

SUMMARY OF GEWEX SSG-15

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The 15th Session of the GEWEX SSG was held on January 20–24 at the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in Bangkok, Thailand. During the opening remarks, the economic and social value of the accurate prediction and modeling of the hydrological cycle was emphasized as well as the importance of GEWEX research towards accomplishing this task.

In his opening statement, Mr. Kim Hak-Su, Executive Secretary of UNESCAP, noted that by 2025 about 60% of the world population is expected to be living in water stressed countries. As the largest regional economic and social commission of the United Nations, with members extending from Europe to the Pacific, UNESCAP serves a region that represents some 60% of the world's population (3.8 billion) and 75% of the poor in the world. Mr. Hak-Su stressed the importance for policy makers of knowing how climate change scenarios will impact the regional hydrological cycle for the next 20, 50 and 100 years. For example, millions of Asians are displaced by monsoon flooding each year. Operational flood forecasting could alleviate this problem.

The following activities of the GEWEX Hydrometeorology, Radiation and Modelling and Prediction Panels were reviewed during the meeting.

In 2001 the Coordinated Enhanced Observing Period (CEOP) was confirmed as the first element of the Integrated Global Water Cycle Observations theme at the 8th session of the Integrated Global Observing System Partners (IGOS-P). This year, a series of workshops are being held to draft the report on this theme, to which GEWEX is a key contributor. It is hoped that this involvement by GEWEX will facilitate the development

of new initiatives that could assist us in achieving our goals and provide GEWEX with an opportunity to “broadcast” its need for observational data, services and infrastructure.

The GEWEX Asian Monsoon Experiment (GAME) and the Mackenzie GEWEX Study (MAGS), both in their intensive analysis phases after earlier observational efforts, are producing results.

At a joint GEWEX-International Association of Hydrological Sciences (IAHS) Workshop on the Application of GEWEX Scientific Research to Water Resources Management, the participants noted that GEWEX goals are not well understood in the water resource community. Water managers see the integration of hydrological and climate models by GEWEX as most applicable to their needs. The SSG agreed that the guidance and objectives of Water Resources Application Project (WRAP) should be revised to provide broader interactions with the hydrology community. These interactions would include: further development of a joint project with IAHS such as the Decade of Prediction in Ungaged Basins (PUB); a “catalog” of applications type projects that are related to the Continental Scale Experiments (CSE), and re-emphasizing mountain area activities that may cross-cut with the precipitation activities throughout GEWEX.

Couplage de l'Atmosphère Tropicale et du Cycle Hydrologique (CATCH) activities have been folded into the African Monsoon Multidisciplinary Analysis (AMMA), which is becoming a major international effort focusing on the African monsoon. The SSG agreed that AMMA may assume the status from CATCH as a GEWEX Hydrometeorology Panel (GHP) “affiliated” project and is encouraged to continue along its path to develop into a more complete CSE type experiment.

The SSG recognized the growing importance of isotope studies to better characterize continental scale water balance and encouraged the GHP to consider forming a

new working group on the use of isotopic data to assist in determining the water cycle variability.

The comparison of the Tropical Rainfall Measuring Mission (TRMM) precipitation estimates with the Global Precipitation Climatology Project (GPCP) data is becoming the baseline for both incorpo-

Participants at the 15th Meeting of the GEWEX Scientific Steering Group.



rating TRMM data into the GPCP product and extending the understanding provided by TRMM back for 20 plus years (GEWEX News, November 2002).

The International Satellite Cloud Climatology Project (ISCCP) has produced an 18-year global radiative flux data product, which provides consistent surface and top-of-atmosphere (TOA) radiative fluxes by showing the global monthly mean net shortwave and net longwave anomalies at the surface, in the atmosphere and at the TOA over the whole time period (GEWEX News, November 2002). In 2003 the review of Global Circulation Model (GCM) radiative transfer code features and metrics for testing clouds and radiation in GCMs will be completed and a workshop on polar clouds and precipitation will be organized jointly with the Climate and Cryosphere (CliC) Study.

Scientific advances by the GEWEX Cloud System Study (GCSS) working groups that are expected during the next several years include rapid progress on the representation of sub-grid scale cloud overlap and inhomogeneity due to the combination of Cloud Resolving Models (CRM), cloud radar observations, and faster methods of calculating radiative fluxes for arbitrary cloud configurations; and progress in the understanding and representation of cloud microphysical, formation, and dissipation processes due to integrated use of Large-Eddy Simulations (LES) models, CRMs, Single Column Models (SCM), GCMs, and cloud-scale observations, plus insights from recent and upcoming field experiments.

Under the Global Land-Atmosphere System Study (GLASS), the Rhone-AGgregation experiment was successfully completed this year. This experiment was an intermediate step leading up to the next phase of the Global Soil Wetness Project Phase (GSWP) II for which there will be a broader investigation of the aggregation between global scales (GSWP-1) and the river scales.

In March 2002, the GEWEX Atmospheric Boundary Layer (GABLS) held a very successful workshop at the European Centre for Medium-Range Forecasting. An additional meeting was held at Wageningen University in July 2002. The outcome of these meetings is that the initial focus of GABLS is the stable boundary layer over land.

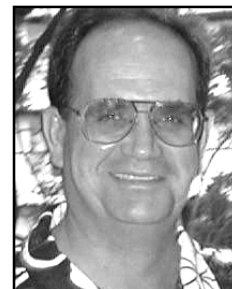
The SSG acknowledged the importance of cross-cutting activities and encouraged the establishment of the following two activities across the GEWEX Radiation Panel (GRP), the GEWEX Modeling and Prediction Panel (GCSS and GSWP) and GHP:

(1) Precipitation – address critical issues in reducing errors in retrievals and representations of global precipitation (including solid precipitation), and improve model precipitation process representations to improve climate and weather model predictions of precipitation.

(2) Global Water Cycle and Energy Budget (G-WEBS) Estimations – provide a structured process for determining the variations and changes in the global energy and water cycles (to estimate our ability to meet this first objective for GEWEX) and to determine our ability to close the energy and water budgets on various scales.

CHANGES IN GEWEX

At the 15th Session of the GEWEX SSG, Dr. John Roads, Director of the Experimental Climate Prediction Center, Climate Research Division, Scripps Institution of Oceanography at the University of California at San Diego, was appointed as the chair of the GEWEX Hydrometeorology Panel. He replaces Dr. Ronald Stewart, who held this position twice in two nonconsecutive terms. Dr. Roads also serves as the lead for the Water and Energy Budget Study (WEBS) under GHP.



WCRP SATELLITE WORKING GROUP REPORT PRESENTED TO CEOS

The WCRP Satellite Working Group Report, "Update of Space Mission Requirements for WCRP," prepared by Guy Duchossois and Gilles Sommeria, was presented by Gilles Sommeria to the Committee on Earth Observation Satellites (CEOS) Consultative Group meeting on High Level Policy on Satellite Matters, 3–4 February 2003 in Geneva, Switzerland.

A review of past accomplishments and research progress was conducted by an informal Working Group set up by WCRP over the period September–December 2002. The findings and recommendations of the Group were given in terms of priorities for future space missions, requirements regarding data management and enhanced interaction with space agencies.

In order to get the full benefit of the large space investments, the Working Group made a number of specific recommendations emphasizing the importance of ensuring continuity of existing and planned missions or measurements (e.g., precise altimeter missions, Earth radiation measurements), the identification of priorities for next space missions and measurements (precipitation/GPM, salinity and soil moisture/SMOS), and the need to explore further scientific processes crucial for climate understanding (e.g., troposphere/stratosphere interaction processes, cloud radiative processes). The importance of protecting appropriate radio-frequencies for the next generation of microwave sensors was also highly stressed by the Working Group.