

# "MegaWater": A new Danish Water Enterprise

## DK Status:

Water research on all aspects of the water cycle performed mainly at universities. No national strategy

Water industry sector with few big players, many SME's and players which do not see themselves as part of the water business although working in the sector

Water consumers are interested and concerned but lacks understanding of what really matters (e.g. virtual water)

Politicians supportive at different levels but lacking an overall strategy and mainly doing "point actions"



# Global Water use and consumption

## Water resources

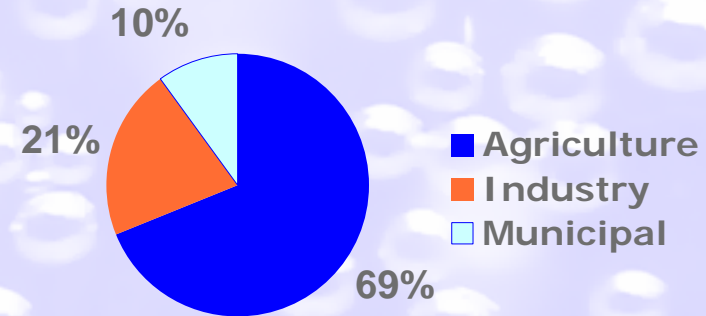


Freshwater

Compartment	%
Ice	69.3
Groundwater	30.3
Lakes and rivers	0.27
Soil	0.05
Atmosphere	0.04
Vegetation	0.003

## Water use

10 % of extractable fresh-water resources consumed:



Water Prod.

Produce	WP
Potato	8.0
Wheat	0.8
Chicken	0.15
Beef	0.06



# The global challenge

Water Scarcity – the lack of water of sufficient quality supplied at the proper location is the overall problem. The situation is severely aggravated by climate change and population growth.

What will make a difference?

- more efficient use of water in agriculture with less diffuse pollution
- cleaner technologies and low cost water cleaning
- better sanitation, supply, drainage and hygiene
- water reuse and recycling (e.g. in big cities)
- mechanistic modelling and forecasting across scales
- water for Nature (incl. biodiversity). Water and ecosyst. stability



# Startup of "MegaWater"

## Premise 1: Make a national strategy

Competences, organisations and challenges are known. Organise a national forum including politicians, researchers, consumers and funding agents which develops a long term strategy and operational plan.

- Ensure cross-disciplinary cooperation
- Ensure clear lines from basic research to applied research and demonstration
- Go international in all activities – almost all expansion has to take place on international markets
- Be open for "risky" projects and "crazy" ideas to generate new growth layers



# Startup of "MegaWater"

## **Premise 2: Cooperation between industry, water suppliers/consumers and research**

- Create an enabling and stimulating environment for cooperation and sharing of knowledge
- Ensure the necessary facilitative instruments are at hand
- Get the "blind passengers" involved (e.g. agriculture)

## **Premise 3: Public participation and branding**

- Be active with communication and increase awareness of water resources, use, scarcity and virtual water
- Public participation is the prime key to continued economic support (compare cancer research)



## 7 "MegaWater" goals

**Agricultural water:** New crops, irrigation, fertilizer, manure and recycling technologies, and water cleaning at the source

**City water:** Distribution, recycling, cleaning and water management in big cities

**Water cleaning technology:** Use of new separation and sorbent technologies (e.g. bio-/nanotech).

**Water monitoring:** New sensor and survey technologies providing data connected to ecosystem and human health impacts

**Modelling, forecasting and risk assessment:** Mechanistic models from farm to regional levels. Decisive for future land use (e.g. VFD).

**Climate, water and ecosystems:** Fundamental research on ecosystem stability and effects depending on water

**Water, society, trading and security:** water accounting and valuation is included in internat. trading agreements to ensure global sustainability and stability.

