

INTEGRATED SOLUTIONS FOR SUSTAINABLE DEVELOPMENT IN THE MEKONG DELTA – LAND, WATER, ENERGY AND CLIMATE –

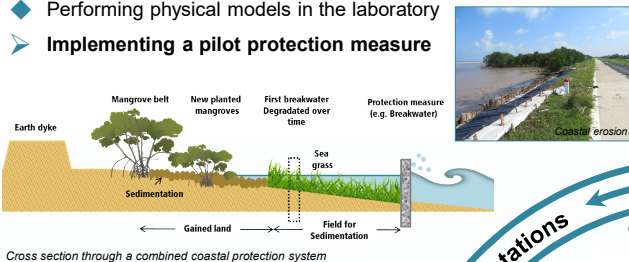


ViWaT-ENGINEERING



Coastal protection and land reclamation

- Development of a sustainable coastal protection concept based on field analysis of waves, currents, wind and sediment dynamics
- Evaluation of coastal protection concepts by numerical modeling
- Performing physical models in the laboratory
- Implementing a pilot protection measure



Renewable energy resources and sustainable construction materials

- Estimation of potential energy gain from wind and solar power to provide sustainable energy for the construction/operation of counter measures
- Development of alternative adapted and sustainable building materials
- Use of alternative adapted building materials for the construction of coastal protection measures

Challenge

- Only fine grained material is available in the Mekong Delta
- Expensive import of cement and aggregates from other regions



Groundwater and aquifer dynamics

- Screening and characterization of...
 - Land subsidence (satellite based)
 - Aquifer properties
 - Groundwater quality (pollutants, salinization)
- Implementation of...
 - In-situ, online groundwater monitoring systems
 - Land subsidence observation wells
- Development of a hydro-geological groundwater and aquifer model
- Identification of areas with the most urgent need for groundwater substitution

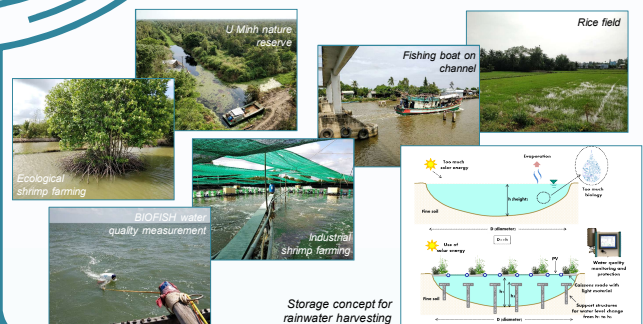


Threats to the Mekong Delta



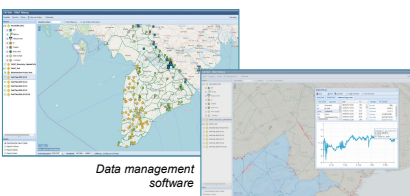
Surface water dynamics and utilization potential

- Developing a water balance model
- Screening water quality of different surface water resources (salinization, pollution, germs, xenobiotics, algae)
- Implementation of online & automated surface water monitoring systems
- Development of utilization concepts (treatment, distribution, storage, ...)
- Identification of sustainable water resources to substitute groundwater



Data management

- Development of a data management software prototype with interfaces for all project partners and stakeholders



Capacity development

- PhD program together with KAAD (support of five Vietnamese PhD students)
- Guiding and training courses for Vietnamese partners
- Summer school in Vietnam
- Promotion of PhD students by the KIT Graduate School for Climate and Environment



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