

Ashwini Aniruddha Kulkarni

Indian Institute of Tropical Meteorology

Statistical Downscaling for South Asian Region

- SD are transfer function, weather typing and weather generator.

- Issue: Coastal and mountainous regions

- Tools: Analogues, weather classification scheme and regression models, soft computing, neural network and fuzzy classification

- Current work: NEX-GDDP SD models for Indian landmass. Some SD models give less bias than dynamical downscale models over region.

- Future work: Examine other SD methods for improved simulation of Indian summer monsoon rainfall.

- Comments: Hydrologists need point scale information e.g. one day extreme rainfall

Seonae Kim
Kongju National University
Statistical Downscaling for Daily Precipitation in Korea Using Combined PRISM, RCM, and Quantile Mapping: Part 1. Methodology and Evaluation in Historical Simulation

- 5 RCMs downscaled with QM then applied to correct the additional biases using transfer function 1 km

- PRISM(Parameter-elevation Relationships on Independent slopes Models) based dynamic downscaling error correction.

- Error were reduce

- Current work: Producing future period scenario for Multi-RCM

- Future work: Comparing various QM methods for improvement