

Sediments, creating a vibrant estuarine habitat to protect the Scheldt hinterland against flooding

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Conference theme number(s): 2 / 6

Introduction: A combination of contractors working on the creation of estuarine ecosystem – strange?

Indeed, as the main deliverable seems to be a return to a fully explored natural tidal flood plain by depoldering two low-lying land sides along the Scheldt estuary. Two polders at the Belgian-Dutch border are being returned and re-integrated in the estuarine environment of the river Scheldt: the Hedwigepolder (295 ha) on the Dutch side and the Prosperpolder (170 ha) on the Flemish side. It has taken some time to realize – due to environmental consent and intensive stakeholder interaction – but we are proud to present the integrated results of our concerted efforts over the last years.

Methods: As part of the Development Sketch 2010, part of the Scheldt treaties that were concluded at the end of 2005 between Flanders (Sigma plan) and the Netherlands (Western Scheldt Nature Package), this “depoldering” project creates a mudflat and salt marsh area as an extra flood buffering space along the river Scheldt - protecting the hinterland from flooding. Trenches and creeks will be dug in the flood plain to initiate and facilitate nature development: hydro- and morphodynamics induce a series of interactive ecological processes of vegetation growth, benthos development and species establishment.



Fig. 1: Hedwigepolder- Prosperpolder- Design concept

With the available sediments, a primary flood defense dike of about 5 km is built inland. Extensive earth works create channels and creeks in the polder area, levels the existing and realize a dedicated primary

flood protection more inland. Dedicated nature development works (including breeding bird islands) are fully explored in the flood plain.

Only a small part of the total sediment balance volumes is removed as contaminated and/or unusable soil. All excess “good” soil is used for the construction of a panorama hill inside the polder.

As a final stage, the existing Scheldedijk is dug away – restoring a direct connection between tidal river and its floodplain.

Results: Bringing together different key enablers facilitates a successful fully integrated approach of the project: flood protection, nature development, recreational use and research facilities (living lab) cover highly relevant social challenges in the estuarine environment of this part of the river Scheldt – targeting an efficient working together on a more safe, accessible and natural Scheldt.

Given the specific transboundary sensitivities, stakeholder engagement was crucial to implement political treaties into practical site realization and current operational collaboration to monitor and manage the tidal nature reserve “Grenspark Groot-Saeftinghe” (together with the nearby nature reserve Drowned Land of Saeftinghe).



Fig. 2: Hedwigepolder- Prosperpolder connected to the river Scheldt.

References:

- [1] Antea Group (2013) Definitief MER Ontwikkeling van intergetijdengebied Hedwigepolder en Prosperpolder (Provincie Zeeland).
- [2] De Vlaamse Waterweg (2023) Nieuwsbrief “Eindfase in het Hedwigepolderproject”.