



Project Fact Sheet of the Sino-German Project



Challenges in the Yellow River Delta region

The Yellow River Delta is one of the three major Chinese river deltas, located in the north-east of Shandong province. The Yellow River Delta faces numerous challenges in the context of global change. Impacts of industrial exploitation, urbanization, agricultural transformation, and climate change can all be felt and observed in the delta.

A favourable geographic location and natural resource deposits make the Yellow River Delta region one of the most important industrial centres in North-East Asia. The delta hosts China's second-largest oil field and the growing city of Dongying, surrounded by intensive aqua- and agriculture. On the other hand, large protected wetlands in the delta are a particularly important breeding and resting place for migrating birds, many of which are under protection, attracting thousands of tourists annually.

The region is struggling to find an equilibrium between economic development on the one hand and the need for natural resource protection on the other hand. The potential conflicts and the clearly existing need for action are explicitly described in the "Yellow River Delta Development Plan" (Government of the province Shandong, 2009). The DELIGHT Project contributes to this endeavour.

Project Summary

- Sino-German research project on environmental protection, human dynamics, and water research in the Yellow River Delta
- Contribution to climate protection, Integrated Land-, Water and Coastal Zone Management, and the development of innovative services and technologies
- Implementation of the "Delta Information System for Geoenvironmental and Human Habitat Transition"
- Funded by the German Federal Ministry of Education and Science (BMBF) and the Chinese Ministry of Science and Technology (MOST)

Key issues in the Yellow River Delta

- Permanent threat by floods and storm surges
- Increasing water shortage during drought periods
- Salinization of cultivable land and decrease of vegetation health
- Threat of coastal erosion and loss of important wetland ecosystems
- Rapid growth of population and industrialisation
- Severe environmental degradation and water pollution

Objective of the DELIGHT project

The project supports local stakeholders within the Yellow River Delta in implementing the regional development plan in the upcoming years, by providing information tailored to the needs of the important stakeholders in order to substantially support their planning processes.

An innovative inter- and transdisciplinary information system to support “Integrated water, land and coastal resource management” within the Yellow River Delta will be developed and implemented, customized to the needs of the identified Chinese stakeholders. The information system represents, on the one hand, a knowledge cluster which is built up for the Yellow River Delta based on the research fields of the project; and on the other hand it represents a physically existent information system.

The information system is a delivery medium for all information products, maps, reports, statistics, recommended procedures, and knowledge developed within the project.

In the context of the DELIGHT project, research questions concerning the following fields are addressed and answered:

- Environmental monitoring and dynamics of the Yellow River Delta and lower reaches
- Water quality and pollution threats
- Hydro- and morphodynamics, ground water and flood risks
- Trends and risks of urbanisation
- Capacity development and training
- Information system design and data integration

Comprehensive recommendations and guidelines for actions derived from the research findings will be made available for users and stakeholders.



Project Goal

The goal of the DELIGHT project and its large Sino-German consortium is to jointly contribute to climate protection, Integrated Land-, Water and Coastal Zone Management (ILWRM, ICZM), and the development of innovative services and technologies in the Yellow River Delta. This will be achieved through joint research and engineering in multidisciplinary fields from natural- and socio-economic science, the development of adaptation strategies, as well as the design and implementation of the “Delta Information System for Geoenvironmental and Human Habitat Transition”: DELIGHT.

Project Partners

Germany

- German Aerospace Center, German Earth Observation Center (DLR-EOC)
- Brockmann Consult GmbH
- plan + risk consult GmbH
- Hydromod Service GmbH
- Sachverständigenbüro für Luftbilddauswertung und Umweltfragen (SLU)
- Franzius Institute (FI), University of Hanover
- Helmholtz Centre Potsdam – German Research Centre for Geosciences (GFZ)
- Centre for Development Research at the University of Bonn (ZEF)

China

- Institute of Geographical Sciences and Natural Resources Research (IGSNRR), Chinese Academy of Sciences (CAS)
- State Key Laboratory of Resources & Environmental Information Systems (LREIS)
- Institute of Remote Sensing Applications (IRSA), CAS
- Yucheng Comprehensive Experiment Station, CAS
- Hohai University, Nanjing
- Institute of Urban and Environmental Studies (IUE), Chinese Academy of Social Sciences
- Dongying Sanming Forestry Industry Development Ltd. Co.

Funding bodies

- German Federal Ministry of Education and Science (BMBF)
- Chinese Ministry of Science and Technology (MOST)

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Further Information on DELIGHT is available on the project website: www.delight.eoc.dlr.de