



**Ministry of Environment  
and Food of Denmark**  
Environmental  
Protection Agency

# **History of NRW in Denmark**

- in the perspective of the No Drop Guideline

IWA – Water Loss 2018  
Cape Town, South Africa

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Water Resources

# Water Conservation and Demand Management in South Africa and Denmark

	<u>South Africa</u>	<u>Denmark</u>
Average water consumption Liter/capita/day:	238	106
National NRW: (%)	36,8	7,8

**What makes this difference?**

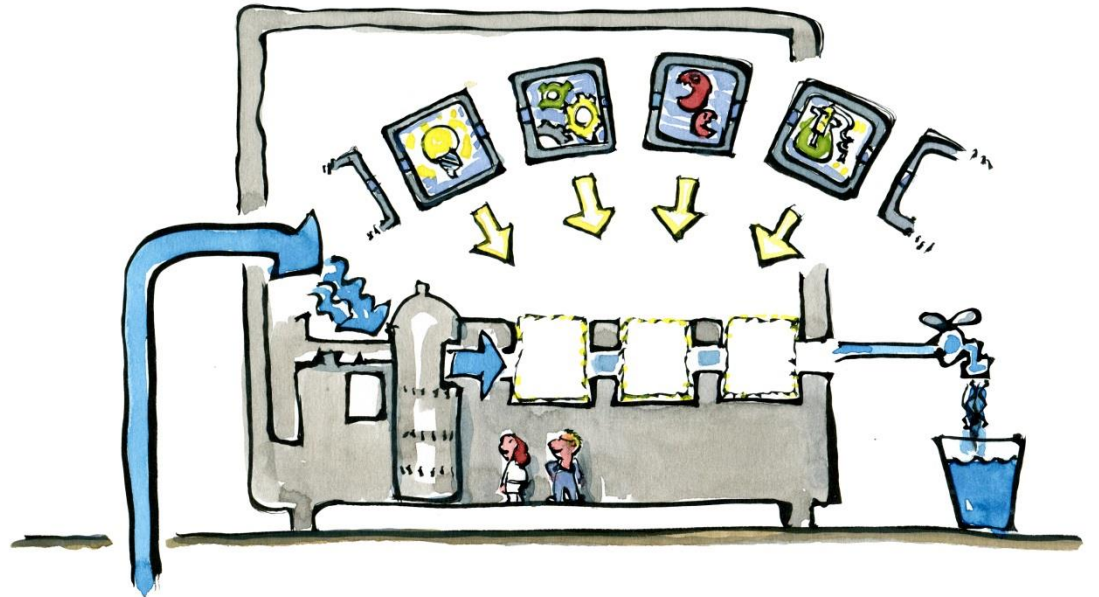


# The No Drop Program in South Africa

The No Drop Programme consist of a set of criteria – 7 criteria – which is used to assess, verify, and validate a municipality's water use efficiency.

The criteria are as follows:

- 1) Strategy and planning
- 2) Asset management
- 3) Technical skills
- 4) Credibility
- 5) Compliance and performance
- 6) Local regulations
- 7) Customer care



# A loooong period of time in DK towards low consumption and low NRW

- Water leakage in cities before 1980's of 25-50% was not uncommon
- Consumption was doubled as it is today
- Due to billing and metering in the late 1980's (by law) – every household had a meter installed
- All costumers pay their consumed water
- In 1998 the Danish EPA started regulating leakages by an economic penalty if leakage is above 10 % of produced water – called the water tax
- Water company test water meters every 6 years (by law)
- Danish utilities are skilled at leak detection, rapid response, repairs, and in pressure management, and advanced planning of pipe replacement (Asset Management)



## Criteria 1: Strategy and planning

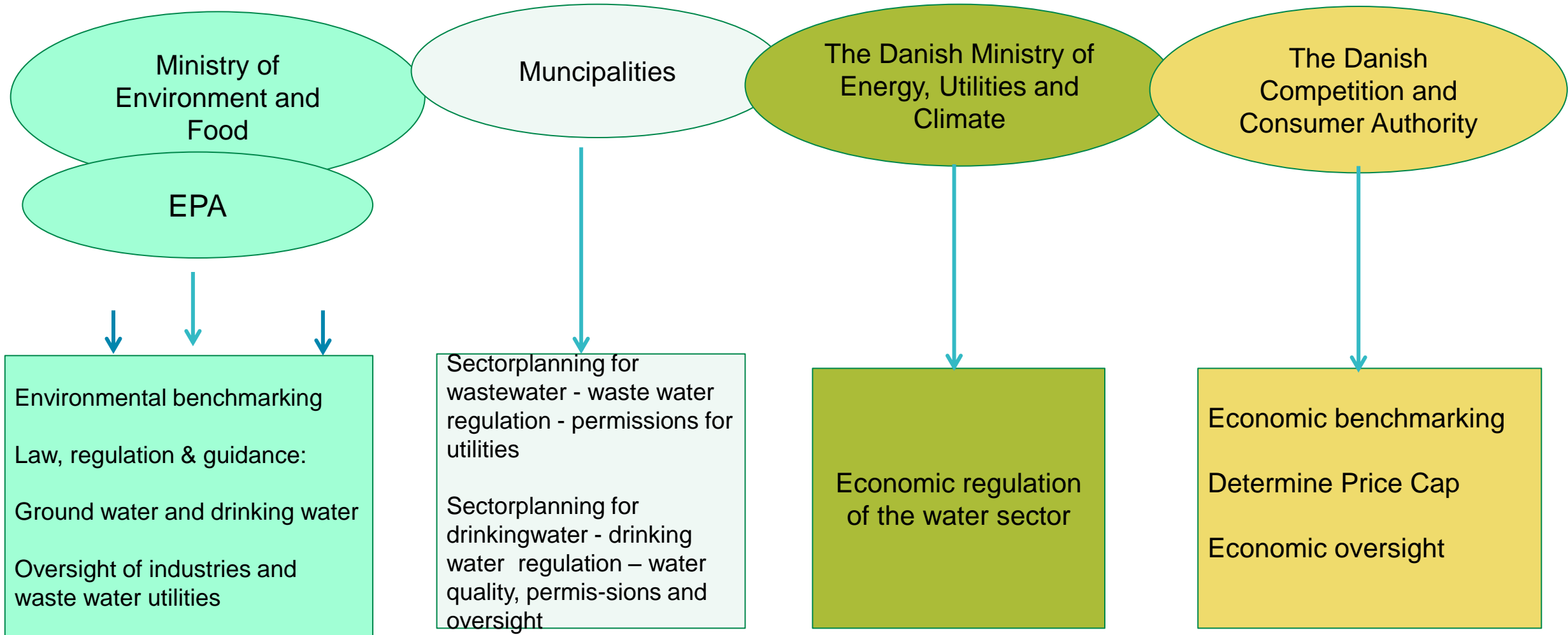
Due to the billing and metering in the late 1980's and a threshold of 10 % with penalty schemes for water-utilities running higher, Danish water utilities started focusing on and planning for:

- Water consumption
- Water balances – once a year
- Water security
- Water services
- Water losses
- NRW – non-revenue water

The strategy and planning has to comply with the water sectorplaning in the municipalities



# The Danish Water Governance Model



# The Water Sector Act 2009

The Act shall ensure that the water and wastewater supply is operated efficiently, transparent to consumers, provides the lowest possible, stable prices for consumers while supporting innovative development and demonstration and export of water technology solutions.

The Act will also help secure and develop a water and wastewater supply of high health and environmental quality, which takes into account security of supply, climate and nature.



## **Criteria 2: Asset Management**

**Danish utilities are skilled at leak detection, rapid response, repairs, and in pressure management, and advanced planning of pipe replacement**

**Advanced planning of pipe replacement**

**(Asset Management)**

**Water service infrastructure is operated and maintained in an efficient, affordable, equitable, economical and sustainable manner**





## Criteria 3: Technical skills

In 2013 the Danish EPA implemented the following Order:

Executive Order on Quality Assurance at General Water Supply

Which means:

- ◆ A water utility has the necessary capacity and skills to implement water demand management
- ◆ Which means the right operations and maintenance staff and personal
- ◆ Where a water utility shall cause the operator of a general water supply system to conduct a course on ordinary water supply and elementary water treatment hygiene.



## Criteria 4: Credibility

In 2013 the Danish EPA implemented the following Order:

Executive order on measurement technology control of meters used for measuring consumption of hot and cold water

Which means:

- Water utilities test water meters every 6 years (by law)
- All costumers connected to the distribution systems have meters installed – and costumers pay their consumed water after appropriate water tafiffs
- Accuracy of bulk and consumers meters



## Criteria 5: Compliance and performance

Drinking water utilities have service targets like:

- All leaks are fixed within 48 hours
- The implementation of pressure management and ensuring pressures in the distribution system not to exceed a certain value



## Criteria 6: Local regulation

- **Water utilities have the necessary policies and bylaws in place to support their water management program.**
- **Policies and bylaws promote water use efficiency among customers**
- **Policies and bylaws are enforced**



## Criteria 7: Customer care

- **Water utilities are actively promoting water use efficiency among it users**
- **The customer care centers and charters**
- **Community and schools awareness campaigns**
- **Stakeholder engagement**
- **The innovation to enhance revenue**
- **Transparency in prices**





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# Thank You