

Northern Thailand, June 2007

Summary and Recommendations

Working Session on Climate and Water

3rd World Climate Conference, Geneva, Switzerland, September 1st, 2009



Please be reminded...

- 💧 **These recommendations are NOT covering what is required to be done by Water Sector per se in climate change adaptations.**
- 💧 **It essentially recommends what water sector needs from climate community, and how Global Framework for Climate Services could be useful to the water sector.**



Summary and Recommendations (1/7) Working Session on Climate and Water

- As the fundamental drivers of the hydrological cycle are affected by increasing climate variability and climate change, they will have large impacts on water resources availability and demand. Water is predicted to be the primary medium through which ~~early~~ **most** of climate change impacts will be experienced by various sectors and affect sustainable development, jeopardize economic development and poverty reduction efforts.



Summary and Recommendations (1/7 alternative) Working Session on Climate and Water

- Increasing human use of water has made much of the world water stressed today. Managing climate risks for human and ecological societies has thus attained an unprecedented urgency. Addressing these risks through innovation in policy and through provision of targeted information on seasonal to decadal and longer term climate variability has to be a key element for a suite of climate services. Innovations in how evolving climate information could be used to inform water management are urgently needed and should be stimulated.

SUBSTITUTE?



Summary and Recommendations (2/7) Working Session on Climate and Water

- 💧 **Increased water related risks associated with the changes in frequency of extreme events, such as flash floods, storm surge, and land slides, will put further stresses on these sectors. It is critical to understand the processes driving these changes, the sequences of the changes and their manifestation at different spatial and temporal scales.**





Summary and Recommendations (3/7) Working Session on Climate and Water

In the light of the assessment of present and future needs of climate information for water resource planning and management, in both developed and developing countries, the hydrologists, water planners, water managers and water supply experts attending the World Climate Conference - 3 agreed on the following main recommendations:




Summary and Recommendations Working Session on Climate and Water (4/7)

 **Hydro-meteorological monitoring networks should be maintained and further expanded to enable analysis of hydro climatic trends at the local level and the improvement in the accuracy of predictions, forecasts and early warnings.**

 **Further work is required for the detection and attribution of present-day hydrological changes; in particular, changes in intra-seasonal water availability and in the frequency and magnitude of extreme events.**






Summary and Recommendations Working Session on Climate and Water (4/7)

 **The continuing degradation of Alternative 1. hydrometeorological data bases has led to a crisis in the ability to develop analyses or information suitable for managing climate risk. Significant effort is needed to reverse this decline and to develop re-analysis products so that a diverse suite of climate information could be made broadly available across much of the world where historical data networks are poor.**

SUBSTITUTE?






Summary and Recommendations Working Session on Climate and Water (5/7)

-  **Climatic information with higher spatial and temporal resolutions, such as the catchment scale and monthly or weekly time scales are required to generate information of direct relevance to water resources planning and management.**
-  **Uncertainties in the future projections of hydrological quantities and water qualities should be reduced and quantitative accuracy should be enhanced, particularly for runoff regime changes.**
-  **More attention should be placed on assessments of climate changes impacts on water quality, sediment transport, aquatic ecosystems (not only temperature, but also altered flow regimes, water levels, and ice cover), and groundwater.**





Summary and Recommendations Working Session on Climate and Water (6/7)

-  **Improved seasonal to annual forecasting skills should be developed for better reservoir operation and emergency preparedness and response**
-  **Integrated hydrological and water resource models, considering natural and anthropogenic water cycles and coupled with crop models and reservoir operation models to provide more realistic impact assessment and support the design of practical adaptation measures should be developed and implemented.**
-  **Feedbacks of mitigation and adaptation measures for the concerned climate change on water sectors should be also assessed for proper policy making.**



Summary and Recommendations Working Session on Climate and Water (7/7)

 **Capacity development is essential for using probabilistic outputs and extracting and using essential information from climate projections, including the uncertainties, is required for water managers and users in other socio-economic sectors.**

 **Existing programs, initiatives, and organizations working in water and climate should join hands to facilitate the development of the Global Framework for Climate Services, particularly its User Interface Programme component.**



Summary and Recommendations Working Session on Climate and Water (7/7)



A re-allocation of current emphasis and effort by the climate community from work on anthropogenic climate change (“global warming”) to a focus on the characterization and prediction of seasonal, interannual to decadal variability is needed to facilitate strategies for managing climate risk in water systems and for adaptation to a changing climate.

**Late Proposal
from the Panel**



Summary and Recommendations

Working Session on Climate and Water (extra)

💧 **Anything to be added:**

(Lead Authors for the 4th Assessment Report of the IPCC, WG II, Chapter 3 “Freshwater resources and their management”)



Thank You!!