

# Partnerships- water efficiency dairies and industrial production

- involving DTU Departments

Palle Lindgaard-Jørgensen DHI Industry  
Water DTU Partner Seminar, 18 May 2015

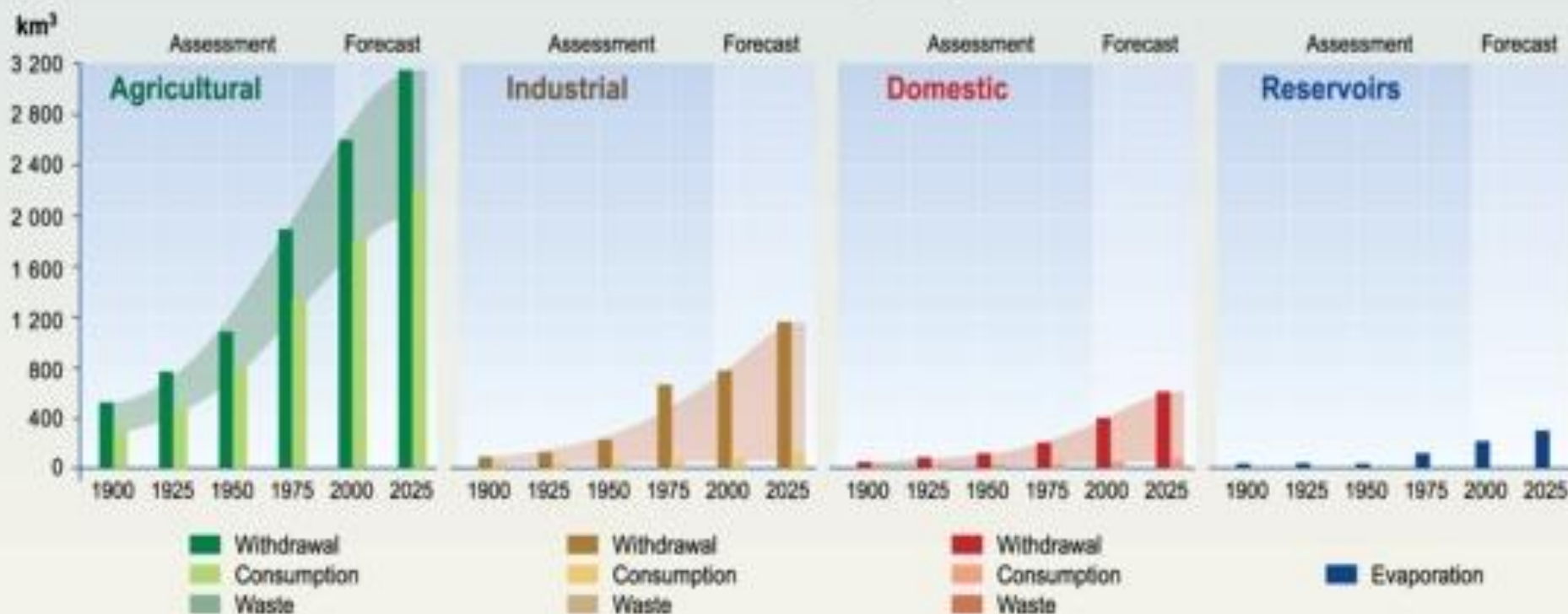


50 YEARS  
OF SOLVING  
CHALLENGES IN  
WATER ENVIRONMENTS



# Evolution of Global Water Use

## Withdrawal and Consumption by Sector



**Note:** Domestic water consumption in developed countries (500-800 litres per person per day) is about six times greater than in developing countries (60-150 litres per person per day).

PHILIPPE BOUAFIA  
FEBRUARY 2002

# Water use efficiency- on the Danish and international agenda

- SDG- subgoal on water efficiency
- EU Water Framework Directive- water reuse guideline
- BREF – EU BAT reference documents for industrial sectors
- Circular economy
- Innovation support (DK and EU)

# Water efficiency dairies-7,5 mio DKK



DTU Environment  
Department of Environmental Engineering



MEJERIFORENINGEN



KRÜGER



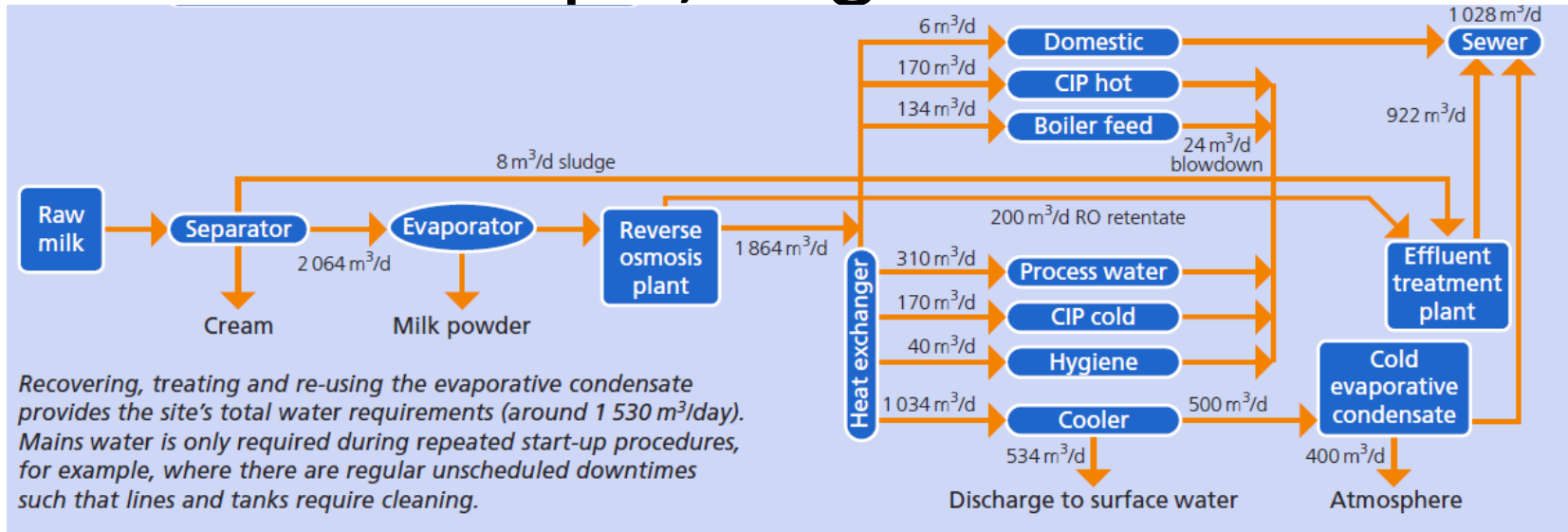
GRUNDFOS

DANSK ERHVERV  
DANISH CHAMBER OF COMMERCE

DTU Fødevareinstituttet

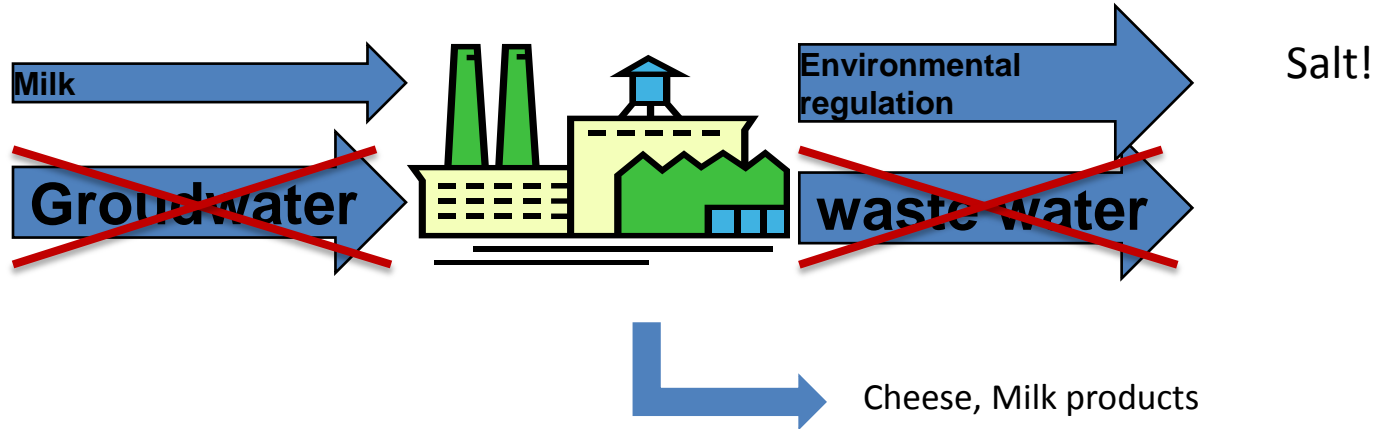


# A water efficient dairy : United Milk plc, England

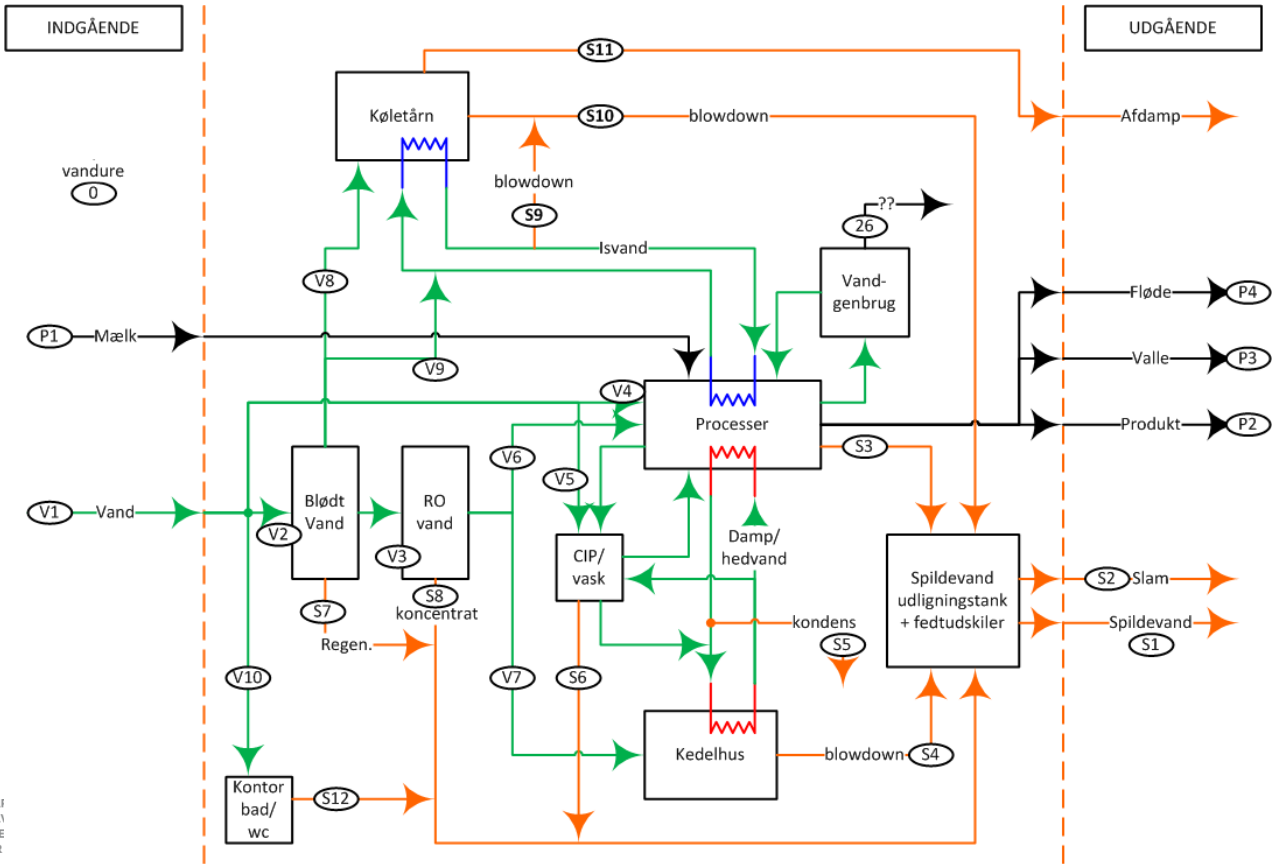


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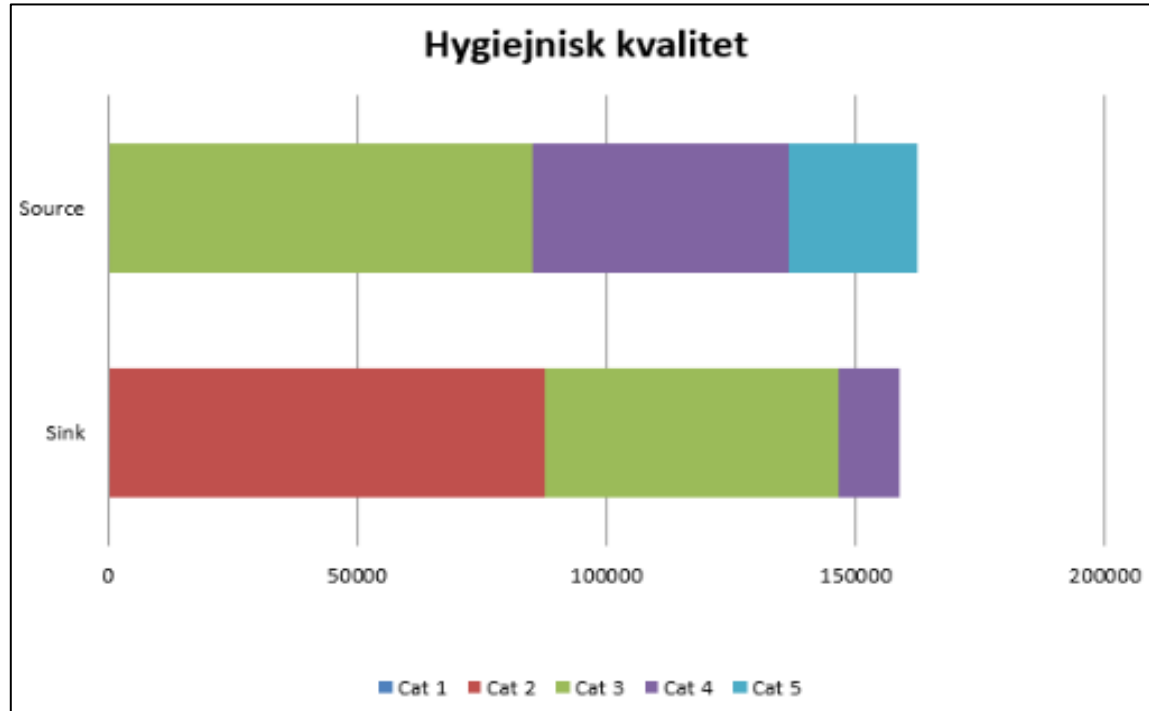
# Vision of the water efficiency dairy



# Detailed water mapping and monitoring

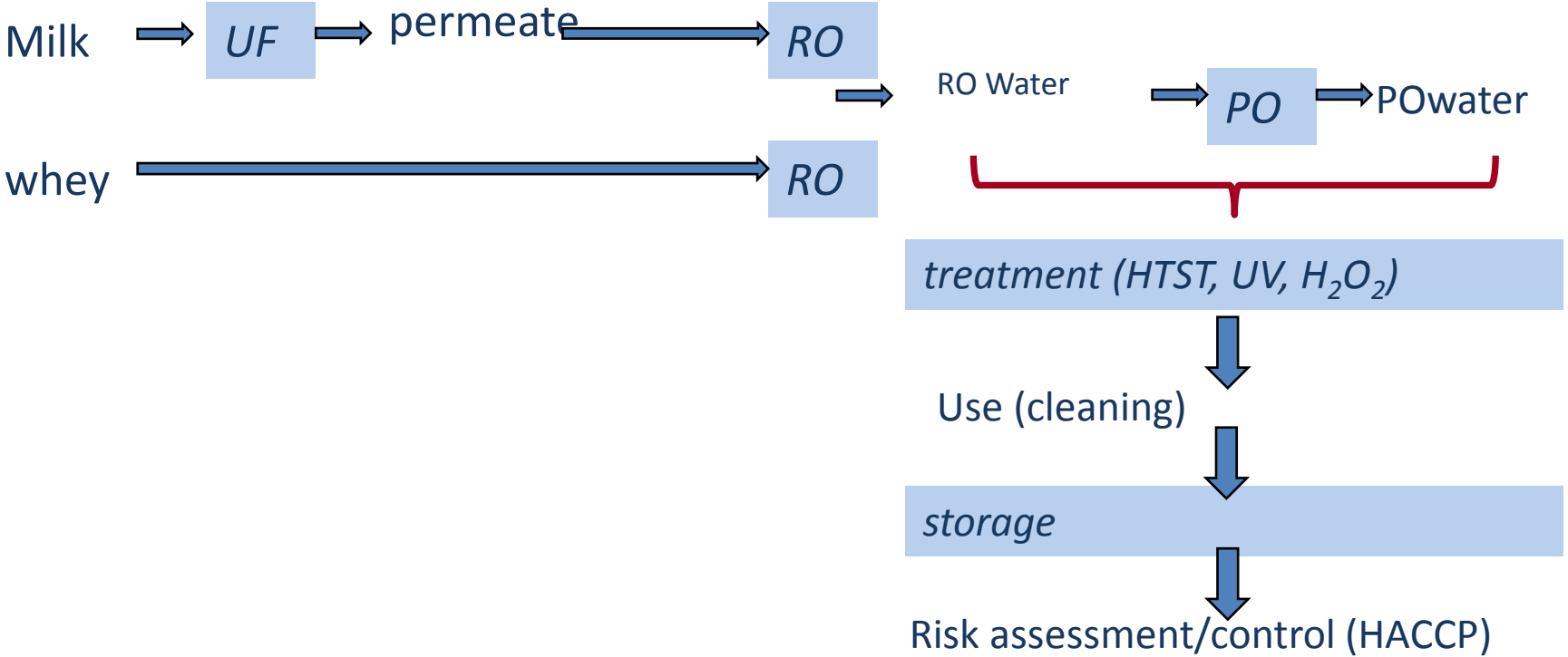


# Water- sinks and sources in a dairy





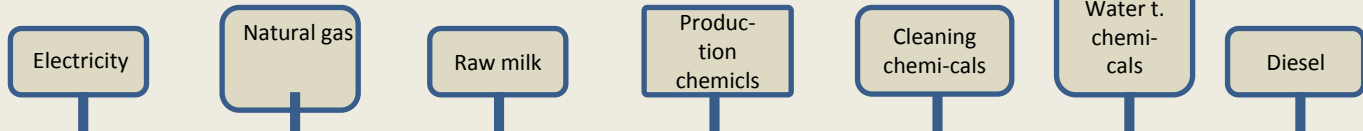
# Innovativ regulation- water reuse



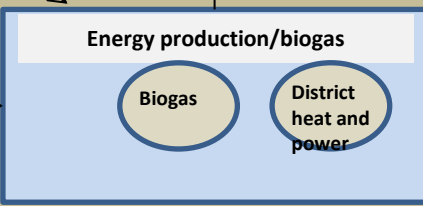
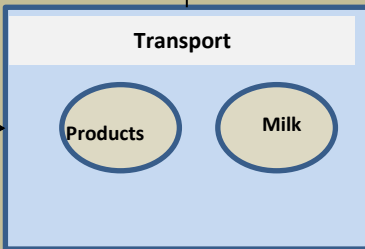
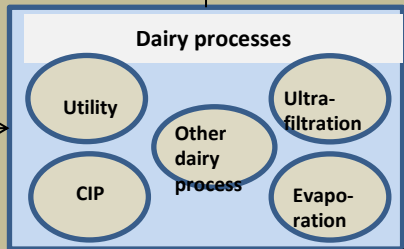
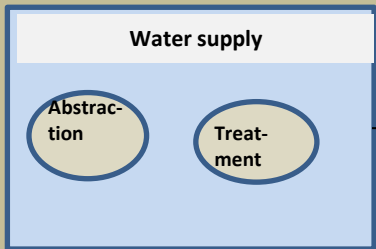
# System Analysis

Environment

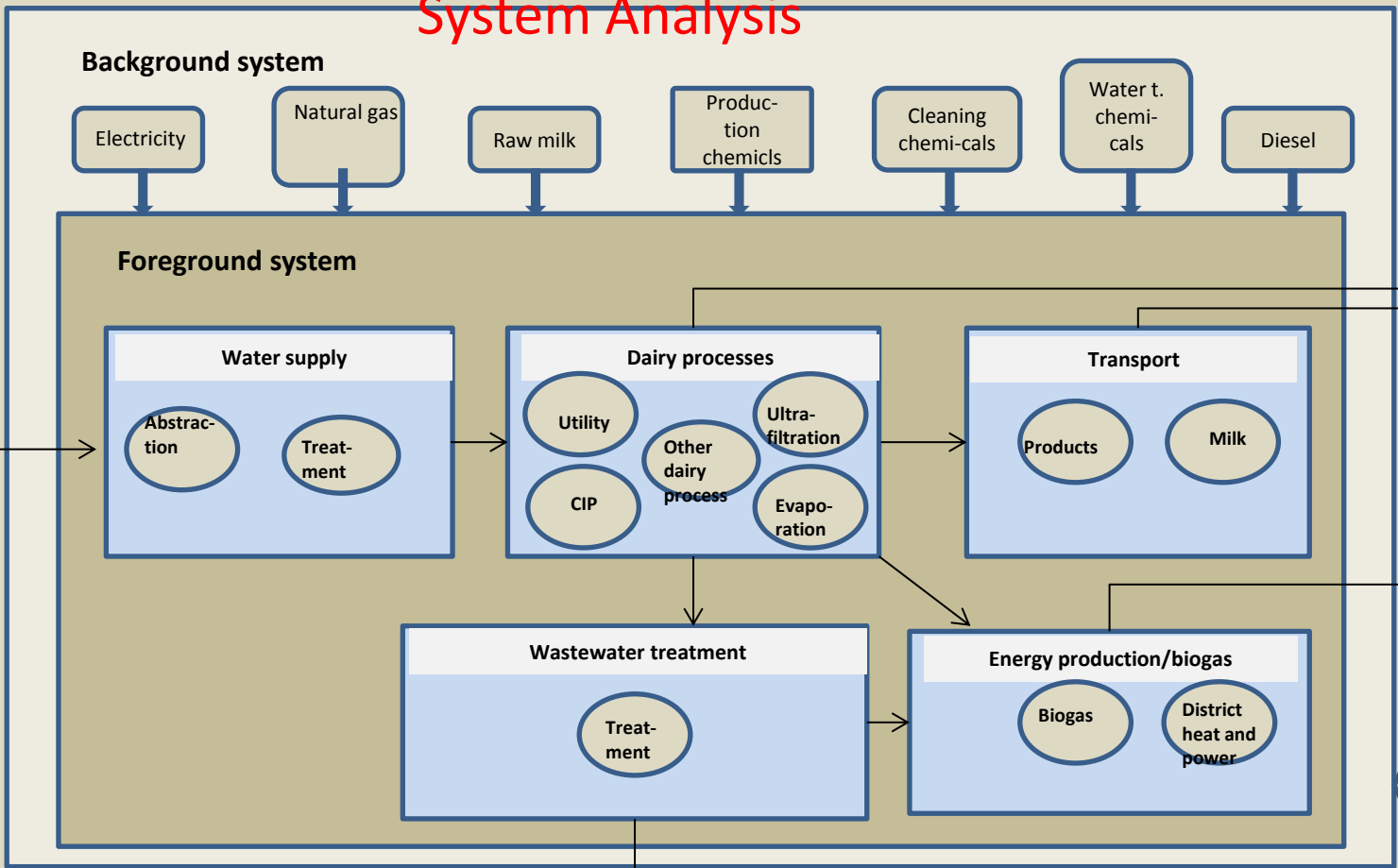
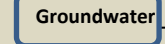
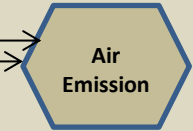
Background system



Foreground system



Emissions



# Inno+ Water efficient Industrial production

**19 partners:**

**8 technology providers**

**5 beverage/food processing industries**

**3 universities (DTU, KU, CBS)**

**2 GTS-institutes (DTI, DHI)**

**L&F**

**Innovation Fund DK**

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DKK 48m

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DKK 50m

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Total budget DKK 98m

# Partnership vision:

“By 2025 the most competitive water consuming industries are those that apply a **“water-fit-for-purpose”** concept and are heading towards highly efficient use of water, e.g. closed loop solutions, supported by **front-runner technology providers**, with the required level of **food quality and safety** and in accordance with **environmental regulations.**”

# Partnership structure

