NAMWA

The Dutch system of Water Accounts

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Structure

- Introduction to NAMWA
- Work on NAMWA in the Netherlands
- Results and indicators
- Future work

What is NAMWA?

System of National Accounts (SNA)

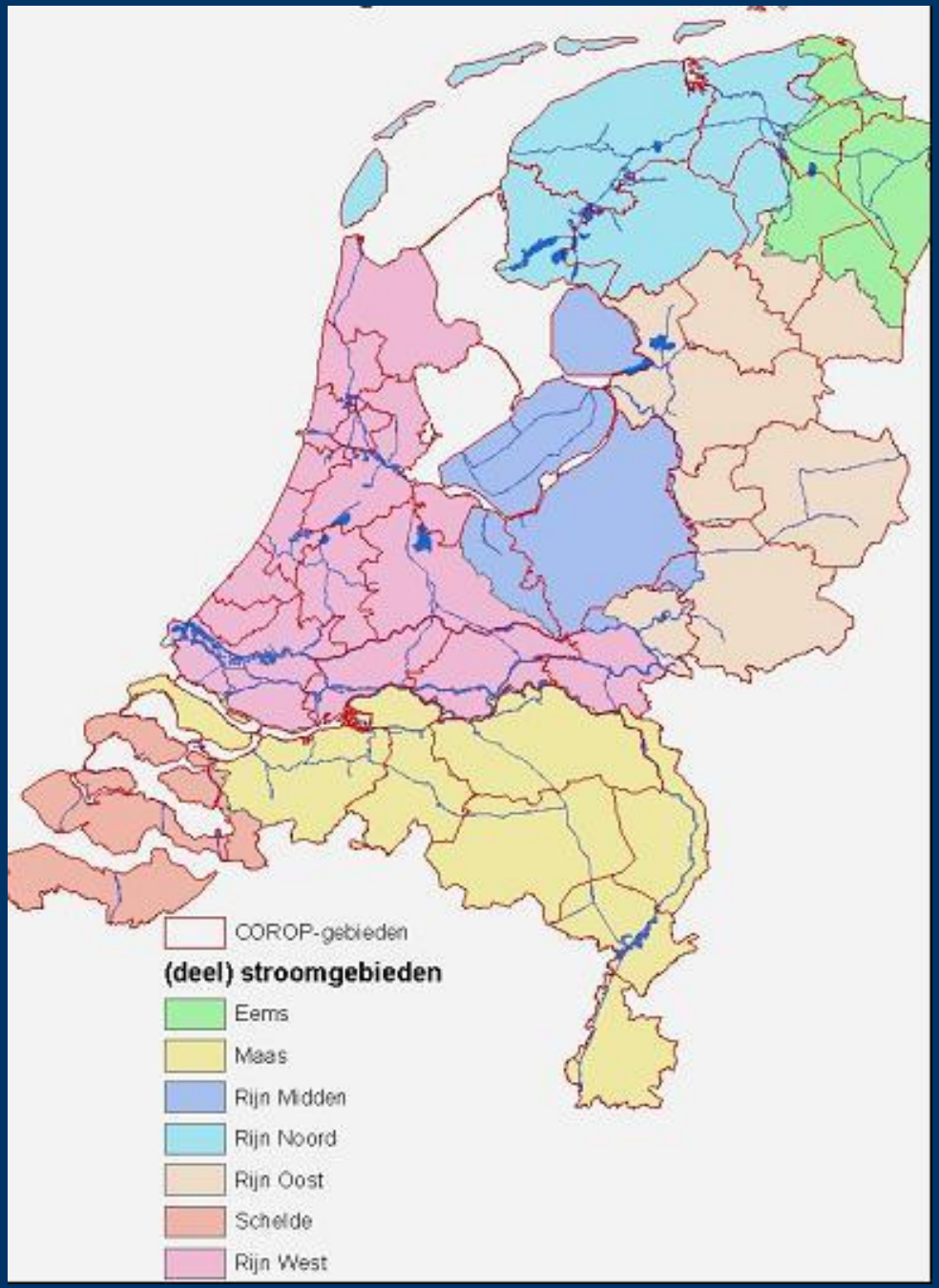
National Accounting Matrix including Environmental Accounts (NAMEA)

National Accounting Matrix including Water Accounts (NAMWA)

Work on NAMWA in the Netherlands

- Based on an experimental NAMWA published in 1996
- Collaboration between RIZA and Statistics Netherlands
- 2002: Extension of original NAMWA
- 2003: further extension: addition of more pollutants, more detail for river basins

Scale: National and River Basins


COROP-gebieden
(deel) stroomgebieden
Eems
Maas
Rijn Midden
Rijn Noord
Rijn Oost
Schelde
Rijn West

Structure NAMWA

NAMWA exists of three parts:

1. **Economic accounts,** primarily based on the national accounts (euros)

2. **Emission accounts,** based on emission registration (kg)

3. **Water extraction and discharge account,** based on the water survey (m^3)

Economic parameters

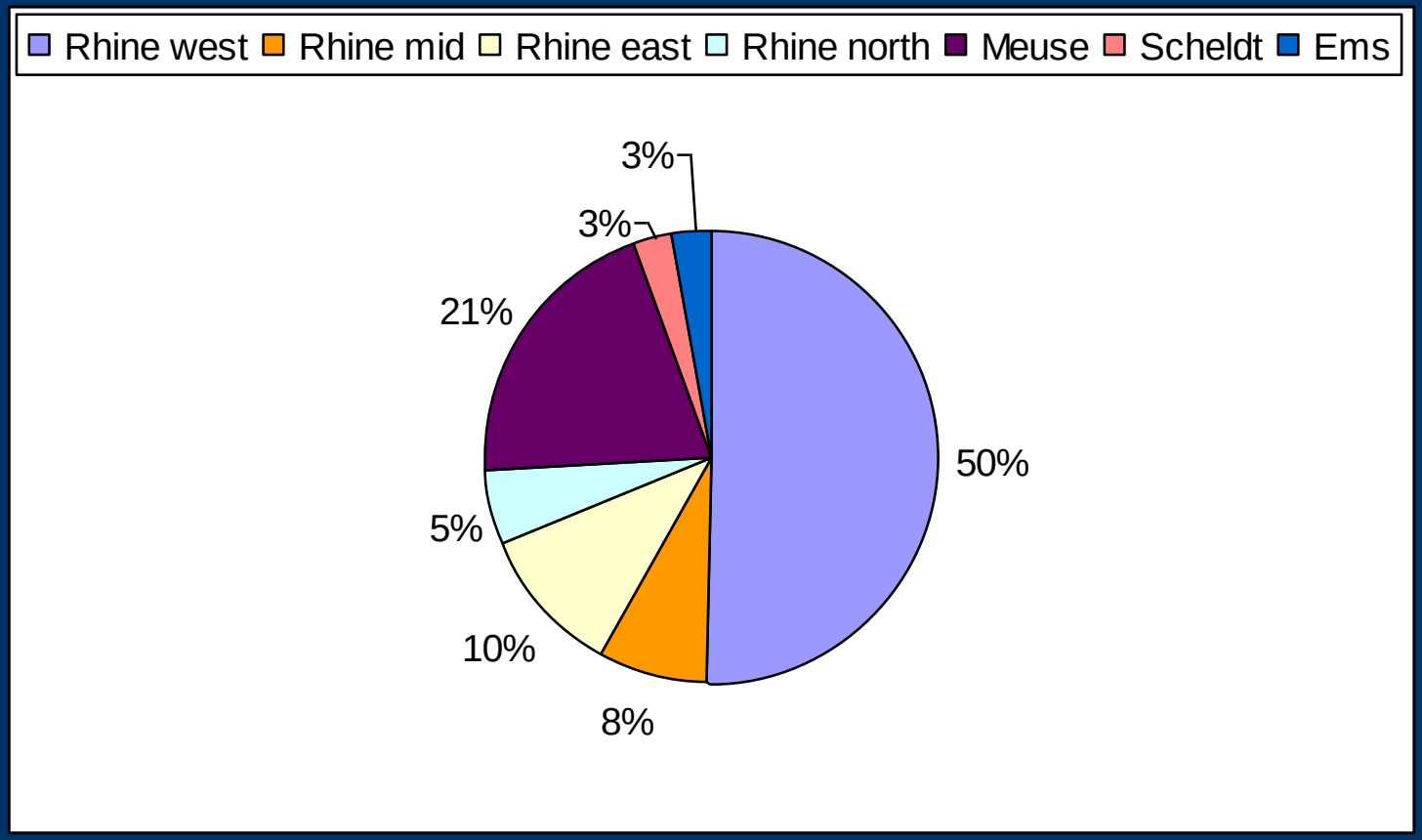
– **National:** overview of the expenses (vertical) and receipts (horizontal) with specific attention to water (waterboards, sewage taxes etc.)

– **Regional:** production, use, value added, number of employees per industry

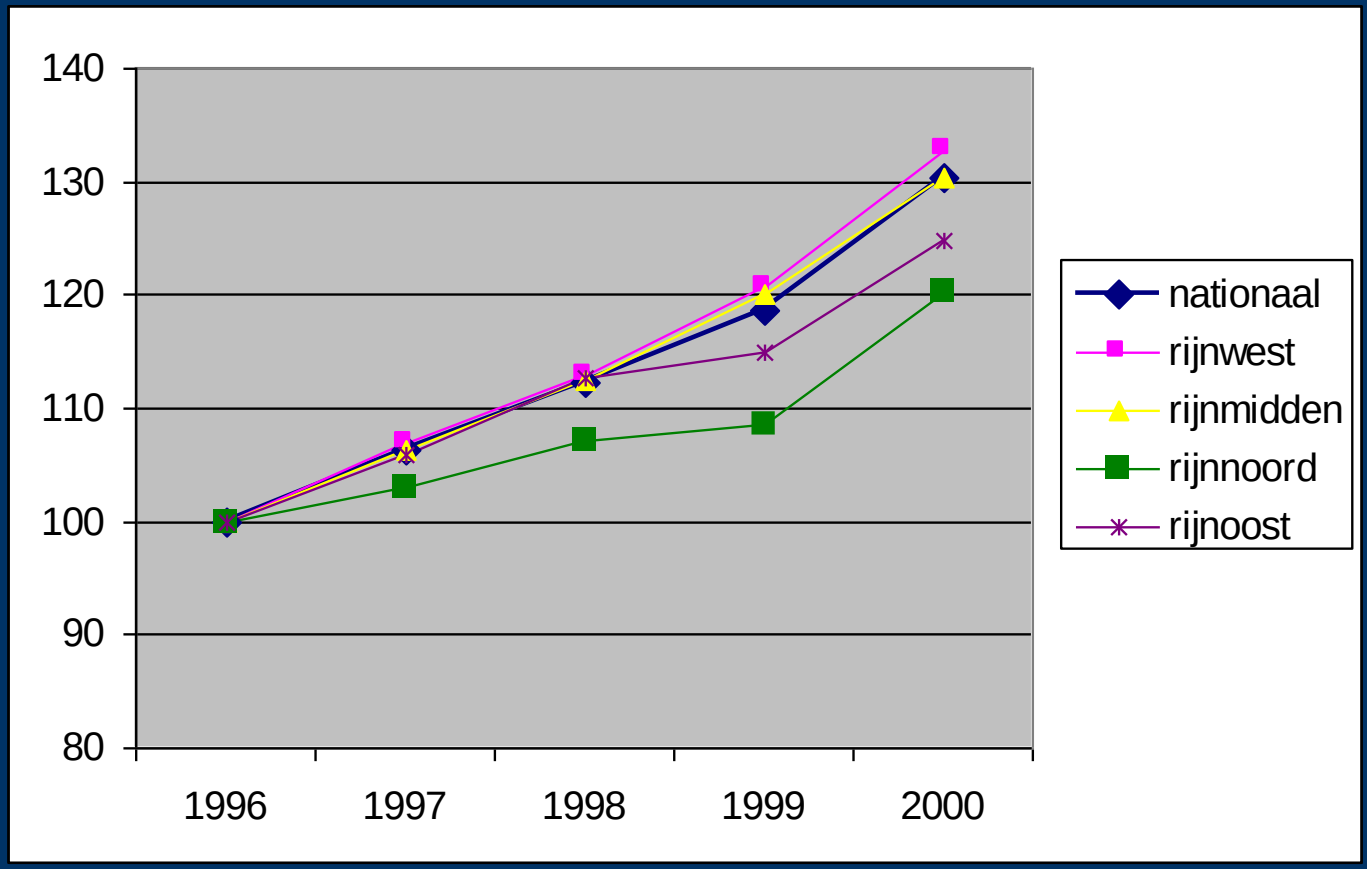
NAMWA : the matrix

Account nr	1-10	11	12	13	14
1-10	NAM (economic); mln Euros				
11	Water balance; mln m^3				
12	Emission balance; kg				
13	Water balance; mln m^3				
14	Emission balance; kg				

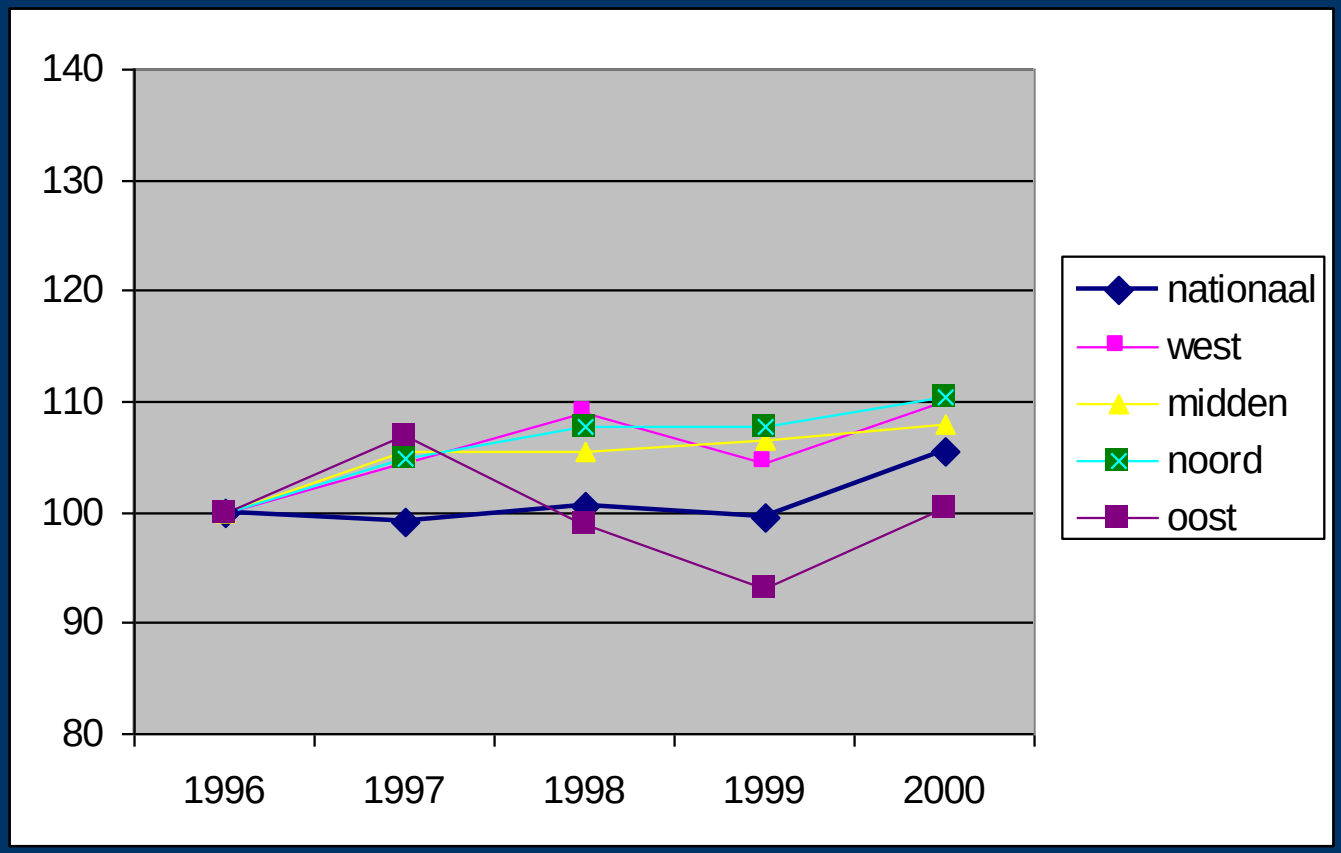
Distribution of economic value added generated in the various river basins in the Netherlands



Economic production 1996-2000



Economic production 1996-2000: agriculture



Emission accounts

– National en regional emission registration

– overview of the production and absorption of emissions by the industries

– 78 substances: o.a. P, N, heavy metals, pesticides etc.

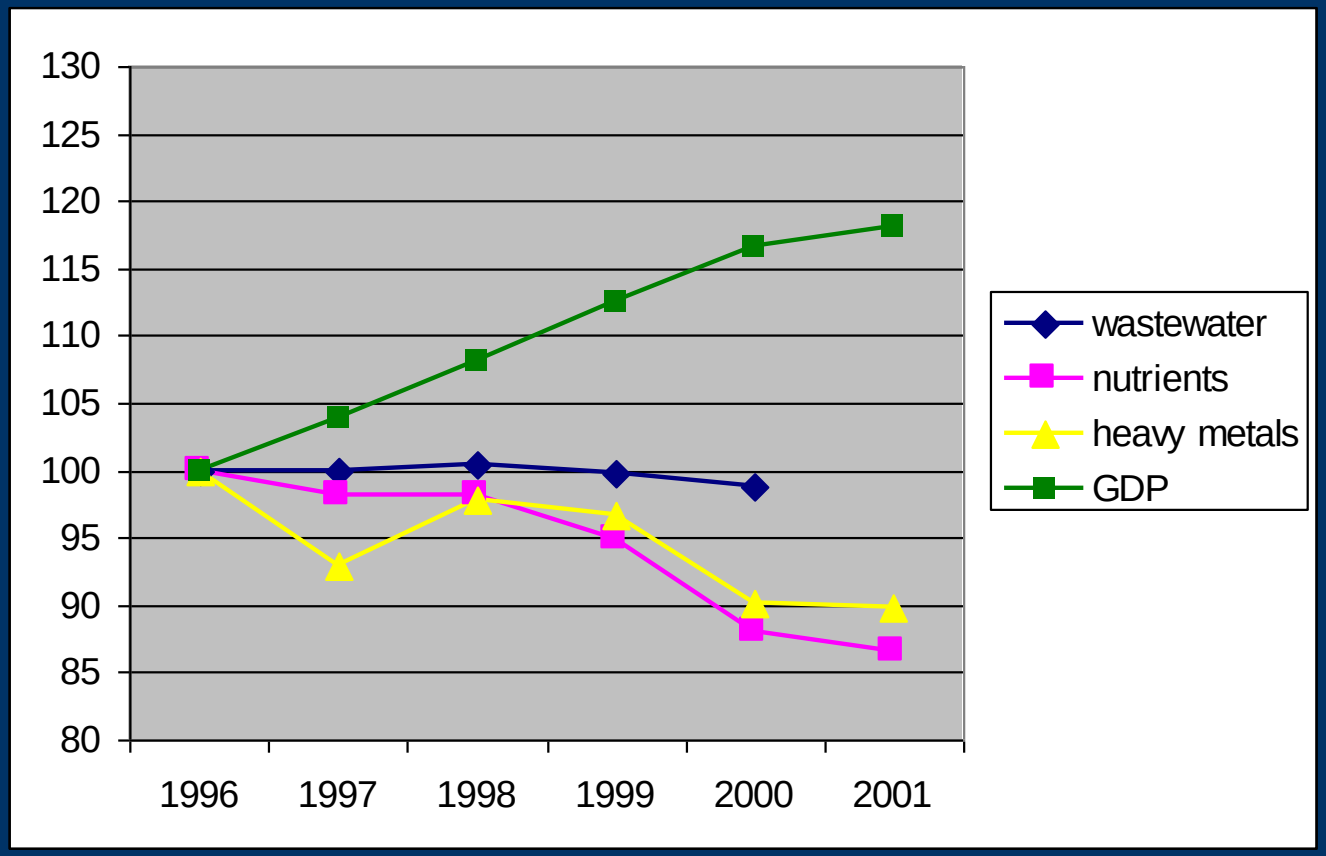
Origin of pollutants

	P	N	Heavy metals	Waste water
Consumers	x	x	x x x x x	x
Producers				
–Agriculture	x	x	x x x x x	x
–Fisheries	x	x	x x x x x	x
–Mining	x	x	x x x x x	x
–etc	x	x	x x x x x	x
Input from abroad	x	x	x x x x x	x
Total	x	x	x x x x x	x

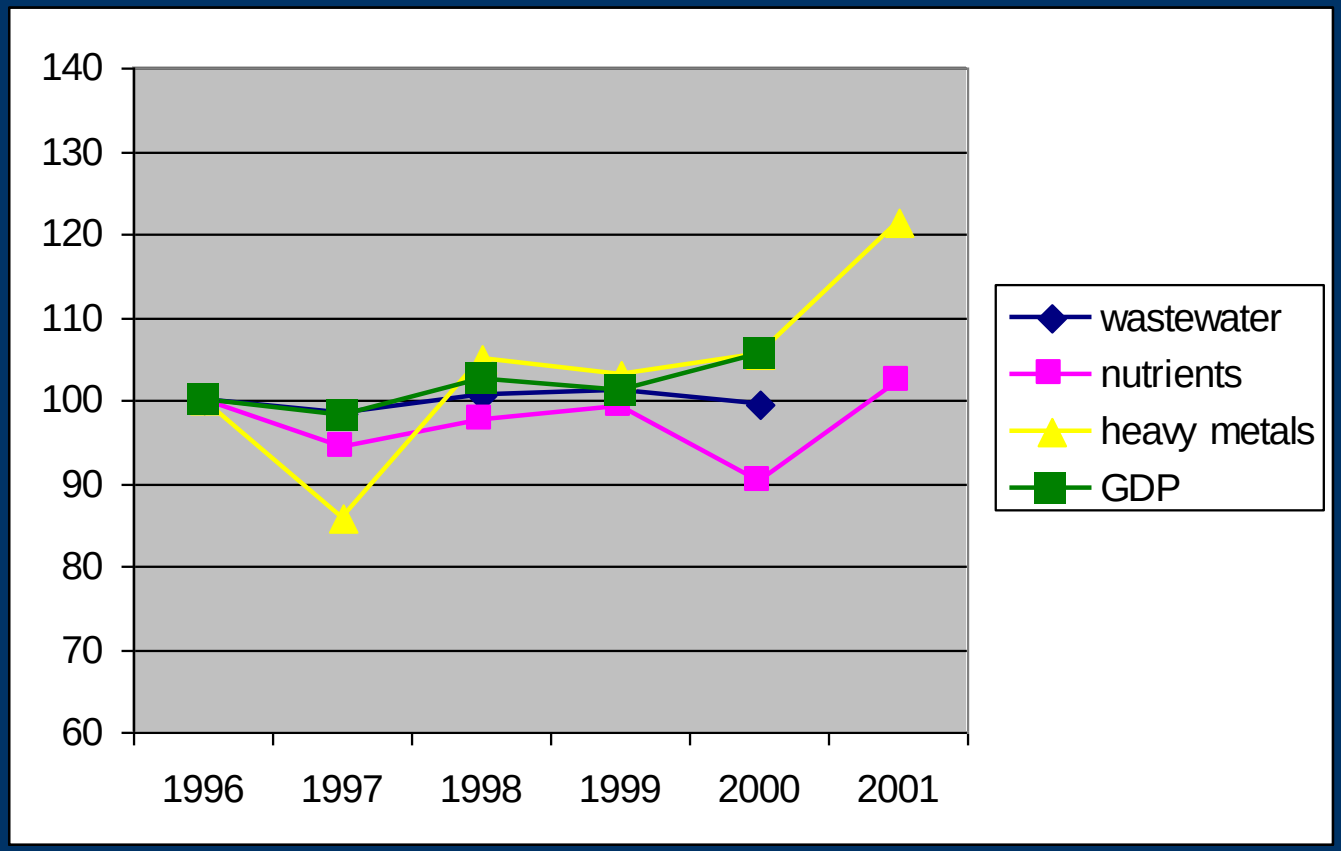
Destination of pollutants

	P	N	Heavy metals	Waste water
Absorption	x	x	x x x x x	x
Export abroad	x	x	x x x x x	x
Env. indicators				
–eutrophication	x	x		
–Waste water				x
–Heavy metals			x x x x x	
Total	x	x	x x x x x	x

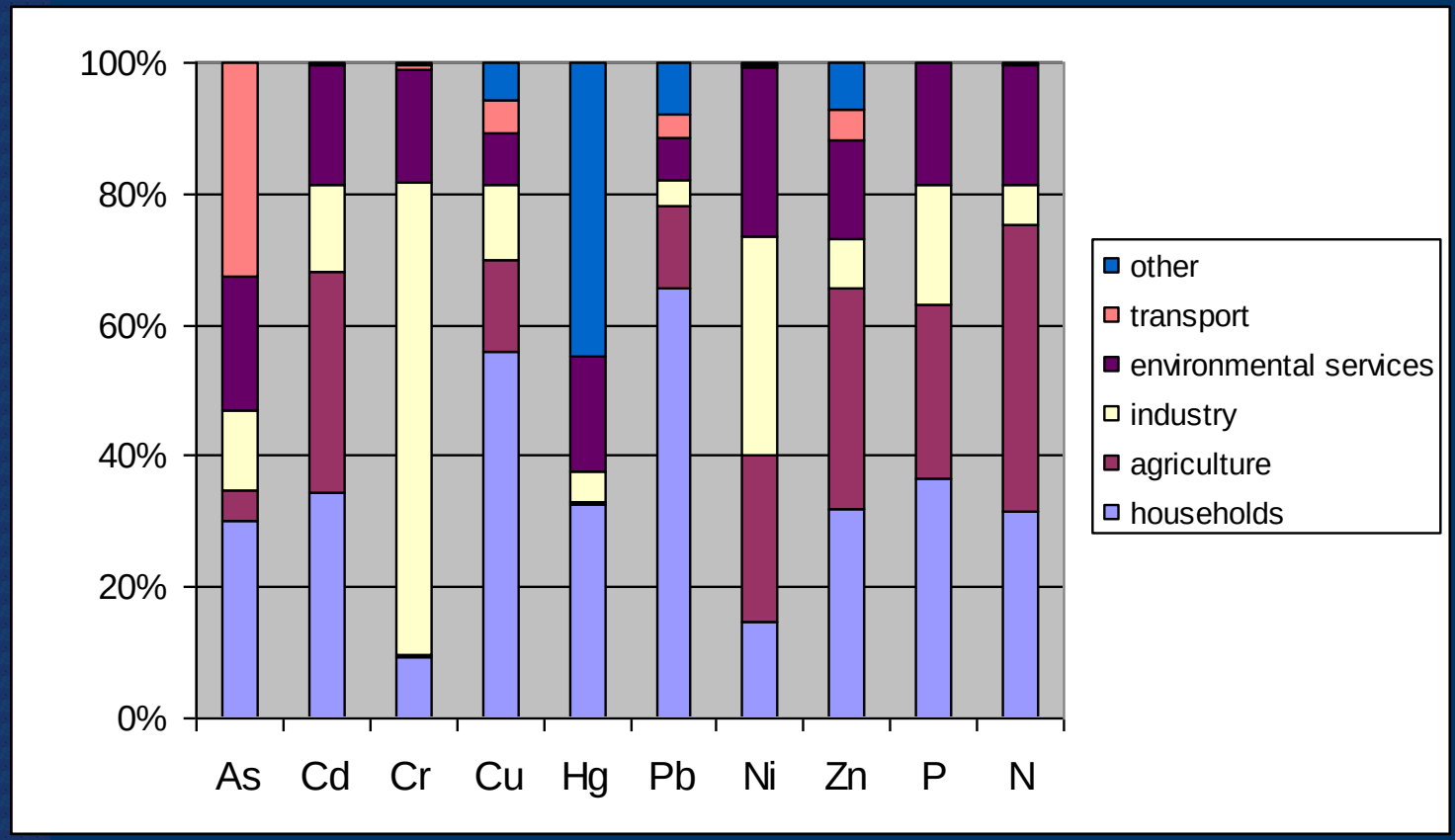
GDP and environmental indicators: national



GDP and environmental indicators : SCHELD



Distribution emissions over the industries (2000)



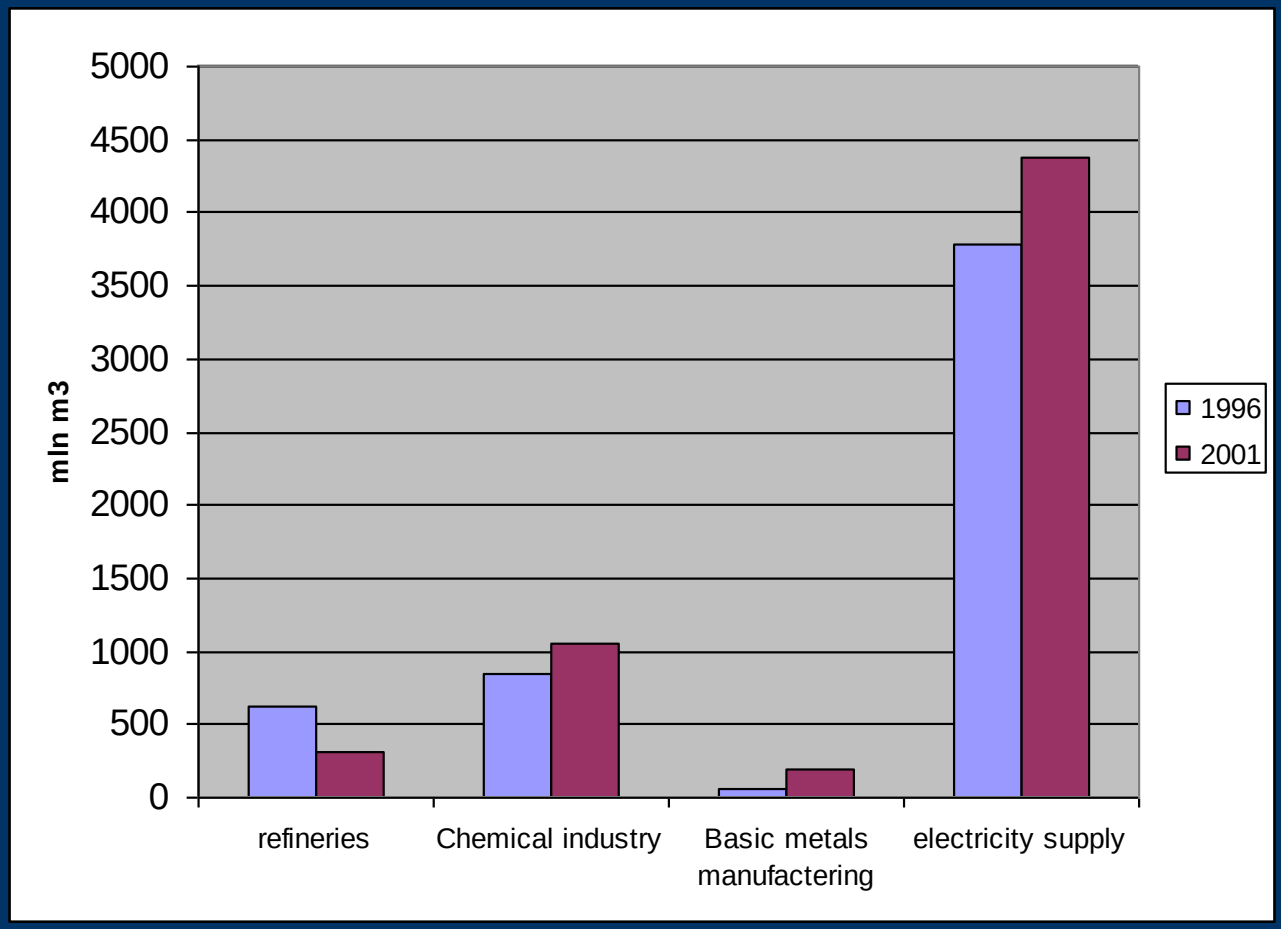
Water accounts

– **Water survey** from the CBS (national and regional)

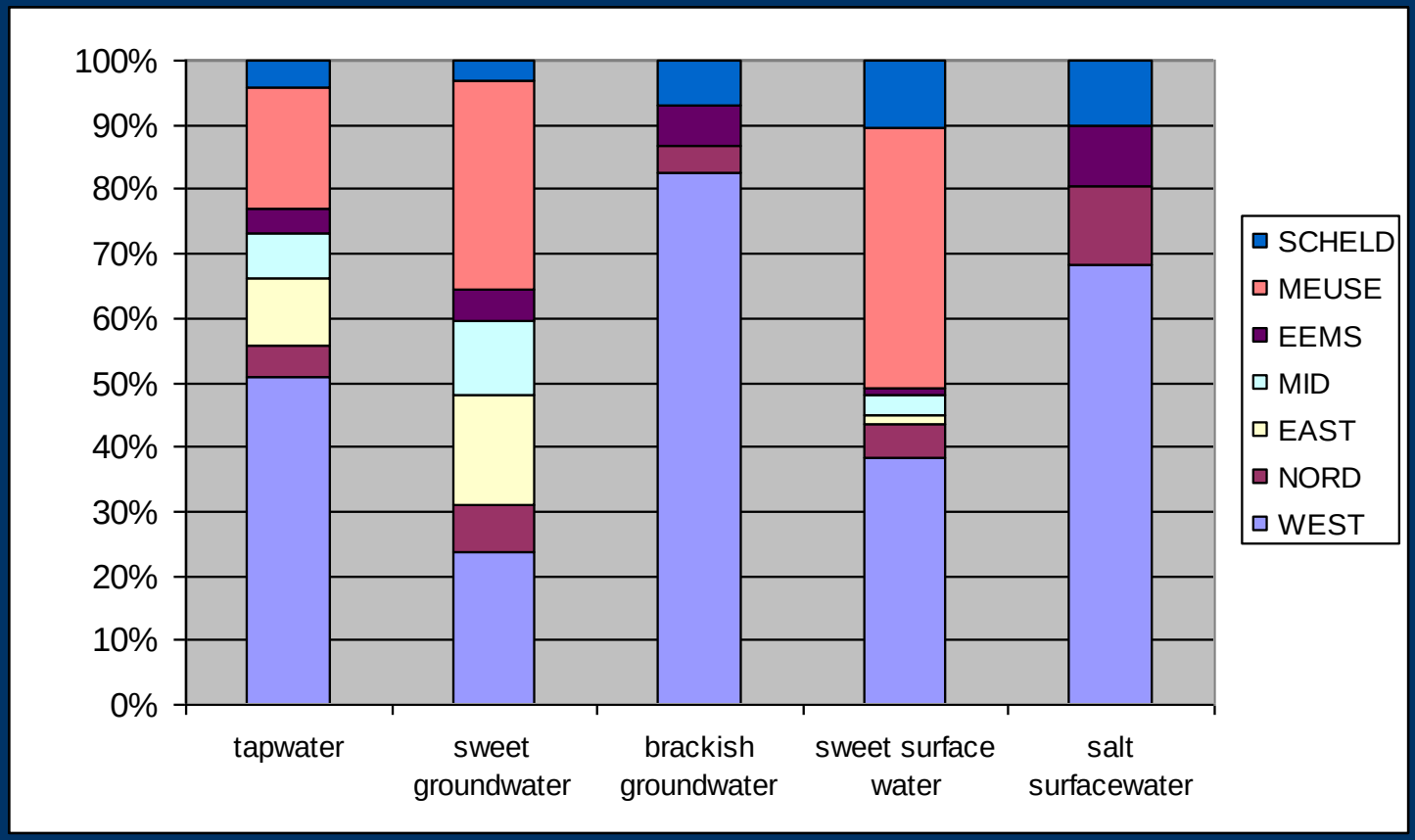
– every 5 years

– production and use of **fresh water** (ground-, surface- en drinking water) per NACE

Use of salt surfacewater



Use of water in 2001



Results so far

– **National NAMWA** for 1996 t/m 2001

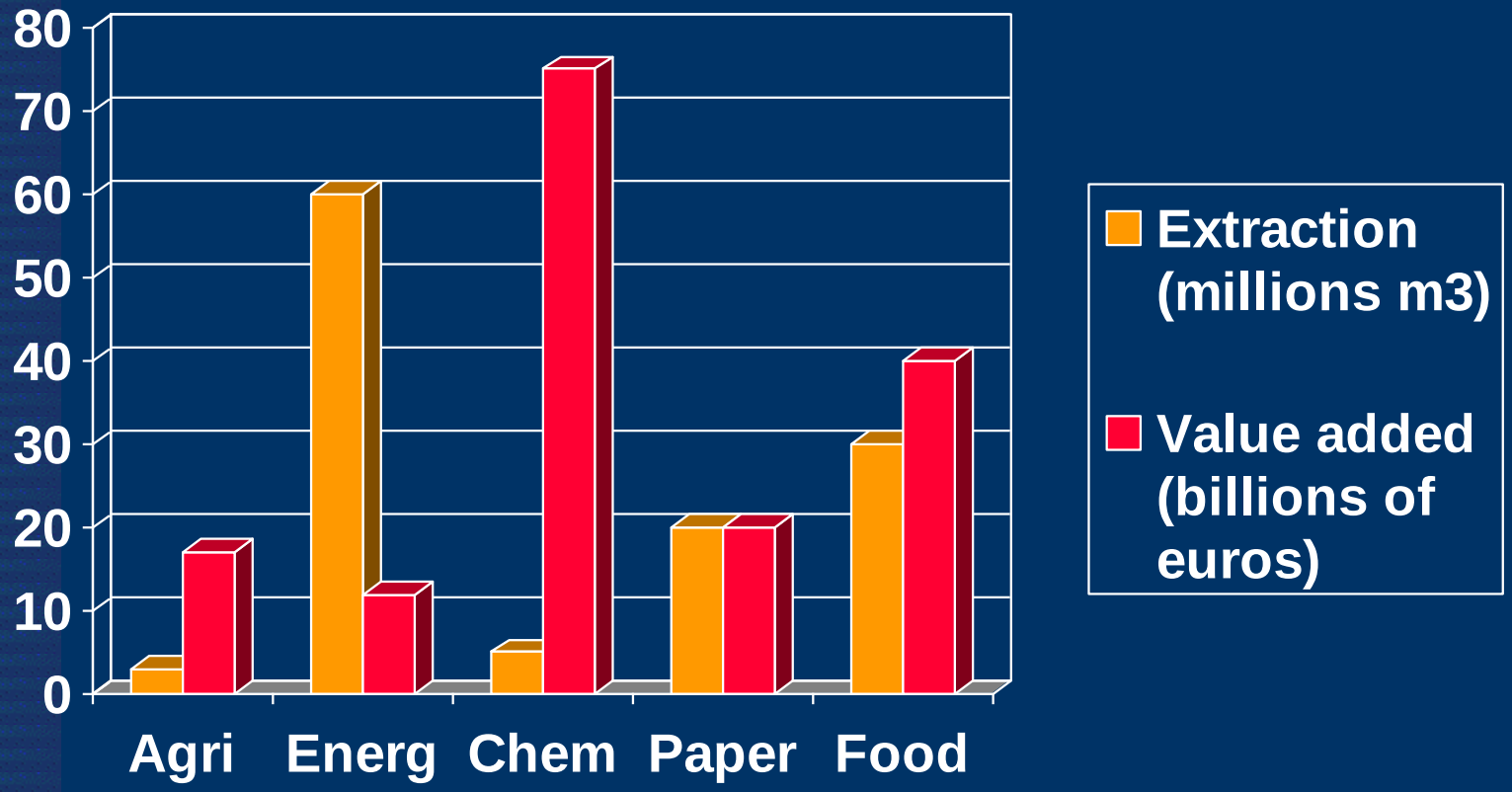
– **Regional NAMWA** for 1996 t/m 2000

Indicators

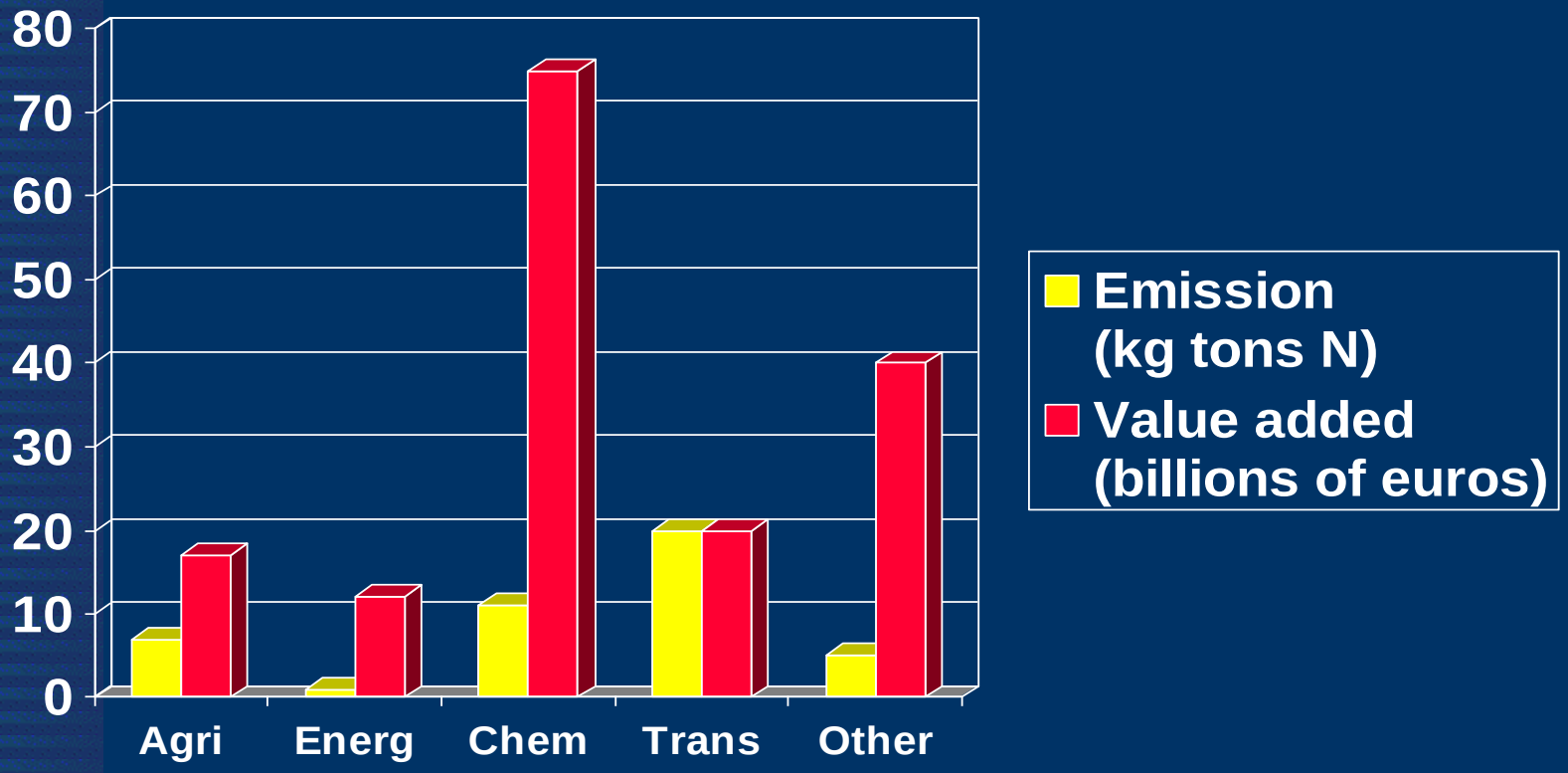
Eco-efficiency:

- value added and water extraction by industry
- value added and emissions to water by industry

Eco-efficiency branches of industry



Eco-efficiency branches of industry



Indicators

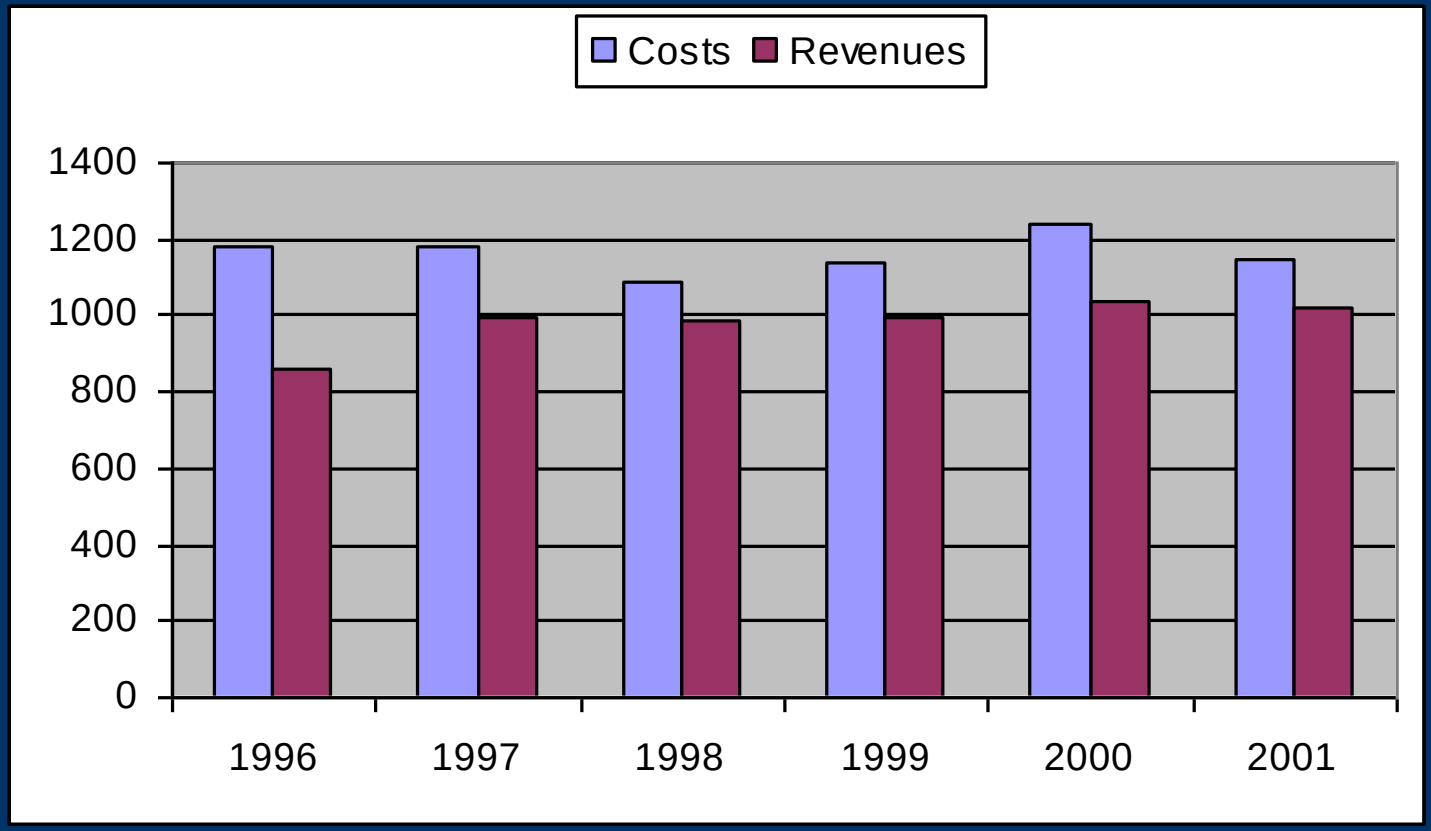
Eco-efficiency:

- value added and water extraction by industry
- value added and emissions to water by industry

Cost recovery rates based on:

- Production costs water services
- Environmental taxes related to water

Total costs and revenues of the water service wastewater treatment (in million euros)



Usefulness of NAMWA for WFD (1)

NAMWA provides a **consistent** integrated economic- environmental accounting framework which provides

information about:

- Intensity of water use by branches of industry
- The physical flows of supply of water services
- Production costs of water services
- Environmental taxes related to water

at National and River Basin level

Usefulness of NAMWA for WFD (2)

Hence NAMWA provides indicators about:

- Extent and relative significance of water services
- Extent and relative significance of water use
- Cost recovery
- Application of Polluter Pays Principle

Future work

- NAMWA as a regular ‘product’ from 2002 onwards
- Calculate data for 1990-1995
- Waterbalance every year
- Composition of indicators
- Publication of the data (also on the internet)