

From sand to land



The Sand Engine 18 January 2011

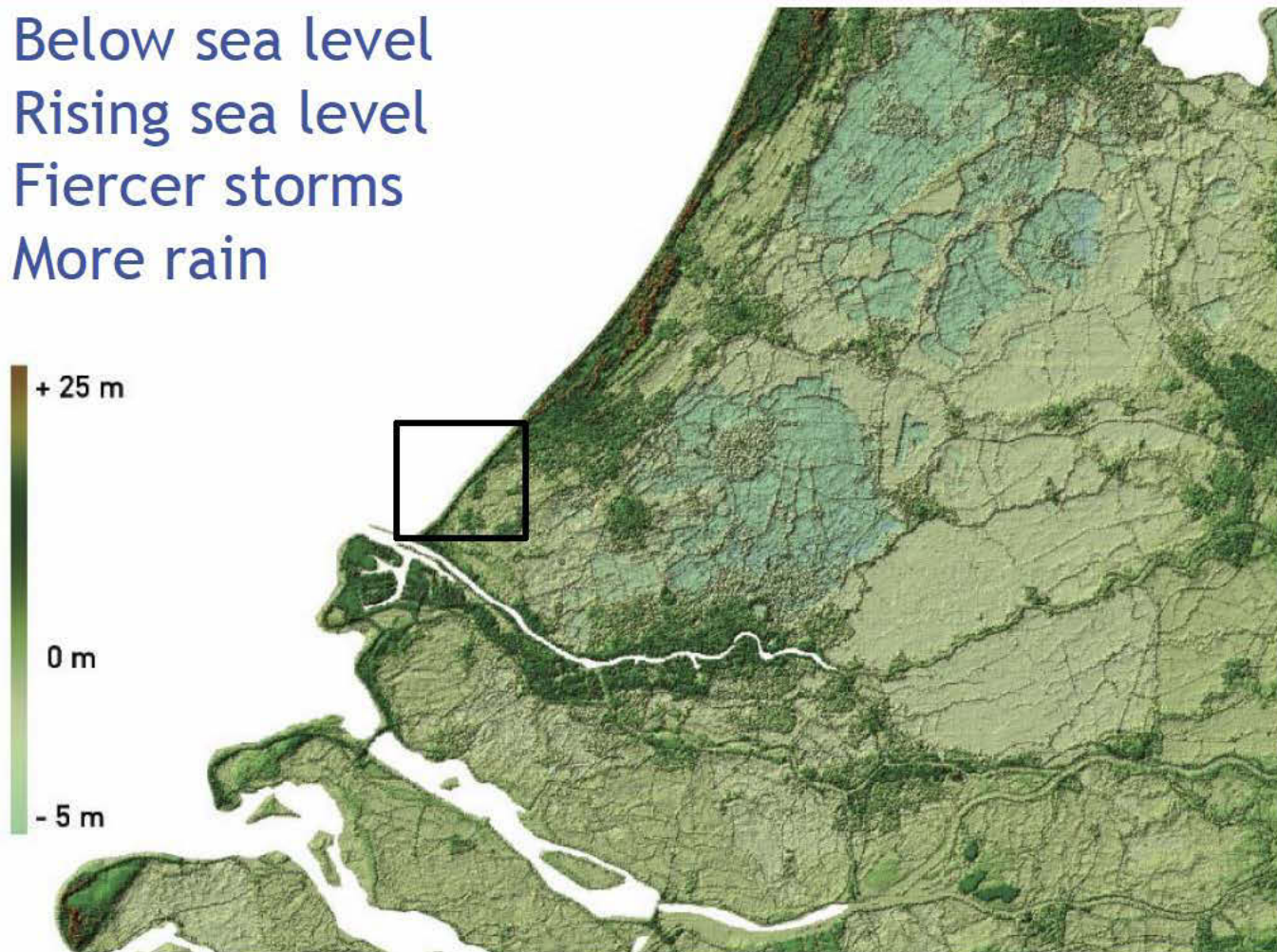
Martin Baptist, EcoShape



Brief history

Province of Zuid-Holland

Below sea level
Rising sea level
Fiercer storms
More rain



Location Delfland



Sand nourishments

Types: beach / foreshore / mega-nourishment



Aim of the Sand Engine pilot

Short term

Innovation

Knowledge development
and dissemination

More efficient
coastal maintenance

Room for nature
and recreation

Long term

Protect nature and
environment in
the Randstand



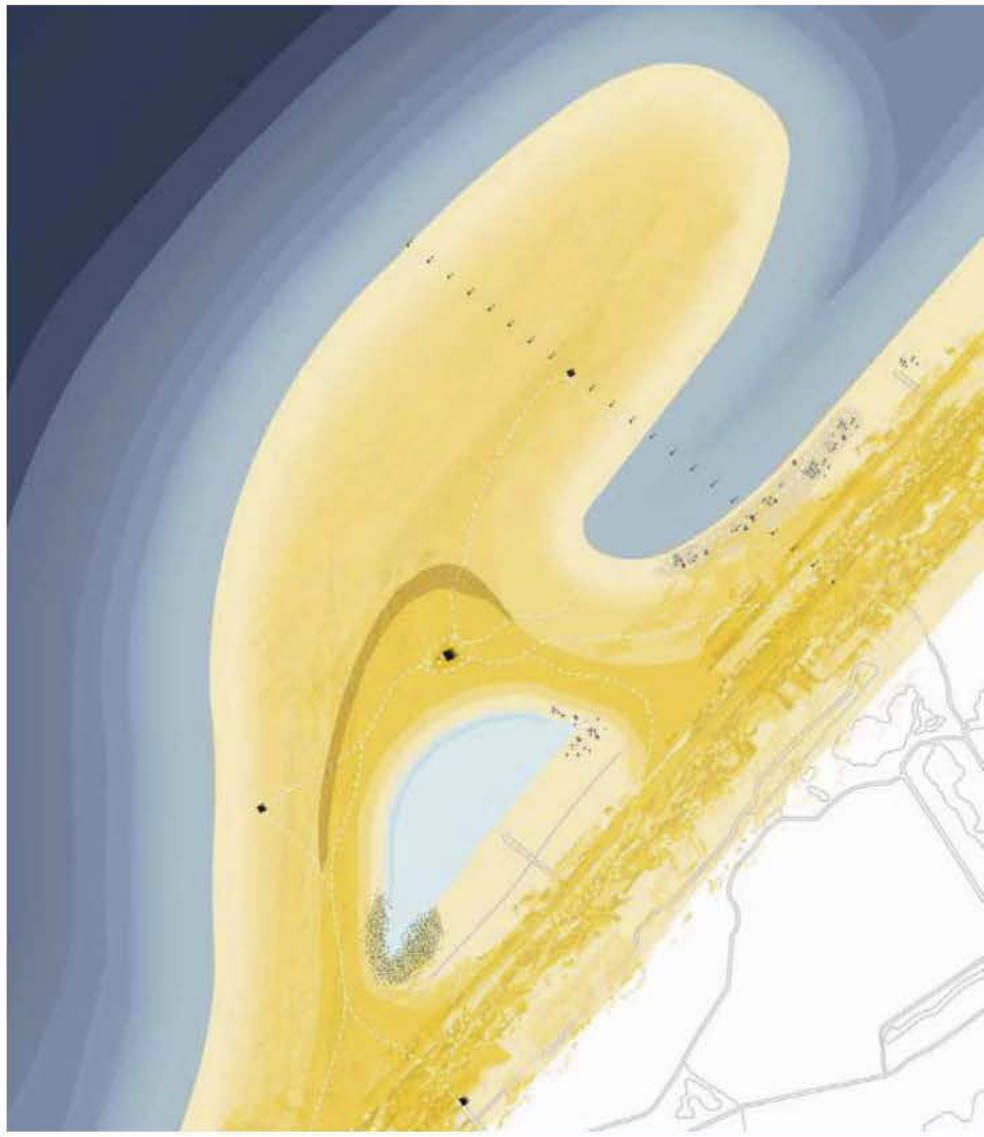
“The Sand Engine”



20 million cubic metres sand = 100 hectares land



Design Sand Engine

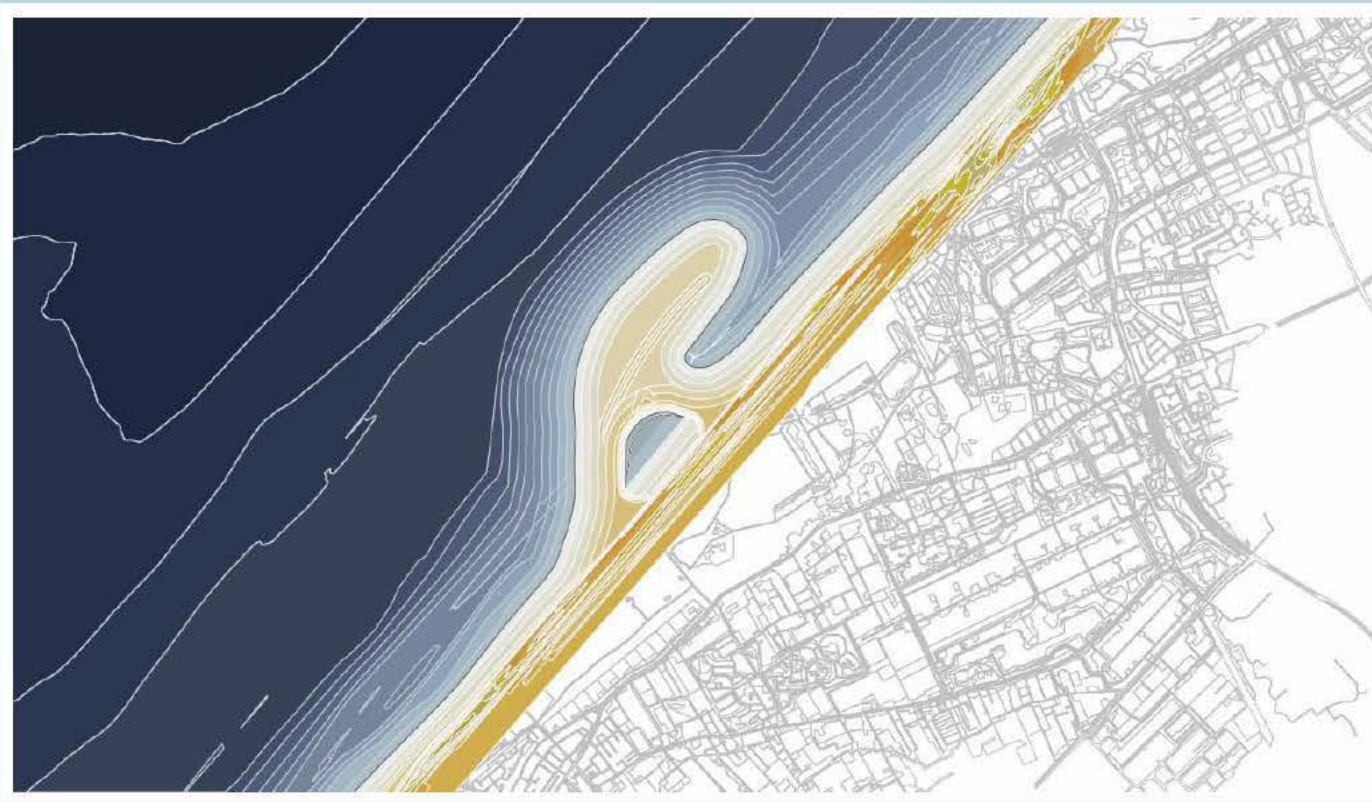


1. Diverse habitats
2. Recreation
3. Flood safety



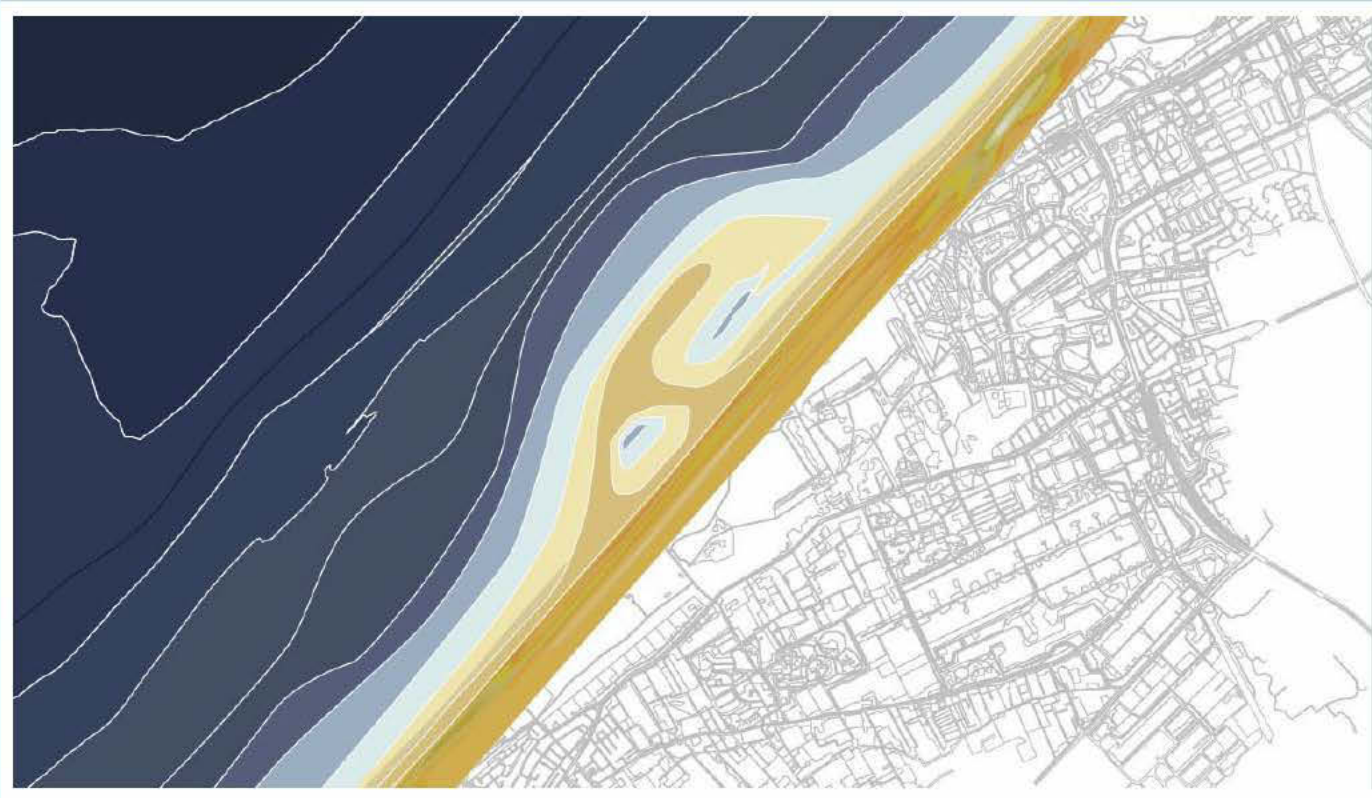
Morphology

Start of construction



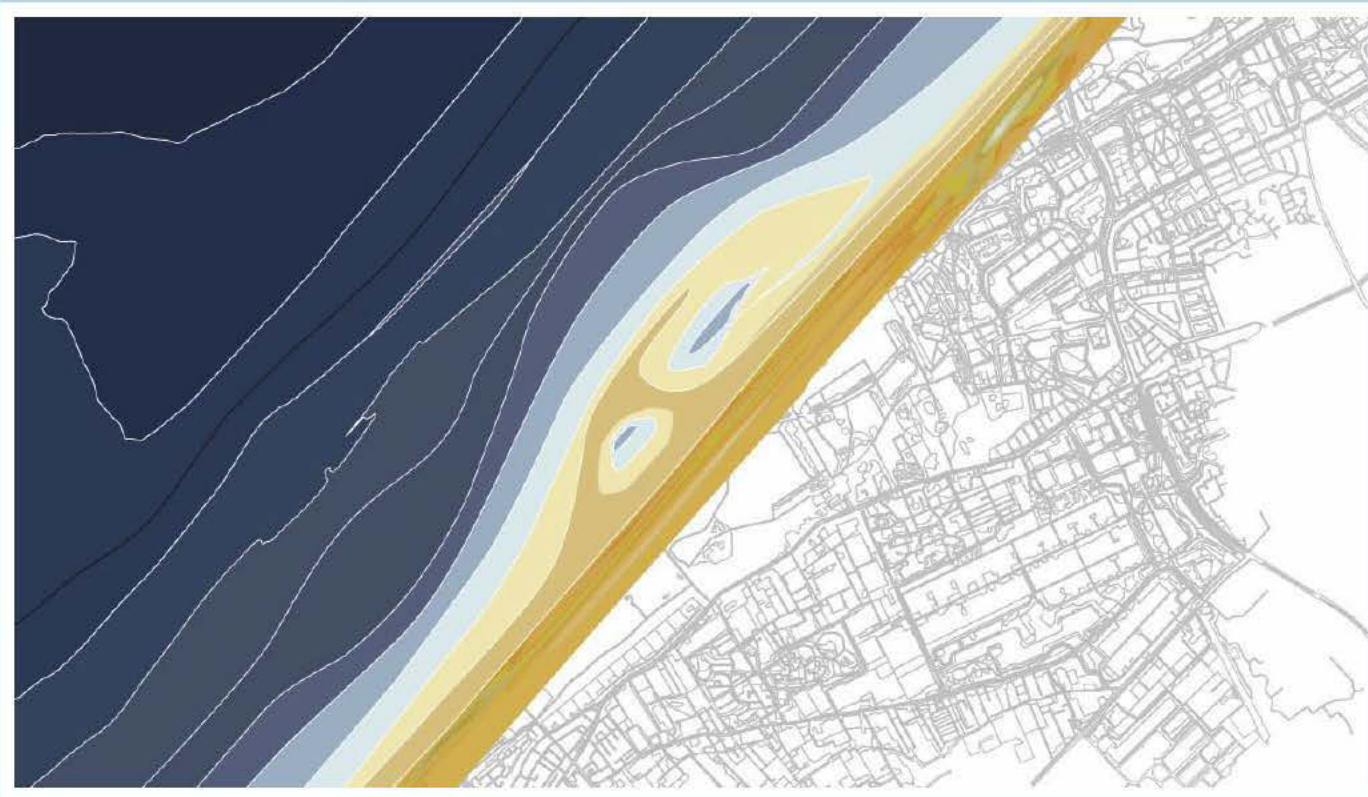
Morphology

After 5 years



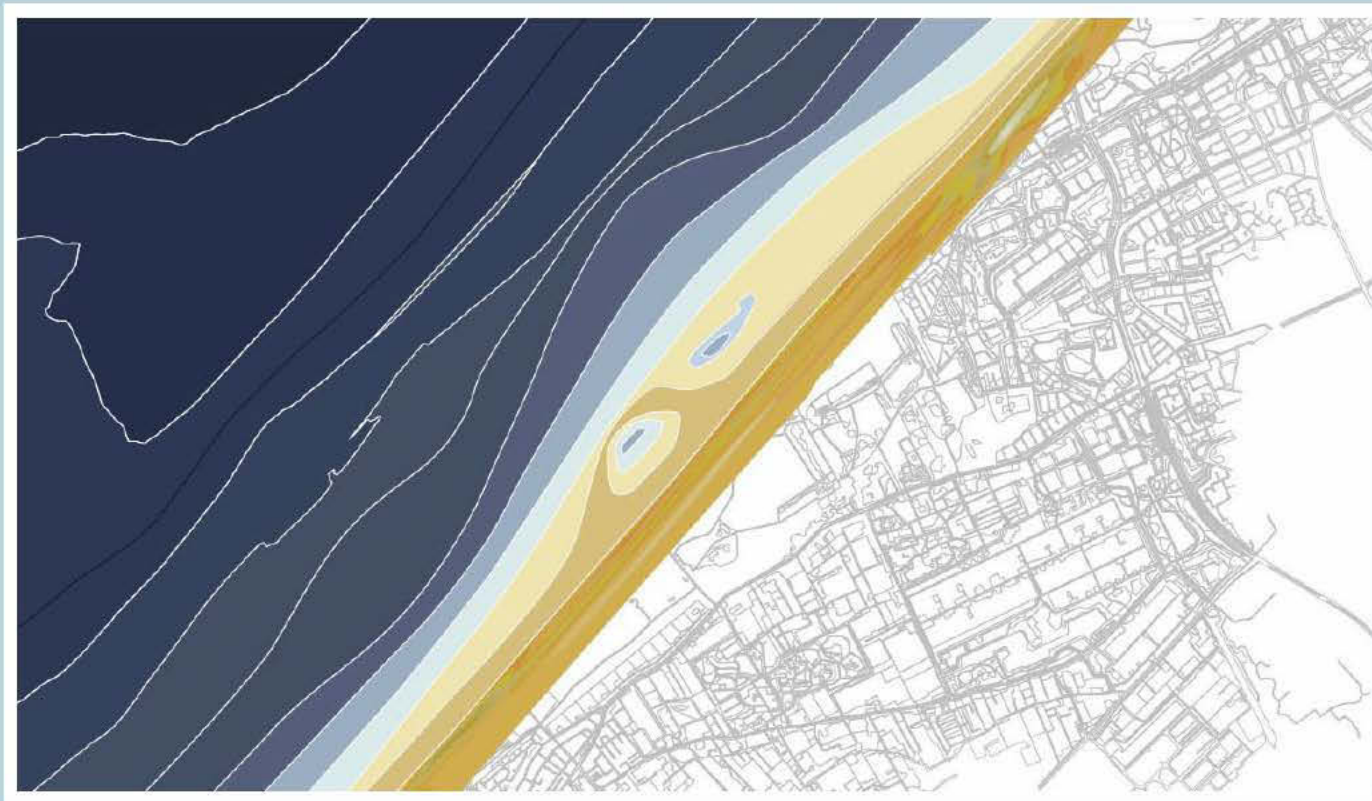
Morphology

After 10 years



Morphology

After 20 years



Monitoring goals

Gather information for good and safe management

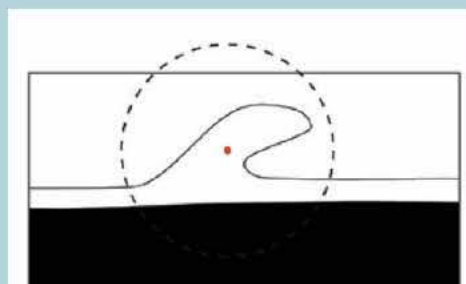
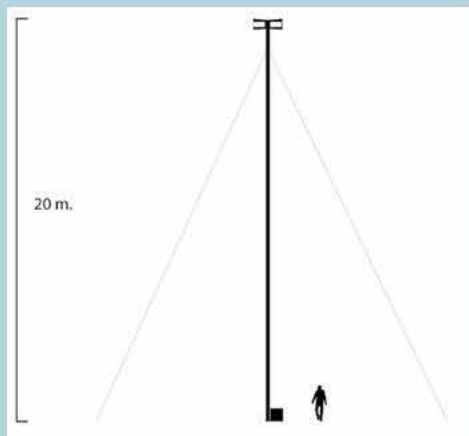
Fulfil permit conditions

Investigate whether the EIA targets are being achieved:

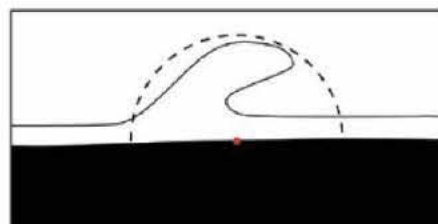
1. Natural dune expansion
2. Knowledge development and innovation
3. Attractive recreational and natural environment



Monitoring: approach



midden op lichaam



op zeereep

- Climate and waves
- Profile of foreshore, beach and dune
- Sediment composition
- Groundwater levels
- Sand and salt spray
- Beach and dune vegetation
- Benthos, fish, sea birds and sea mammals
- Recreation and swimmers' safety
- Management and risk control



Organisation



Projectbureau Pilot Zandmotor Delflandse Kust
(Project Bureau Sand Engine Delfland Coast)



Rijkswaterstaat
Ministerie van Verkeer en Waterstaat

The Zandmotor is part of the programme Kustvisie Zuid-Holland and initiative of the Province of Zuid-Holland and Rijkswaterstaat.

www.kustvisiezuidholland.nl



Partners



Gemeente Den Haag



Hoogheemraadschap van Delfland



Zuid-Hollands Landschap



milieufederatie
ZUID-HOLLAND

