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sustainable co-evolution of the natural and built environment along sandy shores

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ShoreScape: sustainable co-evolution of the natural and built environment along sandy shores

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Introduction

The land-sea interface is a very attractive location for humans to settle. In the case of low lying, sedimentary coastlines this can be a risky location, as these shorelines are inherently dynamic in nature. Accelerating rates of relative sea level rise will increase coastal erosion, creating world-wide growing demands for coastal protection along urbanized shores. Starting point of this project is that the key to *sustainably* adapt to this situation is to be found in smart, pro-active sediment management using ‘building-with-nature’ (BwN) approaches, rather than in traditional reactive approaches involving expansion of static, hard coastal defense structures.

The ShoreScape project (2017-2022)

An element that has been overlooked so far in current BwN approaches, is the interaction with the built environment at the land-sea interface, creating new conditions for both sediment dynamics and settlement. Leaving this interaction unnoticed, these elements may be affecting each other adversely. A better understanding of their interaction offers the potential to create new ‘coastal buffer zones’ combining flood defense, urban development, and spatial quality (Figure 1).

The ShoreScape project (starting in 2017) aims to develop knowledge, tools and design principles for dynamic occupation of the land-sea interface, to enhance Building with Nature processes and exploit its potential for the spatial development of multi-functional coastal environments – *shorescapes*.

The sandy, dune-aligned west coast of the Netherlands is employed as a Living Lab to study interaction of sediment flows and building configurations in the beach-dune environment, both experimentally and through modelling (subproject A at University of Twente), and to develop design principles for dynamic occupation of the land-sea interface that support these natural dynamics (subproject B at TU Delft).

Project partners

Besides University of Twente (project co-ordinator K.M. Wijnberg) and TU Delft, project partners, are Deltares, Wageningen Marine Research, Hoogheemraadschap Hollands Noorderkwartier, Rijkswaterstaat, Witteveen&Bos, and H+N+S Landscape Architects.

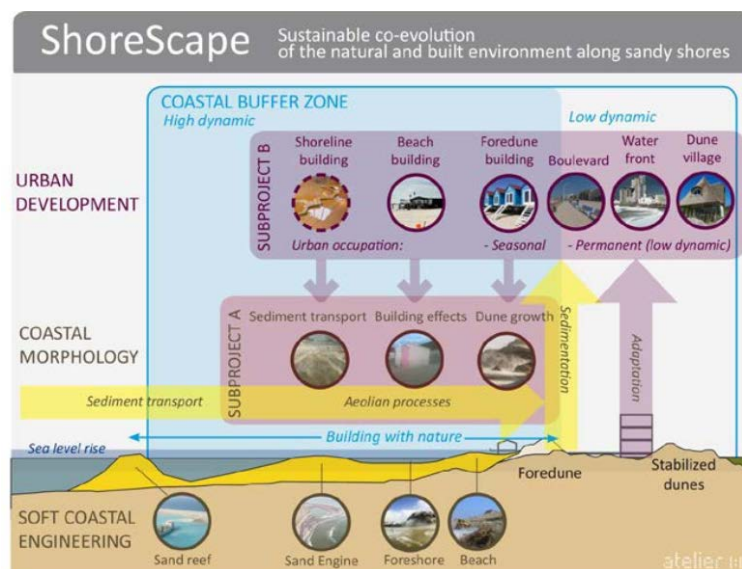


Figure 1: Illustration of the ShoreScape concept.