Model Contribution To GEWEX Roadmap
(global, regional, land, HAP)

Produce consistent research quality data sets complete with error descriptions of the Earth's energy budget and water cycle and their variability and trends on interannual to decadal time scales, for use in climate system analysis and model development and evaluation.

- 2007: Complete the quality control, production and distribution of the CEOP Phase I data sets. (CEOP)

  - Documentation and verification of model data sets at the CEOP model data archive for global data (atmosphere and land)

  - cut-off date for delivering phase 1 model data to model archive

  - Documentation and verification of model data sets at the CEOP model data archive for regional model data from ICTS

- 2007: 1980-2010 dataset: Request CEOP gather from NWP centers what their global reanalysis, land only global reanalysis, and re-forecast/hindcast plans are.

- 2008: Ensemble of CEOP Phase 1 monthly means and standard deviation (cross cutting to e.g. GRP radiation products)

- Common Data Format

Enhance the understanding of and quantify how energy and water cycle processes contribute to climate feedbacks.

- 2008: Develop an inventory of floods and droughts and the role of land-atmosphere feedbacks in causing those events. (CEOP, GRP)

  - Inventory how regional models simulate flood and drought characteristics using CEOP observations and ICTS simulations

- 2010: Provide an assessment of the role of land-atmosphere interactions during extremely wet and extremely dry (drought) periods. (CEOP)

  - Importance of specification and parameterization of vegetation in simulating wet and dry periods using CEOP observations and ICTS simulations.

Improve the predictive capability for key water and energy cycle variables and feedbacks through improved parameterizations to better represent hydrometeorological processes, and determine the geographical and seasonal characteristics of their predictability over land areas

- 2007: Start development of ground water parameterizations for regional to global scale models

- 2009: Promote the use of remotely-sensed data and develop related products to study the role of soil moisture in land atmosphere interactions. (GMPP, CEOP)

  - Implement data assimilation algorithms for soil moisture in uncoupled and coupled data assimilations systems

- 2012: Demonstrate the contribution of improved prediction systems for forecasting the onset and intensity of droughts and the recovery from drought. (CEOP)

  - NWPs in CEOP will execute re-forecast experiments to demonstrate whether physical parameterization improvements that emerged from CEOP intercomparisons of GCMs with reference sites and satellite observations yielded improved predictions of hydrological significants events like doughts and floods and monsoons. (needs re-wording)

Undertake joint activities with operational hydrometeorological services, related ESSP projects like the GWSP, and hydrological research programs to demonstrate the value of GEWEX research, data sets and tools for assessing the consequences of climate predictions and global change for water resources.

- 2007: Launch at least two pilot projects in GEWEX CSEs that will utilize hydrological ensemble prediction techniques as a HAP and HEPEX initiative. (CEOP)

  - CPPA launching a pilot project to demonstrate multi-model ensemble hydrological prediction (streamflow, snow pack, soil moisture) on medium range (1-2 weeks) and seasonal time scales.

- 2007: Downscale and evaluate seasonal hindcasts over the CSEs using NOAA and DEMETER seasonal forecasts that can be assessed by CSE scientists (CEOP)

  - Launch downscaling studies in CPPA seasonal hindcast experiment

- 2008: Develop links with THORPEX to undertake predictions on daily to monthly time scales to look at intra-seasonal prediction capabilities. (CEOP)

  - In CPPA pilot project launched in 2007 links are going to be created between CPPA and THORPEX for the inter-seasonal prediction range

- 2009: Evaluate seasonal hydrological forecasts from hindcast studies for the initial two pilot studies; and launch additional HAP and HEPEX pilot studies. (CEOP)