

International research Activities (Global Water System Project)

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One of international research activities related to Yellow River Studies is GWSP (Global Water System Project). The GWSP is a newly established joint project of DIVERSITAS, an international programme of biodiversity science, the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme (IHDP) and the World Climate Research Programme (WCRP). These four global change programmes form the Earth System Science Partnership (ESSP). Over the past few decades, environmental science has produced insights into the linkages, interconnections and interdependencies in the global water cycle. The various human and physical, biochemical, and biological facets of the cycle make up the global water system. This is especially true in Asian regions because of huge human impacts.

Japanese committee of GWSP was established in 2004 under the Science Council of Japan. There are 26 members and 3 advisers who are experts of IGBP, WCRP, DIVERSITAS and IHDP. The purposes of this Japanese committee of GWSP are to exchange the information of water related projects in Japan and to seek the possibility of financial supports for the joint studies.

Contrast between dry and humid condition/area is clear in Monsoon Asia, therefore the effect of climate change on the water cycle in regional scale is serious problem for the future water issues in Asia, such as shortage of water resources, water quality degradation, water hazard, and so on. Human impact on water cycle in Asia is another huge pressure for water issues because population increase and concentration occurs rapidly in Asian countries. There are many projects and organizations related to water issues in Asia, however, there is no network to integrate their knowledge. Therefore, Japanese committee of GWSP found that it is necessary to make a network of those research groups and projects in Asia.

The first GWSP-Asia meeting was held on August 29-31, 2005, in Kyoto, Japan. In this first meeting, we tried to make a network of water related studies and institutes in Asian countries, and to link the GWSP (Global Water System Project) to develop the understanding and knowledge on future potential human impacts and climate changes effect on water issues in Asia. We discussed new facts, new information, new methodologies, and new trends, related to water issues in Asian countries as well as

water conflicts, policy making process, and capacity building in Asia. Hot spots studies were also discussed to demonstrate both impacts of climate change and human activities on water cycle in Asia.

Throughout the discussion at the first GWSP-Asia meeting, we have reached to the following conclusions;

- (1) We recognized the following hot spots study areas in Asia;
 - (a) Effects of dam on water cycle, material cycle, and ecosystem in the basin,
 - (b) Water and biogeochemical flows in the coastal zone with high population, and
 - (c) Effects of land cover/use changes on physical and biogeochemical flows in the monsoon climate, and
- (2) We need common data bases for the hotspot study areas mentioned above and water related issues in Asia, and networks of interdisciplinary water studies of WCRP, IGBP, DIVERSITAS and IHDP, should be made among the Asian research groups to link with GWSP groups, and
- (3) Working groups on hotspot study area will lead to make first version of each database within a year, and a platform will be made soon to exchange information and establish database. RHIN will provide that platform.

The future activities of GWSP-Asia and GWSP-Japan will be announced at **GWSP-Asia home page**: <http://www.chikyu.ac.jp/USE/GWSP/GWSPasia.htm>

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First GWSP-Asia Meeting at Kyoto, August 29-31, 2005