

Freshwater Measures on Schouwen-Duiveland

The Living Lab Schouwen-Duiveland innovation network is working on an approach to freshwater supply with a view to sustainable and vital agriculture. Over the past five years, we have carried out many solution-oriented projects, gained practical experience with many methods and techniques, and shared newly developed knowledge in meetings, excursions and working visits. This brochure shows the freshwater measures that have been implemented on Schouwen-Duiveland.

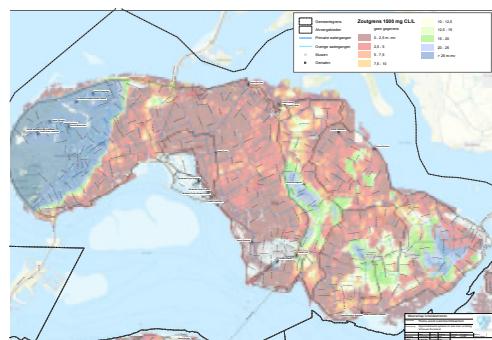


Schouwen-Duiveland (Luchtfotografie Edwin Paree)

Soil conditions, initial situation, and challenges

The island of Schouwen-Duiveland is entirely dependent on rainwater and the available fresh water in the subsoil for agricultural freshwater. The deep groundwater is salty. The island is almost entirely surrounded by salt water and is not connected to the main freshwater system. During dry periods, it is not possible to supply fresh water and flush ditches.

'Koudekerkse inlay' with Plompe Toren
(source: beeldbank.zeeland.nl; [Sky Pictures])



Geological soil conditions of Schouwen-Duiveland (Freshem map), showing the freshwater-salt conditions in the subsurface.

Climate change presents us with issues such as desiccation, salinization of shallow groundwater and surface water, and the availability of sufficient fresh water for agriculture and nature. We are increasingly faced with longer dry periods, high temperatures and more peak rainfall. In addition, much of the "annual" rainwater falls at times when agriculture does not immediately need it.



Effect on crops caused by too much water on the field.

Effects of drought on crops in summer 2020

Freshwater measures and area-based approach

We tackled the above challenges in joint projects with educational institutions, agricultural entrepreneurs, government bodies and research institutes. This involved measuring the EC content of waterways, soil and water coaching, trying out non-inversion tillage, different types of green manure, field labs with trials and tests in the field of green and blue measures, testing new drainage systems and developing new knowledge and solutions that have been tested and monitored in practice. This gave us a better understanding of the soil and water system and taught us about area-based approaches and advice on policy and governance.

The agricultural sector is working with external experts and soil and water coaches on freshwater measures. For example, by actively improving soil life, saving water in freshwater basins, using water wisely, installing weirs and constructing level-controlled or double drainage systems, and testing and monitoring these in practice. Furthermore, the sponge effect of the landscape is being promoted and research is being conducted into whether and how the effluent from the Waste Water Treatments can be used responsibly for agricultural purposes.



Weir at work (De Koeijer)



Newly constructed freshwater basin (Rentmeester)



Technical system for drainage (De Koeijer)



Water System Fieldlab Burghsluis

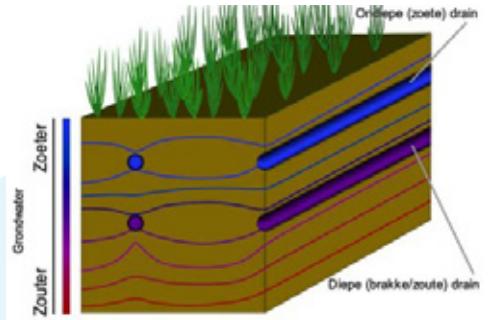


Diagram innovative double drainage (Deltares)



Nature-friendly bank of a ditch (Dieneke Klompe)

More information

www.livinglabschouwen-duiveland.nl



www.linkedin.com/company/living-lab-schouwen-duiveland/