



# The governance of water resources in the Netherlands

Water availability for drinking water, agriculture and industry

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# The Netherlands: A history in water management

1580



1700



2000



# Concluding remarks (I)

- Sustainable water management needs an integrated and combined approach to governance (institutional, legal, economic) and technical arrangements
- Looking at basic concepts of good water governance we see the same elements in several theories
- Thinking of and using leading principles may help in a period of change towards a sustainable and fair use of water resources
- Both substantive and procedural arrangements are necessary
- River basin management and a local/regional approach with strong stakeholder participation and a relation between “stake – pay – say” works best



# Concluding remarks (II)

- The Dutch approach does not fulfil all these requirements for good water governance and a sustainable water resource management
- Nowadays the shift towards more centralization and the enlargement of management units (sub-river basins) may cause problems in the future
- There is not yet a fair balance between what is at stake and payment by all water (service) users, especially agriculture has a privileged position



# Content

- Facts & figures
- Water availability: Problems
- The status of water
- Good water governance: in general, leading principles and Ostrom's Common Pool Resource Management
- Organisation of water management: Europe & the Netherlands
- Legal arrangements: the right to water, legislation, distribution mechanisms
- Economic arrangements: cost recovery of water services
- Concluding remarks



# **FACTS & FIGURES: THE NETHERLANDS**



# Facts & Figures: the Netherlands

- A delta in North-west Europe
- Surface: 41,526 km<sup>2</sup>, 18% is surface water!
- Residents: 16,515,057
- Population density: 397.7 inhabitants per square kilometer
- 2/3 of the population live in an area with serious flood risk
- More than 50% of the country is threatened by floods (from rivers or the North sea)
- 3291 kilometers of dikes and dams; 268 kilometers of dunes, 808 artificial water works to protect against flooding
- Over 3000 polders that must be drained
- Drinking water quality is good, chemical and ecological status are not sufficient
- 4 river basins: Rhine, Meuse, Ems and Scheldt



# **WATER AVAILABILITY: PROBLEMS**





# Water availability: Problems

- Too much water (a problem which has long existed), the risk of floods
- Poor water quality (has improved over the years)
- Water scarcity (a rather new problem)
- Many users: individuals, agriculture, drinking water companies, energy supply, industry, tourism, shipping, fishing
- People think they have an unlimited right to (almost) free water (services) and have a blind trust in the government
- Climate change leads to more periods of water shortage and more flooding
- **We have to rethink the existing governance and distribution mechanisms**



# Impact of climate change in Europe

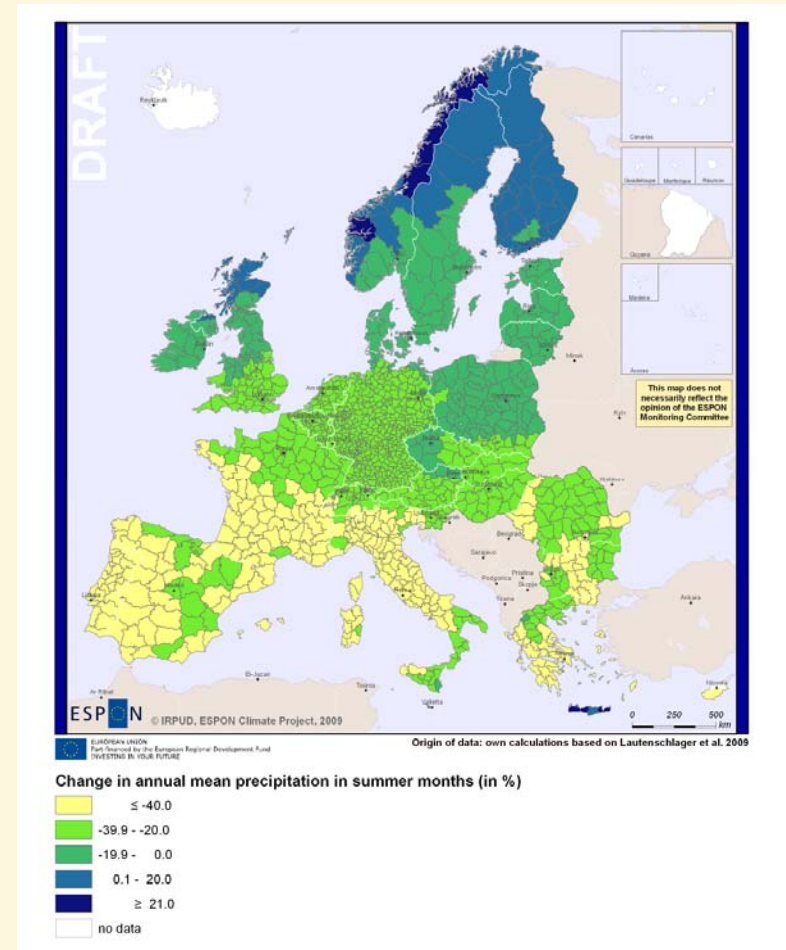
## Average water use in Europe:

Agriculture 32%

Electricity 31%

Industry 3%

Households 24%



# THE STATUS OF WATER



# The status of water

- The Netherlands: water is a **public good**,
- It belongs to everyone and nobody, a common pool
- How to avoid a tragedy of this commons?
  
- European Union: **water is not a commercial product like any other but a heritage which must be treated and defended as such**
  
- A different approach compared to India?



# GOOD WATER GOVERNANCE



## General: Good water governance is:

- **legitimate**, i.e. ensuring transparency, accountability, fairness and equity
- **effective**, i.e. addressing the task decisively and efficiently through the right mix of norms, instruments, competent authorities and stakeholders, strategies and processes
- **resilient**, i.e. both enabling autonomous adaptation and building long-term capacity.



# Ten leading normative legal and policy principles

1. human dignity
2. solidarity
3. protection of property rights
4. equal treatment
5. the non-shift principle
6. the proportionality principle
7. the user and polluter pays principle
8. the precautionary principle
9. the subsidiarity principle
10. the concept of decentralization.



# CPR design principles Ostrom (1990)

1. Clearly defined boundaries
2. Congruence between appropriation and provision rules and local conditions (restricted access)
3. Collective choice arrangements
4. Monitoring
5. Graduated sanctions
6. Conflict-resolution mechanisms
7. Minimal recognition of the right to organize
8. Nested enterprises





# **TOWARDS GOOD INSTITUTIONAL LEGAL AND ECONOMIC GOVERNANCE**



# Governance solutions

- **Institutional arrangements:**
  - River basin management
  - Common pool resource management?
- **Legal arrangements:**
  - Water rights-based approach or water as a public good
  - A right to water and how it is implemented
- **Economic arrangements**
  - Cost recovery for water services:
  - The user pays/the polluter pays
- **Technical arrangements**



# ORGANIZATIONAL CONCEPTS



# European and Dutch Organizational principles

- Hydrological borders as an organizing principle
  - (sub-)river basin districts

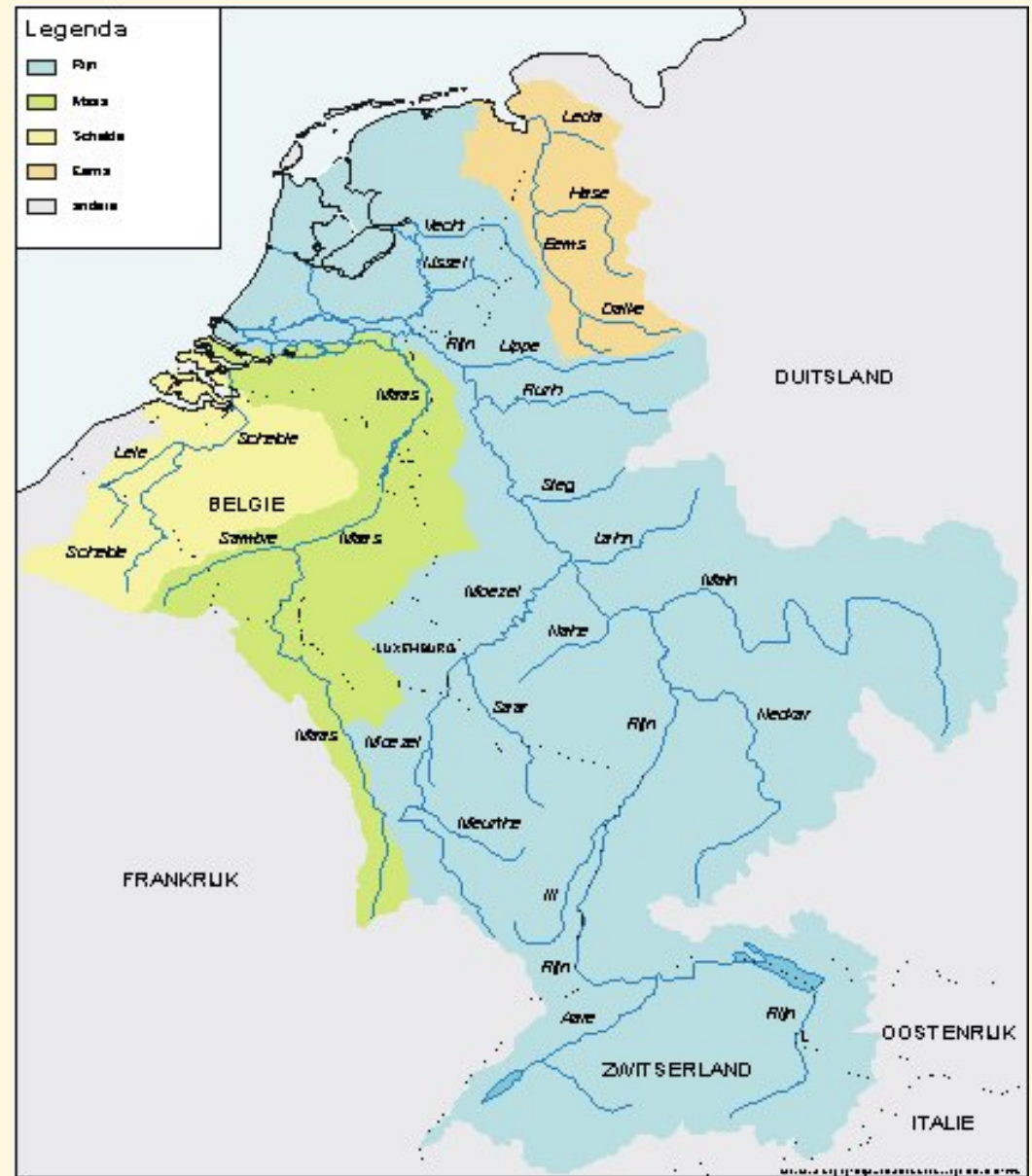


# Dutch Competent authorities

- Water management is a **shared responsibility**
- **Two water authorities** with management competences based on the Water Act:
  - **the Minister of Infrastructure and the Environment** (larger water systems including the marine environment) and
  - **26 Water Boards** (regional water systems and groundwater)
- **Provinces** have a role in strategic regional planning, coordination and supervision of municipalities and water boards, *competent authority for granting licences for large water abstractions (> 150,000 litres a year)*
- **Municipalities** have a duty of care for urban water management and land-use planning



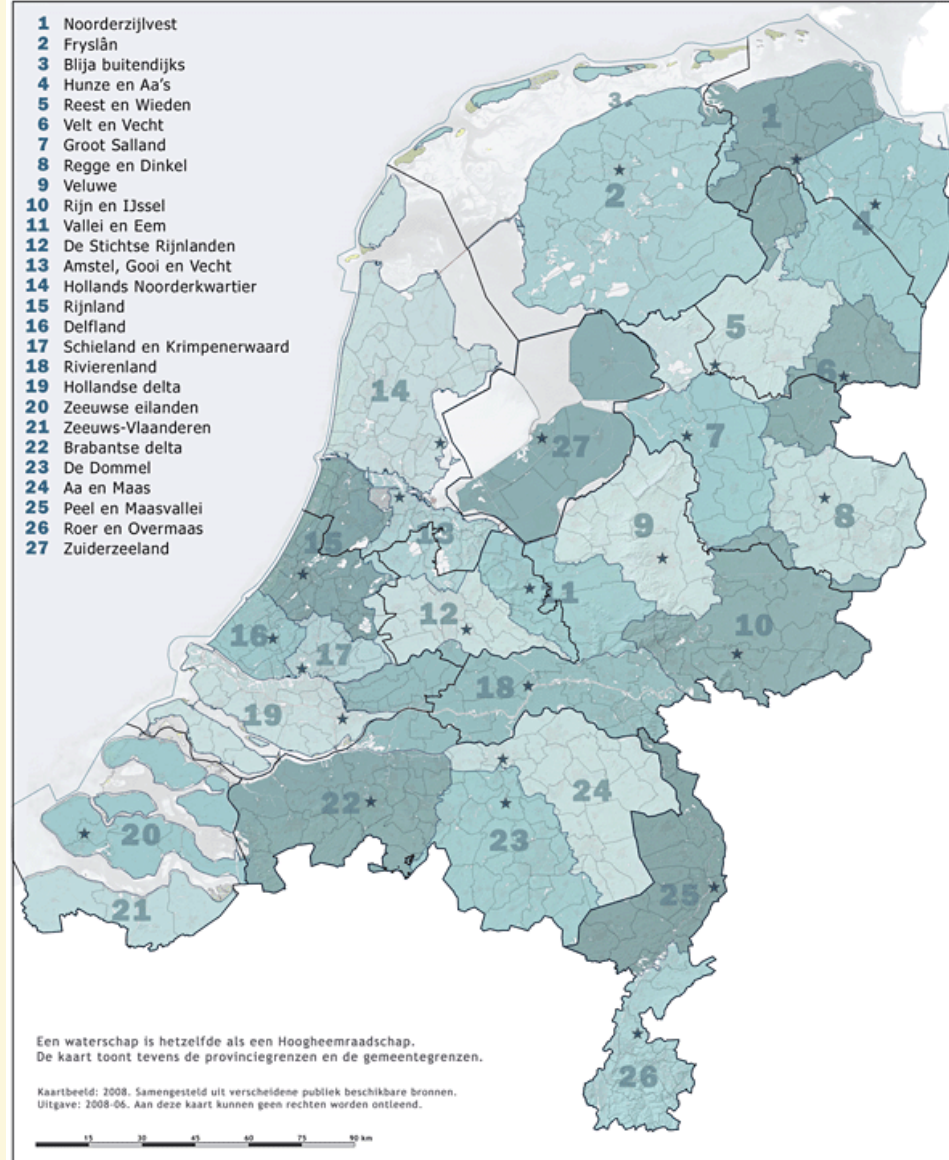
# River basins



# Water Boards

## 27 Waterschappen

- 1 Noorderzijlvest
- 2 Fryslân
- 3 Blija buitendijks
- 4 Hunze en Aa's
- 5 Reest en Wieden
- 6 Velt en Vecht
- 7 Groot Salland
- 8 Regge en Dinkel
- 9 Veluwe
- 10 Rijn en IJssel
- 11 Vallei en Eem
- 12 De Stichtse Rijnlanden
- 13 Amstel, Gooi en Vecht
- 14 Hollands Noorderkwartier
- 15 Rijnland
- 16 Delfland
- 17 Schieland en Krimpenerwaard
- 18 Rivierenland
- 19 Hollandse delta
- 20 Zeeuwse eilanden
- 21 Zeeuws-Vlaanderen
- 22 Brabantse delta
- 23 De Dommel
- 24 Aa en Maas
- 25 Peel en Maasvallei
- 26 Roer en Overmaas
- 27 Zuiderzeeland



# European and Dutch Organizational principles

- Involvement of the public in decision-making
  - Planning cycle
  - Public information and participation requirements
  - Dutch water boards: *stake, pay, say*





# European and Dutch Organizational principles

- Financial autonomy
  - EU: Cost recovery, polluter pays principle, user pays principle
  - At Dutch water board level; relation between stake – pay – say
  - but not at state level



# LEGAL ARRANGEMENTS



# Twofold Legal Framework: European and Dutch Water Law

European Union and the Netherlands have 1 legal order, European law always prevails

## **Europe:**

- European Water Framework Directive
- Directive on public participation and access to justice

## **The Netherlands:**

- Dutch Constitution,
- Water Act and
- Water board Act



# A (human) right to water?

- Not formally recognized in European legislation or the Dutch Constitution
- Realization of the right to water by normal legislation:
  - European directives and Dutch water
  - Substantial and procedural elements
- Combination of the right to water and common pool resource management



# The right to water: substantive elements

- protection of the quality of water: safe and free from micro-organisms and chemical substances
- accessibility to water and water services,
- sustainable and equitable use of scarce fresh water,
- (protection against flooding)
- (protection of ecosystems)
- a fair price for water services



# The right to water: procedural elements

- accessibility of relevant information,
- transparency,
- participation in decision making,
- accountability, and
- access to justice.



# Fair distribution: mechanisms

- First come, first served
- “Reasonable use”: but how to realize this?
- Quota
- Planning & Regulation
- Land-use planning
- Water pricing
- In the Netherlands we do **not** use (tradable) water rights



# European approach

- Communication of the European Commission on water scarcity and droughts:
- Pricing of water use
- Efficient allocation of water
- Drought risk management (by WFD)
- Integration of water interests in other policy fields
- Efficient water technology
- Stimulating Water saving
- Improvement of knowledge
- Water infrastructure works (last solution!)



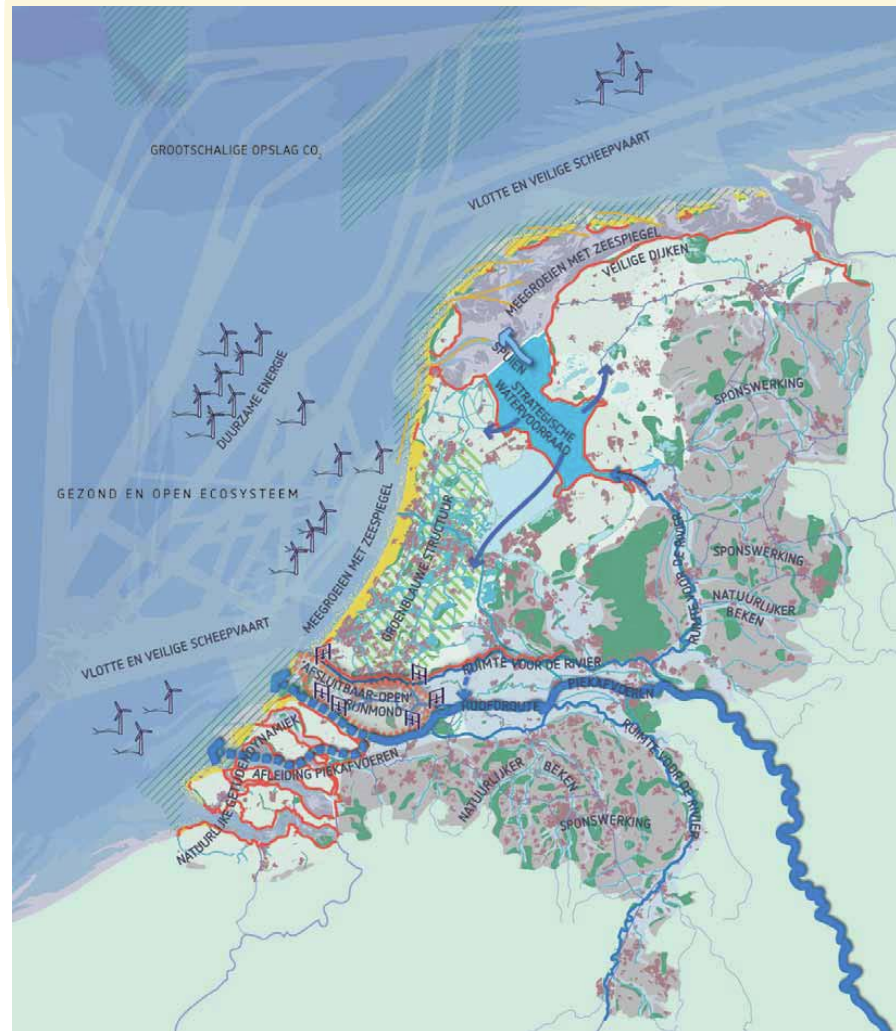


# Dutch approach

- Trying to realize a balance between supply and demand
- Planning (WFD/water plans)
- Legal ranking of water use in times of drought/water scarcity
- Licences
- Temporary prohibition of irrigation
- Water agreements
- Emergency plans
- Obligation to take water interests into account in land-use planning



# Planning National Water Plan



# Legal Ranking of Water Use

## **Regulated on the central level:**

1. Water safety and the prevention of irreversible damage to water works and nature
2. Guaranteeing Public services: 1. Drinking water Supply, 2. Energy supply

## **Regulated on the regional level:**

1. Small High-quality use: irrigation, industry, urban areas
2. Other use: shipping, agriculture, nature conservation, industry, tourism, fisheries, drinking water, energy, other use



# ECONOMIC ARRANGEMENTS



# Cost recovery of water services

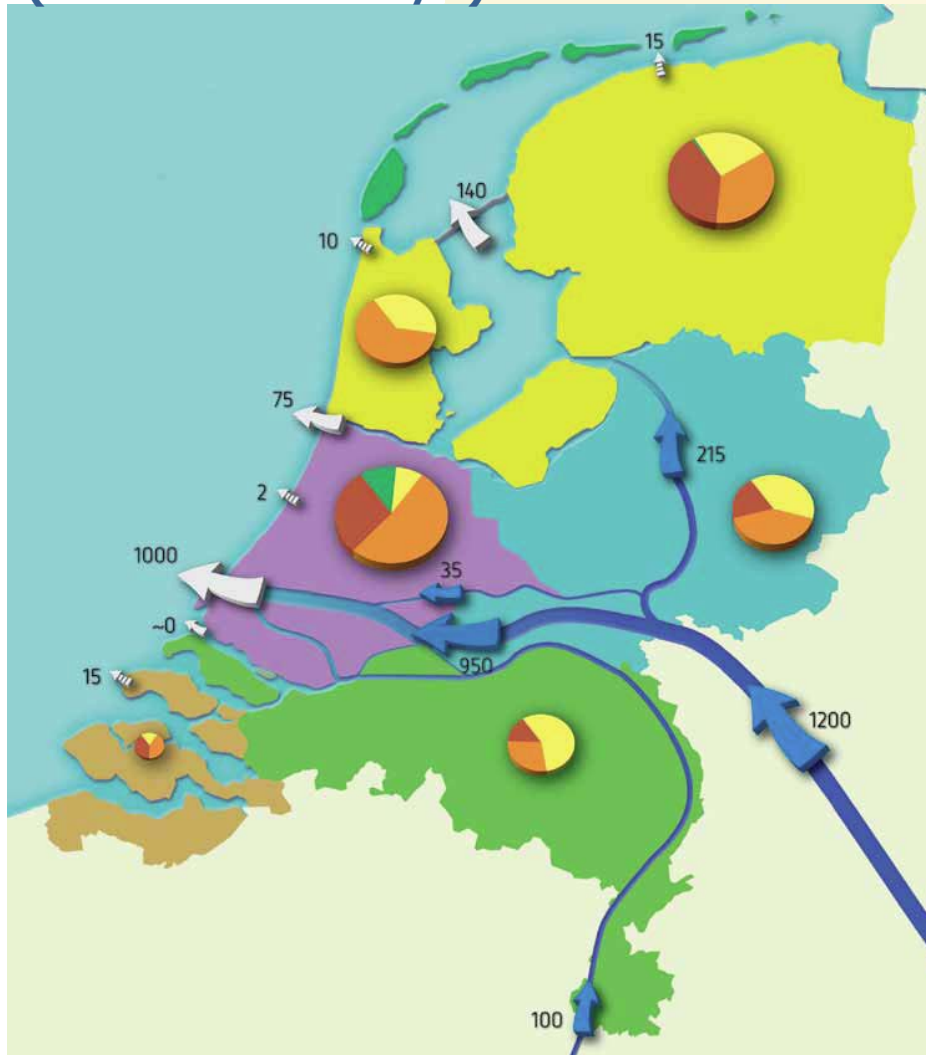
- Tax on the use of groundwater (not surface water!!)
- Paying for drinking water services (Euro 1.50 for 1000 liters of clean healthy water)
- Specific charges to pay the water boards for
  - - water system management (solidarity principle)
  - - the treatment of waste water (profit principle)
- General tax to pay the general government (not allocated for water management or water services)
  
- No tradable water rights!



# TECHNICAL MEASURES



# Technical measures: distribution of surface water (Rhine 1200 m<sup>3</sup>/s)



- Yellow: IJsselmeer
- Blue: Rhine, IJssel, Waal
- Green & Purple: Meuse
- Dark green: no water supply
- Brown: Lek, Brielse Meer and Amsterdam Rijn Canal

## Use:

- Orange: water levels in polders
- Yellow: agriculture
- Red: water management/flushing through
- Green: other



# Concluding remarks

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