The Prince of Orange with the coastal vice-governors
Coastal defence and development in the low lands

Lenie Dwarshuis van de Beek
Vice-governor Province of South-Holland
Sri-Lanka hit by the tsunami
Cancun: damage after hurricane Wilma
New Orleans after Katrina
Are we prepared?
Different approaches to managing risks

Option 1  Do nothing

Option 2  Abandon the land

Option 3  Prevent the floods

Option 4  Living with water
Different approaches to managing risks

Option 1  Do nothing
Option 2  Abandon the land
Option 3  Prevent the floods
Option 4  Living with water
The delta of Rhine and Meuse in ancient times
International trade in the 17th century
The golden age: Rembrandt
Different approaches to managing risks

Option 1  Do nothing
Option 2  Abandon the land
Option 3  Prevent the floods
Option 4  Living with water
Reinforcement of riverdikes
A thin green line
Living close by the sea: Ter Heijde
Flooding in ancient times
South western part of Holland flooded: February 1953
Breach of a dike near Rotterdam
Maintaining the coastline
Maeslant barrier in the Rotterdam Waterway
Anticipating climate change: Water policy in the 21st century

- Increasing discharges river Rhine:
  - was 15,000 m$^3$/s
  - by 2015 a safely discharge of 16,000 m$^3$/s
  - anticipate on the safe accommodation of 18,000 m$^3$/s by the end of the century

- Rising sea level:
  - 20 cm/century (measured until now)
  - 30 cm in 2050
  - 60 cm in 2100

- Increasing rainfall: +10%
Different approaches to managing risks

Option 1. Do nothing

Option 2. Abandon the land

Option 3. Prevent the floods

Option 4. Living with water
Floating greenhouse
Floating houses
Hurricane Wilma

evacuation of the Florida Keys
Program

Block I  Flood risk management
         Weak links, Netherlands
         Le Siagne, France

Block II Spatial development
           Recovery measures Cancun, Mexico
           Bangabelia project, India

Block III Institutional and political process
         Weak links, Netherlands

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