Dutch water and sanitation services vs. sustainability

Erik Mostert
Water services in the Netherlands are inextricably linked with water resources
Delft South-East
Stormwater problems: flooding and water quality
Challenge the future

Rule:
325m³ storage/h
210 ha
Total:
68,000m³
Present:
33,000m³
Deficit:
35,000m³
Long term solution?
Disconnected hard surfaces
More water storage
“Water squares”
Water services governance is inextricably linked with water resources governance.
Challenge the future

Municipality

Water board or State

Municipality

Province

Municipality

Drinking water company

House owner/user

normale bui

Water board
Water services proper

- Drinking water: drinking water companies
- Sewers: municipalities
- Sewage treatment: water boards
Drinking water

Drinking water companies (10)
- Publicly-owned private companies
- Drinking water only
Regional/local

Municipalities (408)
Sewers + urban groundwater

Waterboards (24+1)

WATERBEHEER
25 Waterschappen

1. Noord Hollân
2. Nijmegen
3. Midden en Zuid-Afd
4. Rijn en Waal
5. Vecht en Vecht
6. Groot Gaukland
7. Rijn en Eemland
8. West en Westerwolde
9. Rijn en Twente
10. De Pulskerk en Onderland
11. Amstel, Vliet en Vecht
12. Hollands Noordelijk Waterschap
13. Westland
14. Gelderland
15. Betuwe en Kempenwaard
16. Sanderdijk en Groenendaal
17. Nederrijnse Oeveren
18. Scheldestromen
19. Oosterschelde
20. De Dommel
21. Noord Westhoek
22. Peel en Maasland
23. Rijn en Noordwaard
24. Zuiderzeewaard
25. Utrechtse Hoogte

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Waterboards

- 24 (plus 1)
- Task: water management in their area
  - Water level control
  - Flood protection
  - Water quality control
  - Sewage treatment
  - Groundwater regulation
- Elected/appointed by 1) inhabitants, 2) farmers, 3) nature managers and 4) industry
- Supervised by provinces
Water price, I (2011 data)

- On average € 48.64/connection + € 1.00/m³
  - May include precario rights: € 10 - € 40
- Average water use 97.3 m³/household
- 6% VAT and 0.158/m³ drinking water tax
- Total: € 171 (€ 1.76/m³)

- Delft: € 59.76 + € 0.95/m³, total € 177

- No possibilities for exemption
- “Policy to restrain disconnection”
Water price, II

Policies to limit the costs and price

- Tariffs need to be “covering the costs, transparent and non-discriminatory”
- Obligatory benchmarking
  - Voluntary since 1997
- Max. equity capital ()
- Max. dividend to shareholders
  - Max. 1% development aid to be subtracted from this
- Max. salary board members
Sewers charge

- Finances operation, maintenance, replacement \textit{and} measures against groundwater nuisance

- Owner: € 128.90/connection (Delft)
- User: € 35.95/connection (up to 500m$^3$) (Delft)
- Total: € 164.85
- Limited possibilities for exemption

- Replacement $\rightarrow$ sewers charge ↑

- Sewers plan
Repairs: € 105,000
Sewage treatment

- Sewage treatment charge
- € 71.28/ “pollution unit” (€ 213.84/ household; Delfland)
  - E.g. waterboard Dommel € 44.52
- Limited possibilities for exemption
New urban areas

- Developers pay costs of extra water management measures
- Requirement to maintain or compensate for loss of water storage
- In fact inhabitants new areas subsidize inhabitants old areas
Water price, household Delft, owning house

- Drinking water: € 177 (€ 1.82/m$^3$)
- Sewers: € 165 (€ 1.70/m$^3$)*
- Sewage treatment: € 214 (€ 2.20/m$^3$)*
- Total: € 556 (€ 5.71/m$^3$)

*Limited possibilities for exemption

More than 100% cost recovery
But in addition...

- Waterboard tax
  - Inhabitants: € 99.66/ household
  - Houses: 0.0137 % of value
  - Unbuilt: € 132.27/ ha
- Extra expenses for dyke reinforcement
  - Nationally 100 mln, Delfland 6mln; in 2015 double
- Large deficit of waterboard Delfland
  - 2011: 260 mln turnover, 60 mln deficit
- Tariffs +9% (2011, 12 and 13)
  - Investments -42%, exploitation -18%
- Generally purchasing power ↓
Points for discussion

- Are separate bills for drinking water and sewage good?
- Should water quality control and sewage treatment be separated?
- Are government-owned private companies the best option?
- Do exemptions have a place in water services provision?
Dimensions of sustainability

1. Long-term asset renewal and maintenance
   • O.k.
   • Subsidies something from the past
   • Earmarked financing
   • Several (relatively small) water bills
   • Sewers plan
   • But pressure on local financing
2. Environmental and health concerns

- Politically low priority
- Most problematic stormwater problems addressed
3. Consumer equity

- No social tariffs
- Limited possibilities for exemption
- Sewers: small houses subsidize large houses and new houses subsidize old houses
- Rules on disconnection
Redistributive effects

Water use depends mainly on household size (average 2.2 persons)

Average water bill if all fixed:
• 1 person household: av. 520 €/y
• 6 person household: av. 520 €/y

If all based on water use:
• 1 person household: av. 250 €/y
• 6 person household: av. 1300 €/y
4. Governance

- Should water boards become responsible for the sewers?
  - Nov. 2009: waterboards say more efficient
  - Municipalities: no, link with roads
  - Conclusion: better cooperation
- Regional water services companies?
Dutch drinking water tariff

- Connection charge: 48.64 €/y (25-115 €/y)
- Tariff per m³: 1.00 €/m³ (0.67-1.26 €/m³)
- Average household bill (97.3 m³/y): 145 €/y

(Ecxl. 6% VAT and BoL of 0.08 €/m³)
Sewers charge (earmarked tax)

- Per connection (70%)
- Household size
- Water use
- House value

- Average 160 €/y
Sewage treatment

- Treatment charge
- One-person household (1 unit): 51-89 €/y
- More-person household (3 units): 153-267 €/y
But...

Should tariffs be based on
• Benefit principle?
• Causation principle?

Or should they be an instrument
• For reducing water use?
• For income policy?