

Abstract Carola van Gelder Maas, Innovative adaptation strategy for the Dutch coast: the Sand Motor

Introduction

The coast between Ter Heijde and Kijkduin in the Netherlands acquired a new landmark in 2011: the Sand Motor, a large artificial sand bank in the form of a peninsula. The wind, waves and currents have been given a free hand to spread the sand along the Delfland coast between Hook of Holland and Scheveningen. The Sand Motor is important as a trial for innovative coast maintenance. From the start, dozens of researchers from different universities and research institutes have been following every step of the development of the Sand Motor. How quickly does sand spread along the coast? To what extent does the Sand Motor contribute to coastal protection? How will nature develop in the shallow sea, on the beach and in the dunes? Will more fish and birds settle on the new coastal strip? And what effect will the new landscape have on leisure activities?

Building with Nature

The Sand Motor consists of 21.5 million cubic metres of sand. Dredging vessels picked up the sand ten kilometres offshore and deposited it to form a hook-shaped peninsula between Kijkduin and Ter Heijde. The Sand Motor will gradually change shape before it is ultimately transformed into a new dune landscape and a wider beach. This approach to 'building with nature' allows the coast to extend in a natural way.

Unique in the world

The Sand Motor is the first experiment of its kind and can be seen as a possible innovative adaptation strategy. With this pilot project, the Netherlands is continuing to set the standard in water management. In 2011, we are doing this by actually working with water, instead of against it. If the Sand Motor works as we expect, the concept can be rolled out to other places in the Netherlands and the rest of the world.

Research

Rijkswaterstaat and scientists are studying how the Sand Motor develops to see whether this innovative method for coastal protection does indeed work. Measurement data are also needed to manage the Sand Motor properly. One example is mapping out new currents so we know where it is safe to bathe. But we also want to see which animals visit the Sand Motor, and how visitors spend their leisure time on the Sand Motor.

Nature and recreation

The Sand Motor leads to the creation of a unique natural and recreational area that the wind and the sea currents will transform continuously. The area is an appealing habitat for a range of flora and fauna. Visitors can enjoy the experience of the natural surroundings on and around the Sand Motor.

Initial conclusions

Five years after the Sand Motor emerged from the waves, the results of the first major evaluation have been published. The conclusions are positive. The Sand Motor has indeed resulted in a wider coastal zone. The sand has gradually been spread to the north and south by the wind, waves and currents. The area increasingly resembles dynamic coastal areas like those we know on the Friesian Islands. A variety of plants, birds and other animals have settled in the new, attractive coastal landscape. The area also plays a major role as a leisure location for nature lovers and active athletes. The Sand Motor has become an internationally renowned icon of innovation.