Regional Water Authorities

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Netherlands = wetlands 225,000 km watercourses
The Netherlands: delta of 4 international basins

- Rhine
- Scheldt
- Meuse
- Ems
The Netherlands without dikes

- 29% below sealevel
- 26% floodplains
- 55% flood risk area
- 2,000,000,000,000 billion euro investment in houses and other buildings
- 12 million people
The North Sea Flood 1953

175,000 ha flooded
1,836 dead
21st century - Climate Change
Government institutions Netherlands

National Government

Provinces (12)

Municipalities (411)

Regional Water Authorities (25)

General democracy

Functional democracy
National government

Main responsibility:

• National policy and supervision
• National standards (flood protection, environmental standards)
• Operational tasks national water infrastructure (Rijkswaterstaat)
Provinces (12)

Water management tasks

- Regional policy and supervision
- Licensing retraction for the purpose of drinking water and industrial retractions above 150,000 m³
Municipalities (411)

- Water management tasks
- Storm water collection
- Sewage system
- Urban groundwater
25 Regional Water Authorities (2,600 in 1953)
Regional water authorities - self governance

Independent government body:

- since 1122
- own legal power
- own tax system
- own elections

Water management tasks:

- flood protection
- surface water quantity
- surface water quality
- waste water treatment
- not drinking water
Flood protection

18,100 km of dykes and levees (3,500 primary, 10,000 secondary)

Central issues:
• Climate Change
• Land subsidence
• Updating safety standards
• Reducing flood risks (building dykes and pumping stations, enforcement, pest control)
Surface water quantity

Irrigation and drainage

225,000 km main, local and regional watercourses
353 wastewater treatment plants
Important for water quality (EU Water Framework Directive)
99% sewage connection
cooperation with municipalities
energy factories
Taxation by regional water authorities

Flood protection, Surface
Quantity €1.2 billion

Waste water treatment
€1.2 billion

interest-pay-say

art. 9 EU WFD cost recovery/polluter pays
€ 300 per household regional water authorities
€ 185 per household for sewage (municipalities)
€ 205 per household for drinking water (companies)

the polluter pays
Democratic representation

• Stakeholder democracy:
  o *Residents*
  o *Industries*
  o *Farmers/landowners*
  o *Nature conservation*

• Interest – pay-say

• Every 4 years elections for residents
• Other stakeholders are appointed
• Next elections 2015 (with provinces)
Use of geospatial information

- To calculate storage space of water in polders
- To communicate about our regulation (keur and legger)
- Communication to citizens and companies
- Support of projects
Trend in Geospatial information

- Use of mobile devices
- Height information
Mobile geospatial information used for:

- Inspections of dikes
- To locate muskrats
- To show the places where we dredge and mow
Height information

Information is used for:

- To decide the waterlevels of water surfaces
- If the dikes are high enough
- Enforcement
- Permits
- Mapping of 3D

The height is measured with laser almetry. From a plane of helicopter a laser beam scans the surface.
Height information
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Joannes Vermeer, view of Delft, 1661