Water accounting

Applications in the Netherlands

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Content

• What is water accounting?
• Water issues
• Dutch water accounts
• Policy applications in the Netherlands
• Examples
What is water accounting (SEEA-W) ?

- Conceptual framework for organizing water information to study the interaction between economy and the environment
- Integrated system
- Coherent with System of National Accounts (SNA)
- Interim Statistical standard (2007)
- SEEA-Water is a subsystem of the System of environmental economic accounting (SEEA)
- Key indicators (net domestic water use, water intensities etc.)
Water policy objectives

Figure 2. Broad grouping of water policy objectives

I. Improving water supply and sanitation services
II. Managing water supply and demand
III. Improving the state of the environment and water resources
IV. Adapting to extreme hydrometeorological events

Water security
Overview of the SEEA-W accounting system

1. Physical water supply and use tables
   → information of volumes of water exchanges between economy and environment and within economy
   → Improving water efficiency

2. Emission accounts
   → Information on amounts of pollutants added to waste water as result of economic activities

3. Hybrid and economic accounts
   → Information on the economy of water in monetary terms

4. Asset accounts
   → Information on physical stocks of water
Water accounts of the Netherlands
Water issues in the Netherlands

Safety, protection against flooding

Water management: excess of water

Water pollution

Water management: water resources and water use

Water quality
Policy demands

• **Main users:** Ministry of infrastructure and environment, water boards, water companies, Eurostat, other etc.

• **Water Framework Directive**
  - Description of the economic importance / interests related to the use of water
  - Important as potential ground for derogation (disproportionate costs; socio-economic reasons)

• **Marine Strategy Framework Directive**
  - Initial Assessment asks for ‘Economic analysis of marine waters’

• **Climate change policies** → expenditure for climate change mitigation / adaptation

• **Indicators for green growth**
Dutch water accounts - overview

1. Physical water flow accounts \((m^3)\)
2. Emission accounts, based on emission registration (kg), national and regional data
3. Economic accounts for river basins, based on the national and regional accounts (euro’s, employment)
4. NAMWA matrix (National accounting Matrix including water accounts), including water related monetary data (taxes, subsidies etc.)

New: Water balance
Water quality accounts
Is there decoupling between water use and economic growth?

Volume change GDP, employment and tap water used for production

![Graph showing index 1990=100 for tap water use by industry, GDP, and employment from 1970 to 2010**.](image)
What are the most important users of water? Is their water efficiency improving?

Industries with the highest use intensities for groundwater

- Manufacture of computer, electronic products
- Manufacture of chemical
- Manufacture of textiles
- Sewage and refuse disposal services
- Manufacture of basic pharmaceutical products
- Horticulture
- Manufacture of other non-metallic mineral products
- Manufacture of food products, beverages
- Manufacture of basic metals
- Other agriculture
- Manufacture of rubber and plastics products
- Manufacture of paper and paper products
- Livestock breeding
- Arable farming
- Total of Dutch economy

![Bar chart showing the use intensities of different industries for groundwater in 2003 and 2010.][1]

[1]: https://example.com/bar-chart.png
Are there regional differences in emission intensity?

Emission-intensity per river basin (only producers)

- **heavy metal equivalents per million euro**
- **nutrient equivalents per million euro**

<table>
<thead>
<tr>
<th>Region</th>
<th>Heavy Metals (Emission)</th>
<th>Nutrients (Emission)</th>
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<td>10</td>
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<tr>
<td>Scheldt</td>
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</tbody>
</table>
Economic figures of the North Sea for the Netherlands

- **Main user:** Ministry of infrastructure and the environment: European Marine Strategy Framework Directive (EU)
- **Objective:** to determine the potential impact on the Dutch economy of protective policy measures in the Marine environment.
- **Calculation of economic figures of activities:**
  1. Direct activities on the “Dutch part” of the North Sea, the Dutch Continental Shelf (DCS): fisheries, shipping, oil and gas extraction, wind farms etc.
  2. Activities in seaports and in the coastal area.
Distribution of the employment (1000 fte)

Total employment: 246,000 fte (4.2 % of total)

- Seaports: 191,5
- Coastal Zone: 40,3
- DCS: 6%
- Fisheries: 0.3
- Sea shipping: 9.5
- Wind energy: 0.0
- Oil and Gas extraction: 4.5
Thank you for your attention!

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