

INOWAS Junior Research Group

Innovative web-based decision support system for water sustainability under a changing climate

OBJECTIVES

Prognosis of the consequences of the climate change on sustainability of water resources, biodiversity, soil degradation, water scarcity and agricultural products; development of sustainable strategies for the minimization of the impact on soil and water resources.

Specific objective: Development of an innovative web-based decision support system (DSS) for planning, design and management of artificial groundwater recharge.

Qualification ■
Junior research group with multidisciplinary profile (hydrology, hydrogeology, environmental informatics) and strong commitment to advanced academic qualification. International network of young scientists and experts initiated through a series of workshops and summer schools.

Knowledge ■
Understanding the influence of hydrogeological and hydrological parameters on water balance in artificial recharge systems at different system scales. Collection of comprehensive data on groundwater recharge and compilation of a dynamic knowledge base.

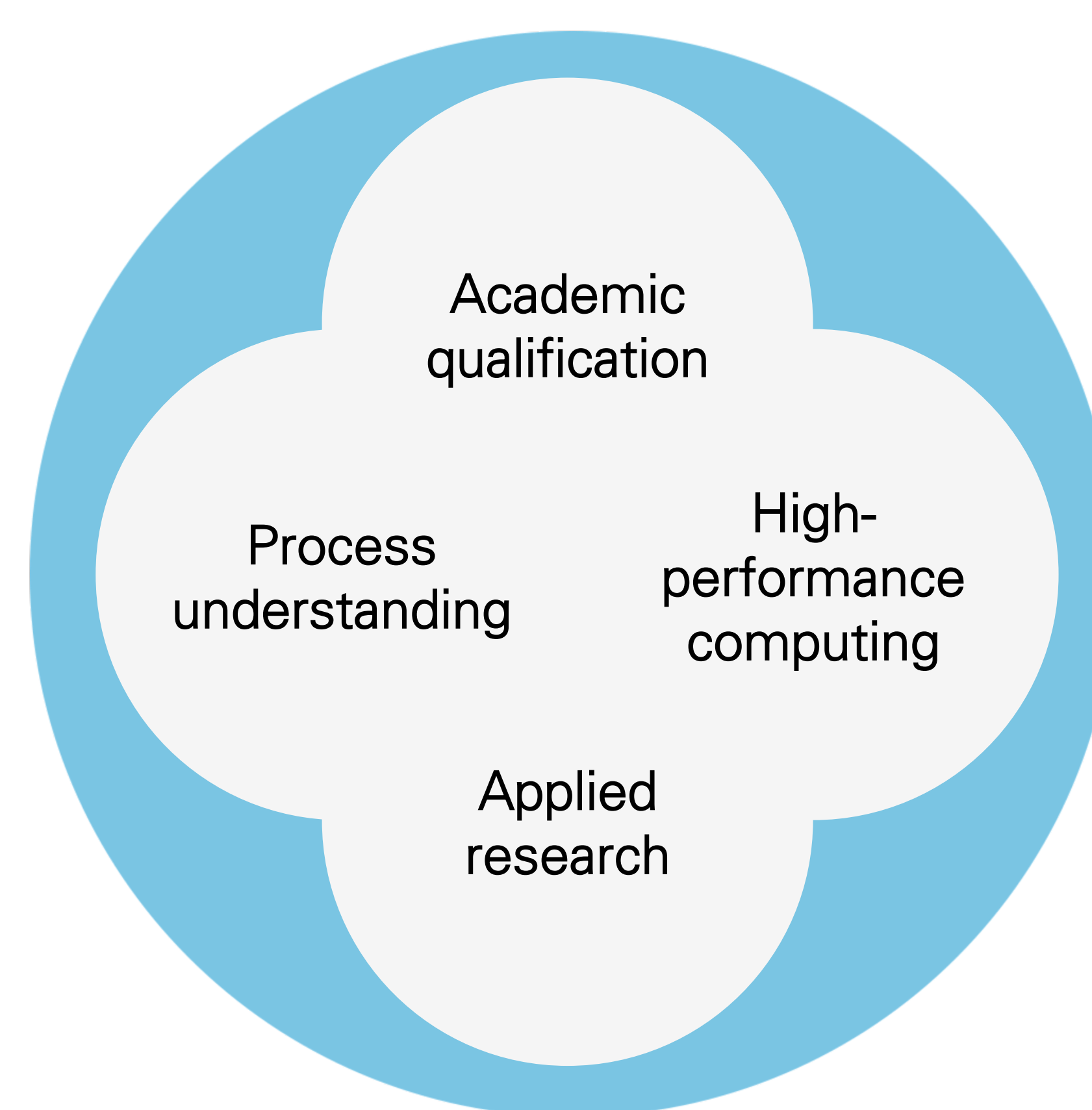


Figure 1. The four project pillars

Computing ■
Combination of web-based technologies and GIS functionality with process-based simulations for the development of a new decision support system. Interactive web-based platform supported by a dynamic knowledge base and complex scenario analysis tools.

Applications ■
Laboratory and test-field scale infiltration units for the prediction of the efficiency of managed groundwater recharge under different process and site-specific conditions. Verification and validation of computer-based simulations at selected locations ("demo sites").

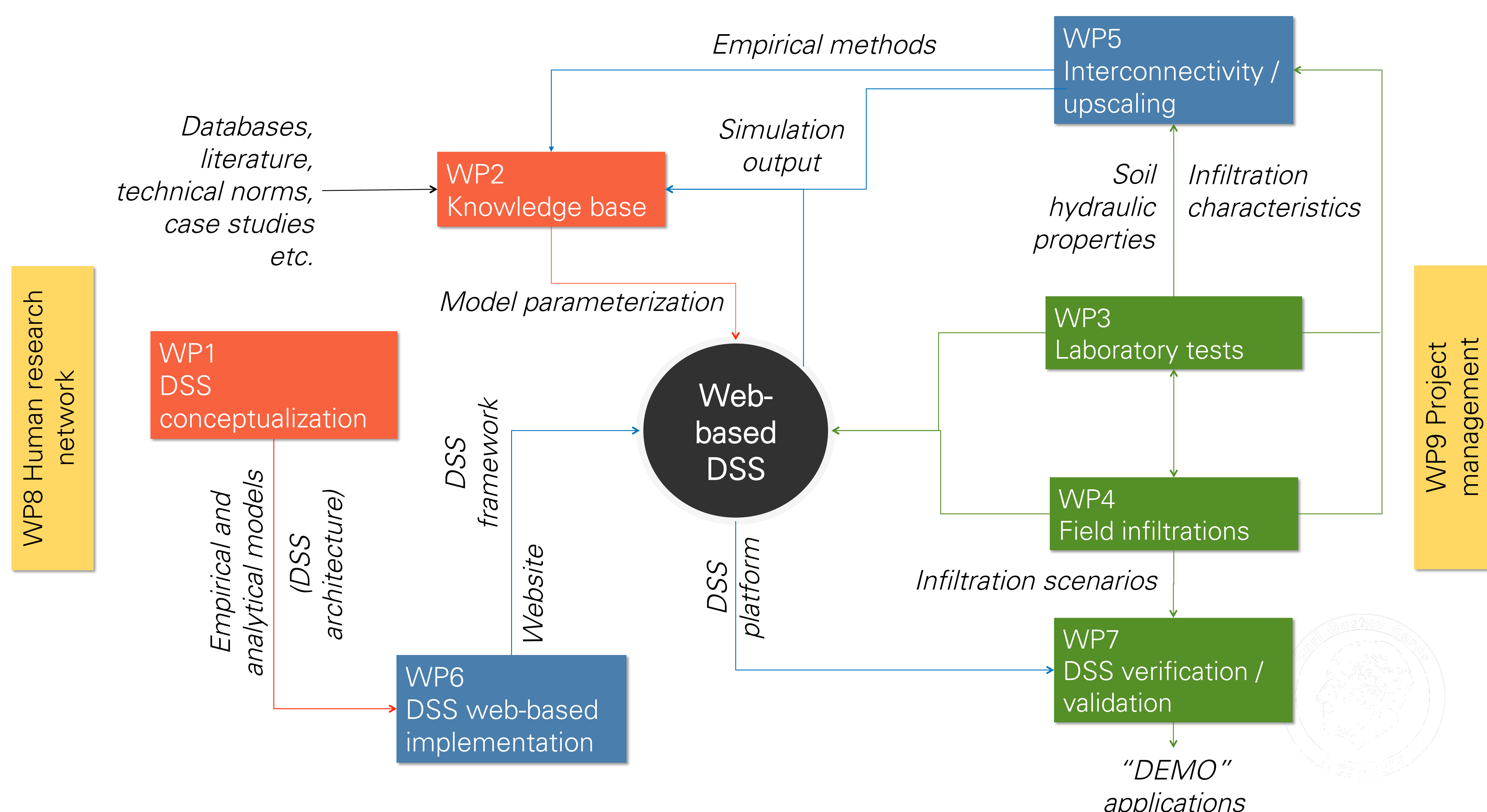


Figure 2. General project architecture

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