



# **WG1.14: Development and application of river basin simulators**

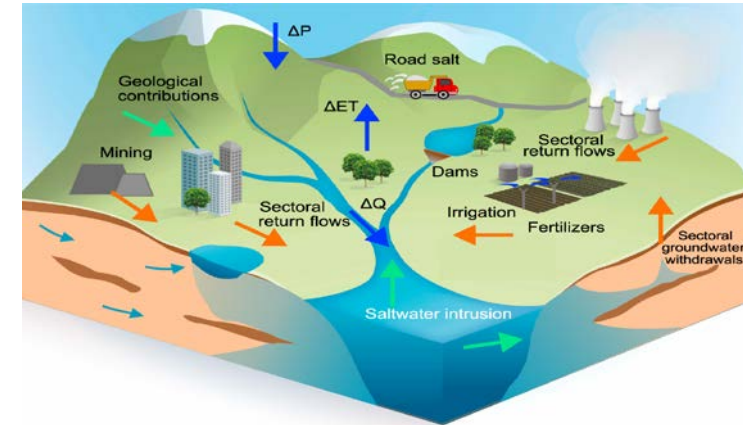
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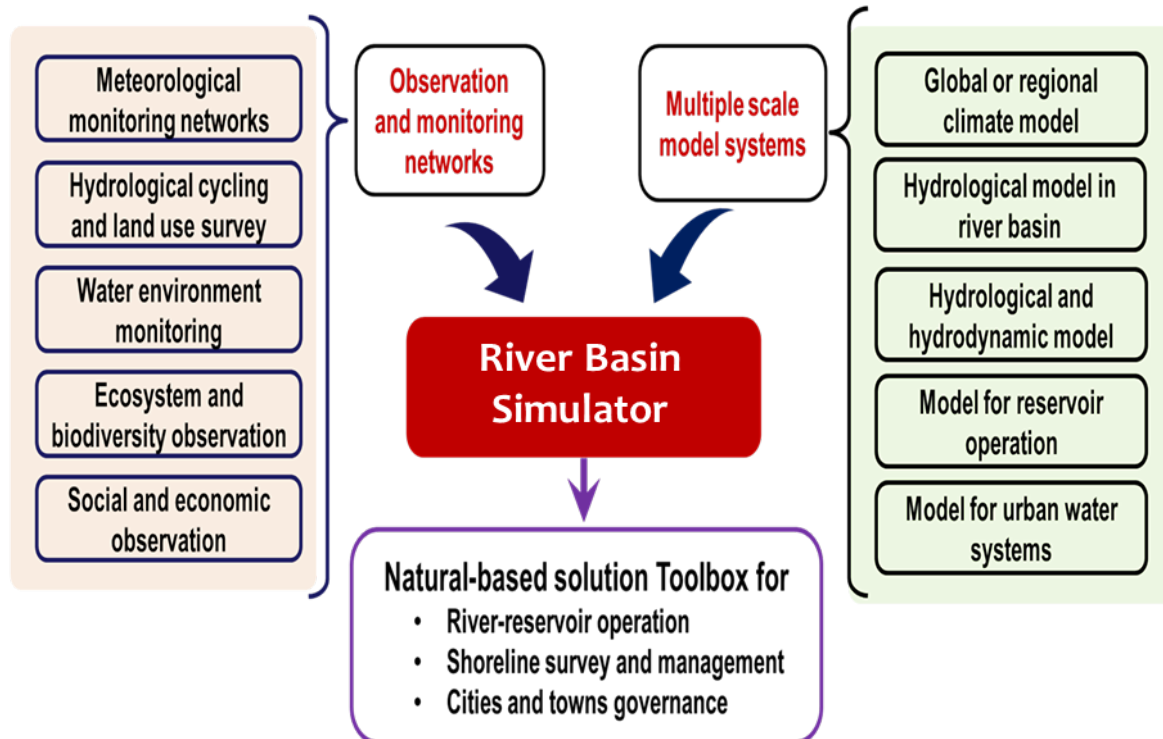
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# WG1.14 : Development and application of river basin simulators

River basin is a basic natural unit linked with water-soil-air-ecology-society, and also water managing system for the local peoples



## Framework of River Basin Simulator



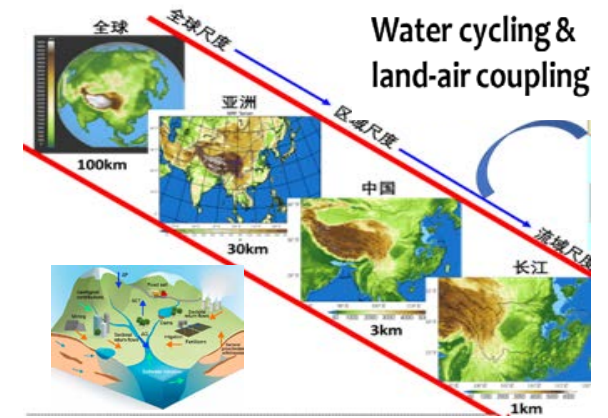
◆ **River basin simulator (RBS)** stands as a simulation system driven by data set & hydrological knowledge based on the technology of *digital twin basin*.

◆ **There are two pillars in RBS:** One is observation, and another is the multiple scale modellings for the applications

◆ **Through its development,** it plays a key role in supporting integrating natural hydrology with socio-hydrology and fostering sustainable development

# GOALS and WORKPLAN

1. Supporting Theme 1: **HELPING** with global and local interaction
2. Developing tool to build a bridge from Change (Panta Rhei) to Solution(**HELPING**), including understanding of hydrological processes, utilization of advanced hydrological models, and practical application of socio-hydrology insights



River Basin Simulator (RBS)

Theme 1: **HELPING** with global and local interactions

Theme 2: **HELPING** with holistic solutions for water security

Theme 3: **HELPING** with cross-cutting goals

- Short term : **Developing RBSs for scientific understanding of Theme 1** and assisting Theme 2 and 3 .
- Middle term : **Supporting the integrated water resources management**, such as large river basins in Asia (e.g., Yangtze, Yellow, Lancang-Mekong), Africa (e.g. Nile) , USA , Canada, South America (e.g. Amazon), Europe, etc.
- Long term: **Establishing a robust tool for ensuring water security and HELPING's goal of river basins in the world.** These outcomes hold the potential to significantly shape river basin master planning and integrated water resources management etc.