

## Session 3.1

Downscaling over the Asian Countries

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A Project on Regional Climate Change for East Asia and Korean Peninsula  
-within the CORDEX Framework-  
by Hyun-Suk Kang

- Dr. Kang mentioned the differences between the CORDEX-EA Phase 1 and Phase 2:
  - New selected domain
  - Twice higher resolution in RCM simulation
  - Increase collaboration, i.e. China, Japan, Korea and statistical downscaling organization
  - Additional GCM forcing.
  - ESGF data node will be setup by APCC and KMA, maybe next year
- Some issues have to be discussed for CORDEX-CORE
  - Setup GCM-RCD matrix : 5 GCMs and 3 RCMs at least
  - Share outputs within East-Asia and Asia communities for publications to meet AR6 timeline.
- Comments
  - Availability for using CMIP6 forcing? – Possible, but timeline is too tight
  - Providing hourly output: 3-hourly data is mandatory

## Downscaling of CMIP-5 GCMs for Future Climate Projection over the Area of Southeast Asia and Thailand by Dr. Jerasorn Santisirisomboon

- Dr. Santisirisomboon summarized the SEACLID/CORDEX SEA project:
  - Projected future changes of mean precipitation and its variability over Thailand from multi-model regional climate simulations of CORDEX Southeast Asia.
    - The ensemble simulations during historical period were reasonable but tended to produce wet biases over Thailand.
    - Underestimation in interannual variability in RCMs results in its in GCMs.
    - Tendency for wetter (drier) condition during dry (wet) months.
  - Application of the simulations
    - A Study of watershed management under climate change: A case study at Sirindhorn International Environmental Park.
    - A comparative study on the change of hydrological process and fluxes in the Julong River and Chao Phraya River basins under changing climate.
- Comments
  - Look into historical flooding in Thailand
  - APHRODITE shows largest RSME over eastern Thailand

# Evaluation of NHRCM High-Resolution Climate Simulations over the Philippines

by Dr. Faye Cruz

- Dr. Cruz evaluated NHRCM performance compared with ERA-Interim:
  - NHRCM reduced the wet and warm bias and may have higher spatial correlations in some regions (e.g. Philippines, Maritime Continent)
- Projection under RCP8.5 in the end of 21<sup>st</sup> century
  - Significant warmer (3.3°C) -->consistent warming across all season, especially in MAM
  - Significant wetter (10.6-12.4%), particularly over high terrain-->increase in days with extreme rainfall
- Future work
  - Look into more detail on the underlying mechanisms behind the influence of model resolution on the simulated climate and changes.
  - Increase climate change information over CORDEX-SEA
- Suggestion
  - Link between cold bias and wet condition in 5-km NHRCM simulation