

APPLYING PLANETARY WATER AND ENERGY CYCLE SCIENCE AND OBSERVATIONS TO REGIONAL AND LOCAL DECISION MAKING IN THE WATER SECTOR

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Poster Purpose:

To provide some background information on the role of the Global Energy and Water Cycle Experiment (GEWEX) and the Integrated Global Water Cycle Observations Theme (IGWCO) in addressing issues related to water management.

The Challenge:

Water managers must deal with many diverse and uncoordinated types of information.



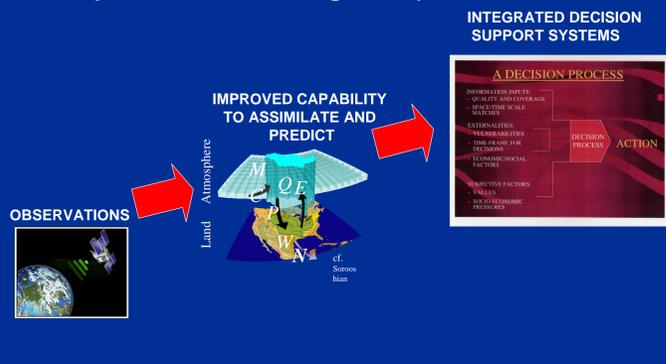
Requirements:

Recent requirements for water cycle information include:

- Mitigating the impacts of floods and post-flood clean-up.
- Predicting the extent, duration and impacts of drought.



GEWEX/IGWCO Vision: (Towards a new epoch in water management)

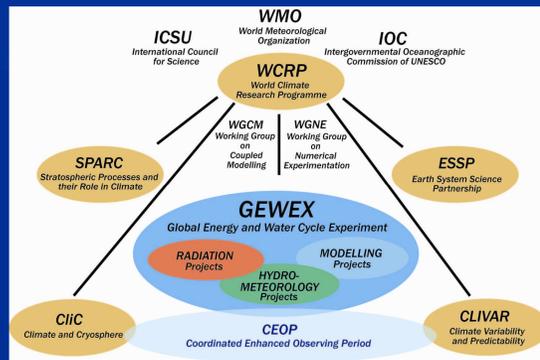


GEWEX: (From research to information)

GEWEX applies planetary and regional scale observations, models and knowledge to problems of climate and water resources. It does this by producing global data sets, undertaking field campaigns, carrying out predictability studies and undertaking demonstration projects to show the value of climate information. GEWEX works closely with operational hydrometeorological services to incorporate its research advances into the information services available for water resource managers.

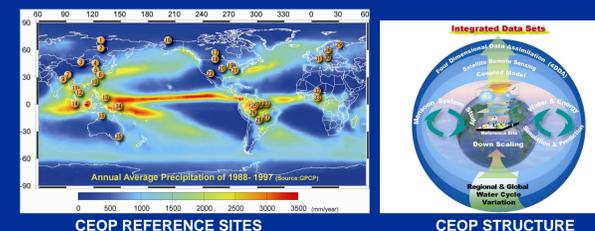
GEWEX began in 1990, entered its second phase in 2002 and plans to complete this phase in 2012-2013.

The GEWEX Organization:



GEWEX supports water management by:

- Developing systems that can generate new products to meet the needs of users.
- Developing models that can take maximum advantage of the information content of new observational systems.
- Supporting demonstration projects that can show how climate information can be applied to decision making in the water sector.
- Developing data management and analysis systems that provide access to observational and model products for use in model development. The Coordinated Enhanced Observing Period (CEOP) is a primary example.



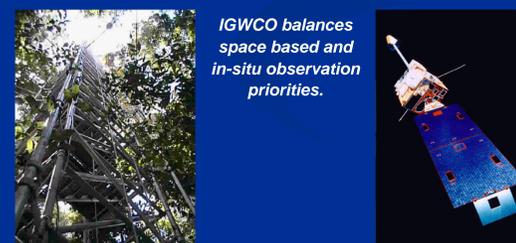
IGWCO: (From observations to information)

IGWCO is a theme under the Integrated Global Observing Strategy Partnership (IGOS-P) that deals with Earth Observations in the water sector. In particular IGWCO provides guidance on the use of observations for:

- Monitoring climate variability and change;
- Effective water management
- Sustainable water development and environmental management;
- Weather and water forecasts; and
- Critical climate research.

The IGWCO plan was approved by IGOS-P and implementation began in 2004.

IGWCO works with users to define the requirements for Earth Observations. It supports capacity building activities to ensure the benefits of observations are realized by the broadest community of stakeholders possible.

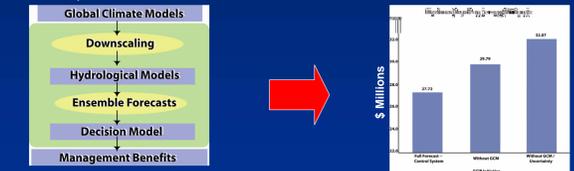


IGWCO is facilitating the development and implementation of:

- Techniques that can integrate the strengths of various water cycle observations into the best possible integrated products for use by water managers.
- Inventoring the needs of water managers throughout the world for Earth Observations.
- Conducting capacity building workshops that allow different groups to share their experiences in applying Earth Observations.
- Providing a link with the Global Earth Observation System of System (GEOSS) design framework and its Water Cycle Societal Benefit Area priorities.

GEWEX and IGWCO Approaches to Applications:

- Assessments of the potential benefits of accurate climate forecasts;



- Hydrologic ensemble predictions (predicting outcomes and uncertainties);
- Demonstration projects using Earth Observations (e.g. SIRVIR, GLDAS, LIS); and
- Applications of remote sensing data in Geographical Information Systems (GIS) for water resources planning at local and regional levels.

Links to CCSP Water Cycle Program:

| CCSP WC Question dealing with | GEWEX | IGWCO |
|---------------------------------------|-----------|-------------|
| Processes Responsible for Variability | P | S |
| Feedback Processes | P | S |
| Prediction Uncertainties | P | S |
| Consequences of Variability | S | S |
| Information for Decision Makers | P | P |
| | P-Primary | S-Secondary |

Summary:

- GEWEX and IGWCO provide strong support for CCSP, particularly in the areas of water cycle research and information for decision making in the water sector.
- The support of CCSP and the programs of its agencies such as NEWS (NASA Energy and Water Cycle Study), NOAA/NASA GAPP (GEWEX Americas Prediction Project) and DOE ARM (Atmospheric Radiation Measurements) continue to be essential for the development of GEWEX.

GEWEX and IGWCO Needs:

- Well defined studies are needed that will provide a basis for assessing the full value of Earth Observations and Climate forecasts in the water sector.
- Commitments from funding agencies are needed to move IGWCO from a "best efforts" exercise to a broadly supported implementation agenda that can assure timely and meaningful developments.

Contact Information

For details on GEWEX and IGWCO visit: www.gewex.org

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