

# WATER MANAGEMENT IN SALINE RIVER DELTAS **SECURES FRESH WATER SUPPLY**



## *Summary*

*The agricultural sector in Zeeland, located in the river delta of Rhine and Meuse, is confronted with growing impacts of freshwater shortage and salinization. The impacts of the saline groundwater in the area on the agricultural sector could, in the future be exacerbated by climate change and sea-level rise. The province of Zeeland, the water board, municipalities, as well as the agricultural sector consider a reliable freshwater supply as one of the keys for future development and sustainable growth of the region.*

*In Zeeland, new water management strategies and operational technologies are being developed and tested. This includes measures to improve the use of existing fresh groundwater resources and to create new freshwater reserves through enhanced infiltration.*

## *Main Benefits*

### **General aspects**

- » Increased regional self-sufficiency and reduced dependence on external freshwater supplies.
- » Better awareness and understanding of the geohydrological system and effects of climate change and anthropogenic activities.

### **Economical aspects**

- » Increased turnover of farmers due to less salt or drought damage to crops.

- » Decreased costs of freshwater.
- » Export possibilities of innovations/solutions delta areas worldwide.

### **Innovative aspects**

- » Showcasing of different (theoretically tested) measures under real field conditions.
- » Building with Nature: utilization of natural processes in engineering solutions.
- » Replicating local measures provides a promising solution for a whole region.
- » Efficient operational water and salt management in low-lying areas: monitoring-sensors and technologies, Airborne EM measurements.
- » Replicating local measures provides a promising solution for a complete region.

## *Boosters for Implementation*

- » Knowledge of the physical system and of impacts of climate change and anthropogenic activities.
- » A combination of fundamental and applied research.
- » Networks between knowledge institutes, private sector, government and end-users .
- » Participation of farmers.
- » A joint understanding and mutual trust.

## *Barriers for Further Implementation*

- » Unclear distribution of responsibilities in freshwater supply.
- » Lack of knowledge on possibilities for up scaling of local measures: socio-economical benefits and hydrological and geological possibilities.
- » Conflicting interests (agriculture vs. nature).
- » Physical limits in geohydrological possibilities (e.g. total amount of fresh water available during seasons).

## *How to Get Over Barriers*

- » Explore possibilities for up scaling of local measures.
- » Clarify responsibilities and distribution of benefits.
- » Promote participation of all parties involved.

## *Policy Recommendations*

- » Promote field-testing of measures for agricultural freshwater supply.
- » Support the up scaling of proven technologies to other regions in Europe and worldwide: provide the link!
- » Support cooperation and local initiatives for joint local freshwater supply solutions

## *More Information*

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