

# Consortium-based Approach to Governance and Sustainable Water Management along the Han River

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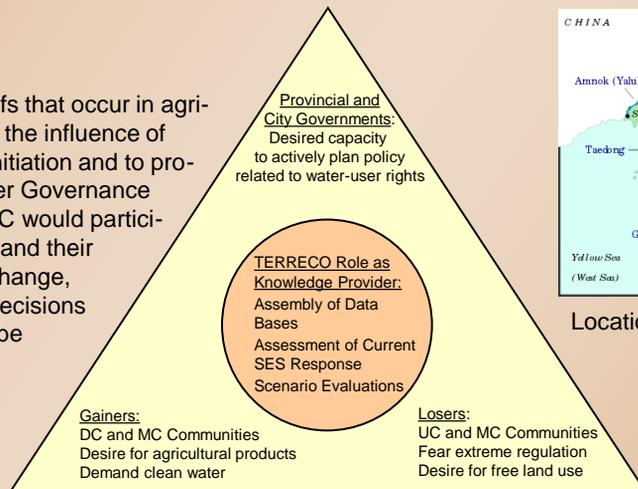


## Problem Statement:

The north (Bukhan) and south (Namhan) branches of the Han River with many dams and reservoirs pass through the provinces of Gangwon, Gyeonggi, and Chungcheongbuk as well as the special cities Seoul and Incheon and part of North Korea. Regulatory and property rights, however, currently exist in South Korea only with the national government, making it difficult to resolve water-related disputes among upstream (UC), mid-stream (MC) and downstream (DC) communities. The TERRECO project is viewed as an element that can aid, as a neutral information provider, the new creation of a consortium-based Han River Governance Committee (HRGC). An initial "Round Table" information exchange between TERRECO and the Gangwon Province governor's office is planned for fall of 2013. The activity is viewed as a practical application of the TERRECO paradigm, will be structured as an educational activity, and will contribute to the TERRECO course "Ecosystems, Resource Management and Sustainability."

## Overall Goals:

With scientific evidence related to the complex trade-offs that occur in agriculture versus water-related ecosystem services under the influence of climate and land use change, our goal is to aid in the initiation and to provide information from scenarios to a so-called Han River Governance Committee (HRGC). Stakeholders from UC, MC and DC would participate to solve multilateral disputes among communities and their residents along the Han River. Within this dynamic exchange, impacts and trade-offs tied to specific potential policy decisions would be clarified and required compensations should be estimated.



Location of Han River

## Methodology, TERRECO Linkages and Future Outlook:

A stepwise procedure is visualized with progressive development in complexity and breadth of the consortium, development of the HRGC and Round Table exchanges.

Step 1: Systematically define the important stakeholder groups, determine among these the "Gainers" and "Losers" involved in agriculture versus water quality issues, sort these according to their role in UC, MC and DC.

Step 2: Clarify the economic trade-offs associated with clean water. What actions could be taken? What losses in revenue are associated with these?

Step 3: Evaluate reforestation, change in land use, and technical measures. Who and how much could be paid for related gains in ecosystem services?

Step 4: Examine potential policies and incentive mechanisms. Determine whether equitable sharing of costs and distribution of benefits is possible?

Step 5: Establish a working Han River Governance Committee including the central government, 5 provincial and city governments, and critically important NGO/NPO (modelled after Potomac River Committee in USA).

### Development of the HRGC Activities at Provincial Level

Survey national water experts and policy-makers at all levels via Analytical Hierarchy Process (AHP)

Survey stakeholder groups with respect to their willingness to restrict activities  
Determine gains and losses

Consider scientific, social, and political perspectives with respect to compensation for losses.

Consider transferable / tradable development rights and direct payments as incentive measures

Provide a new basis for property rights related to the use of water

### Relation to TERRECO Education and Research

Include critical stakeholder groups into agent-based modelling for Soyang Watershed

Quantify economic trade-offs and provide sensitivity analyses in consultation with government officials

Conduct and evaluate scenarios in consultation with government officials

Evaluate potential consequences of new policy measures

Function as a neutral information provider

Sustainable resource management requires compromises through which equitable sharing of costs for acceptable water quality is established. With equitable sharing of costs, benefits from water use will be distributed among upstream, mid-stream and downstream communities equally. By providing information from simulation tools developed for the Soyang Watershed, TERRECO can provide helpful information to policy makers. While Soyang Watershed is only a small part of the Han River system, its function as an SES involves in an abstract context the various stakeholders overall, their interests and their concerns.