Smart Water Sector

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Technological perspective – need to have educationally updated personnel to choose and maintain smart technologies and investments

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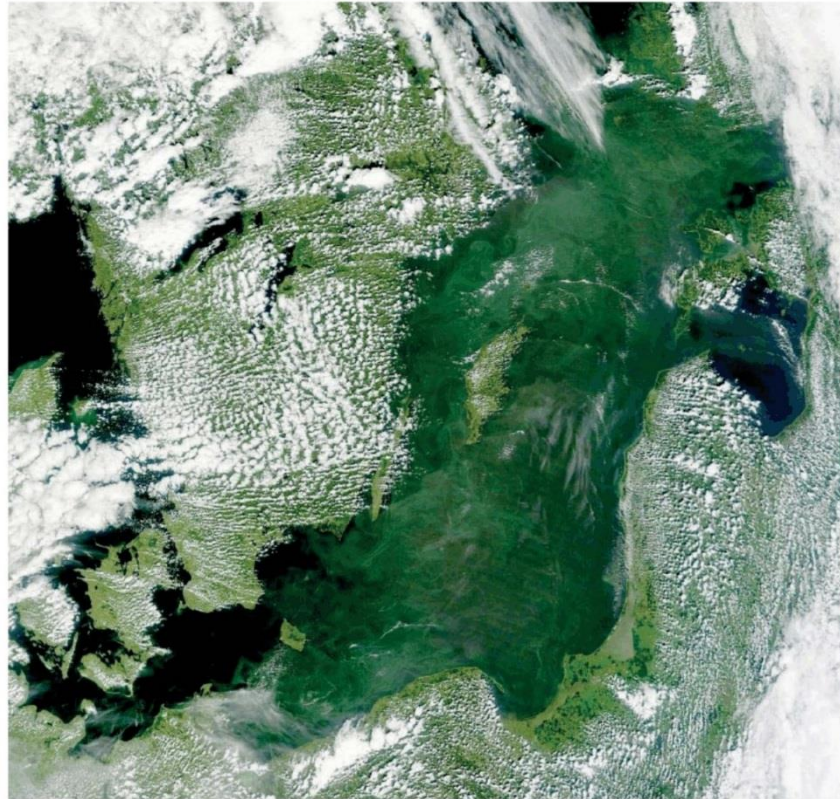
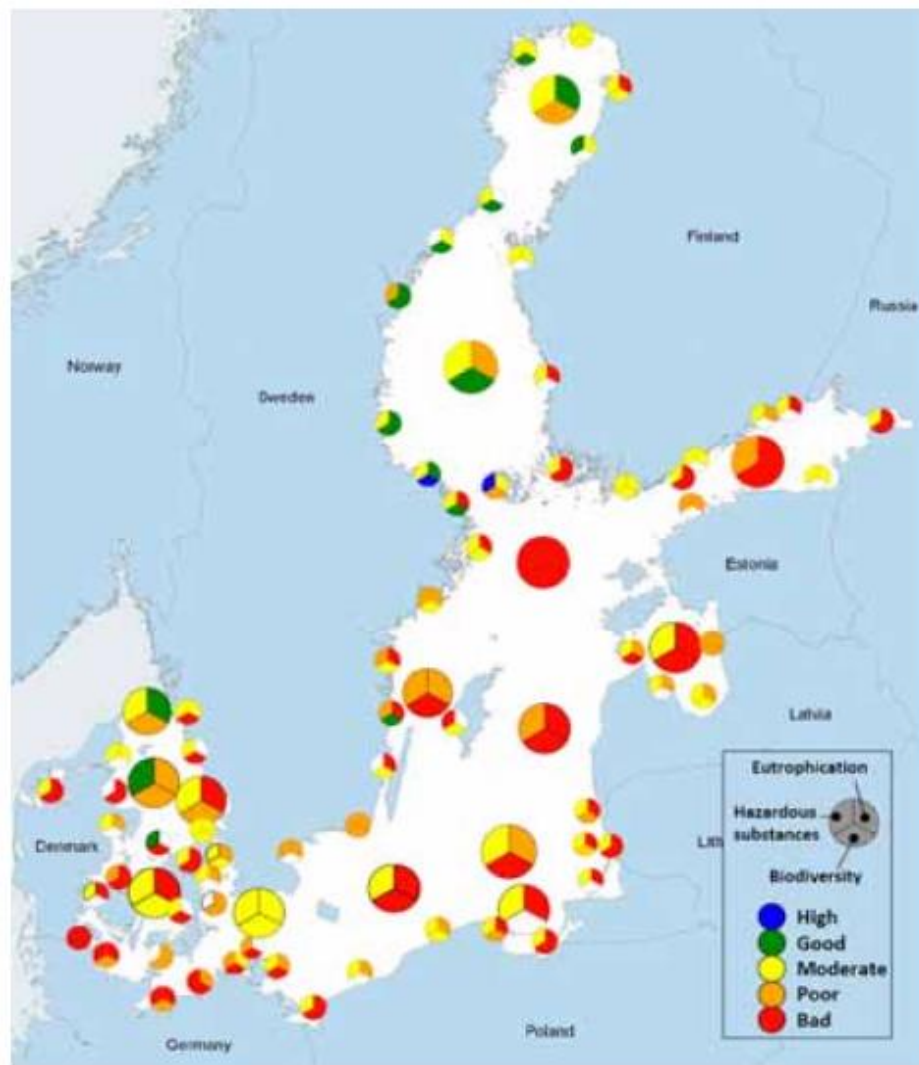Tel.: +49 / (0) 30 / 314 72356,
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Challenges in the Baltic Sea Region
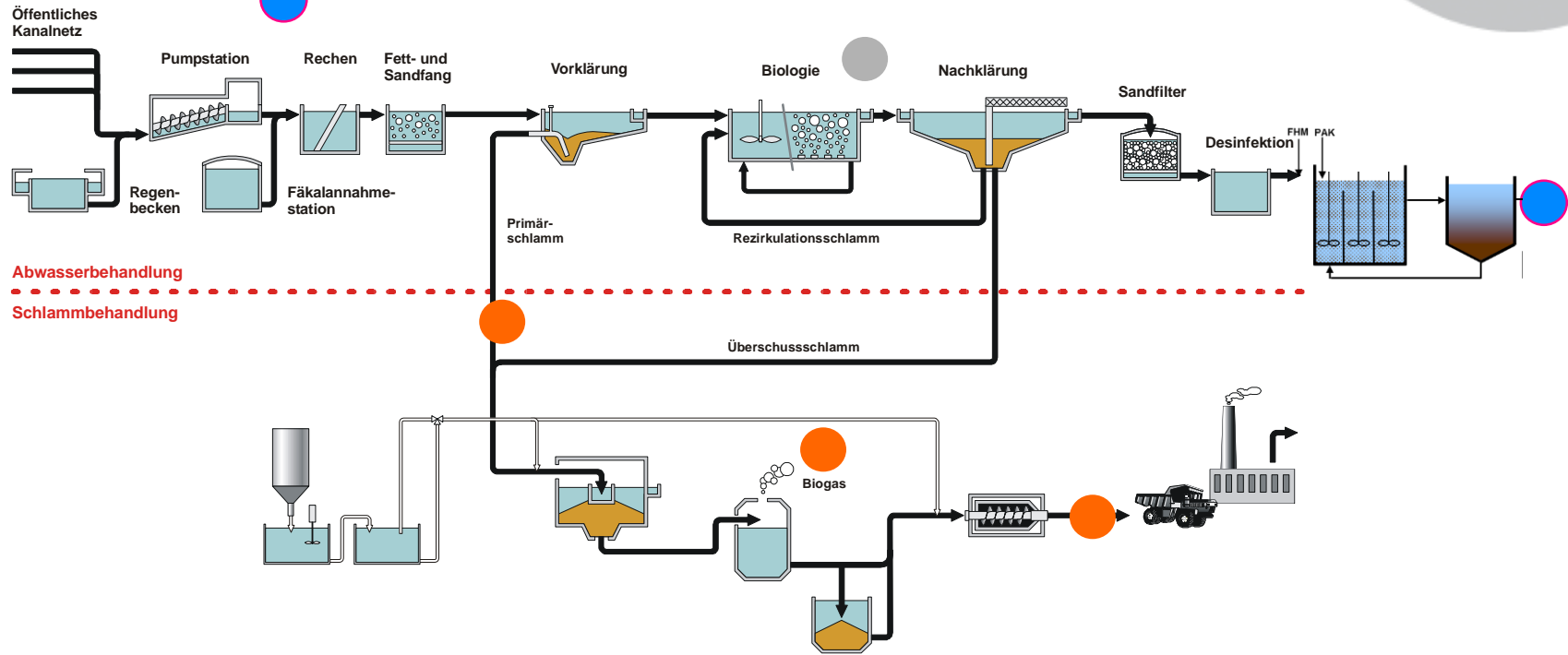

Source: LANCE – NASA/GSFC/ESDIS
via Umweltbundesamt

Status of the baltic see

Wastewater treatment plant (Example Pomorzany)

ZWiK Szczecin, 2017

Öffentliches Kanalnetz

Pumpstation   **Rechen**   **Fett- und Sandfang**   **Vorklärung**   **Biologie**   **Nachklärung**

Sandfilter

Desinfektion   FHM   PAK

Regen-becken   **Fäkalannahme-station**

Primär-schlamm   **Rezirkulationsschlamm**

Abwasserbehandlung

Schlammbehandlung

**Überschussschlamm**

Biogas

Flow Meter

Measurement and Control of nutrient removal

Measurement and Control of sludge treatment

Skill requirements

- **Qualified workers and engineers**
  - Operation of wastewater treatment facilities
  - Operation of electrical facilities
  - Mechanical education
  - Additional requirements for maintenance

- **Regular training recommended**
  - Updates regarding current processes
  - Capacity developement for future requirements
- **Knowledge about upcoming technologies**

Manpower requirements
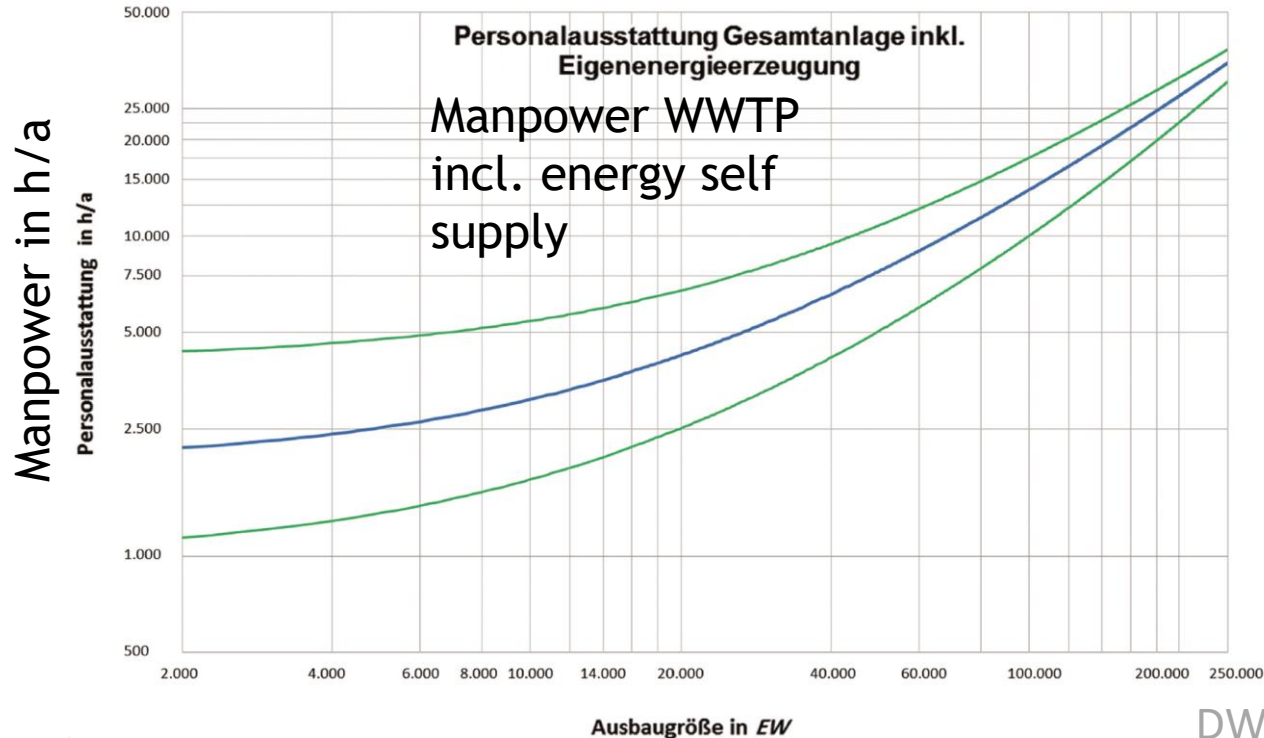
DWA-M 271, 2017
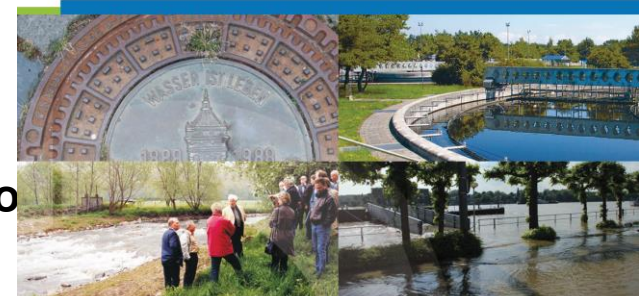
Lifelong learning example

- Since more than 40 years
- **Currently 320 neighbourhoods with approximately 7400 WWTP**
- **Exchange of experiences under guidance of representatives**
- **On-site problem-solving**
- **Regular further training (2-3 time per year**
- **Information about new regulations**
- **Enhancement of self-control and optimisatio procedures**
- **Motivation of the staff**
- **Cooperative support in requirements**

en.dwa.de

DWA

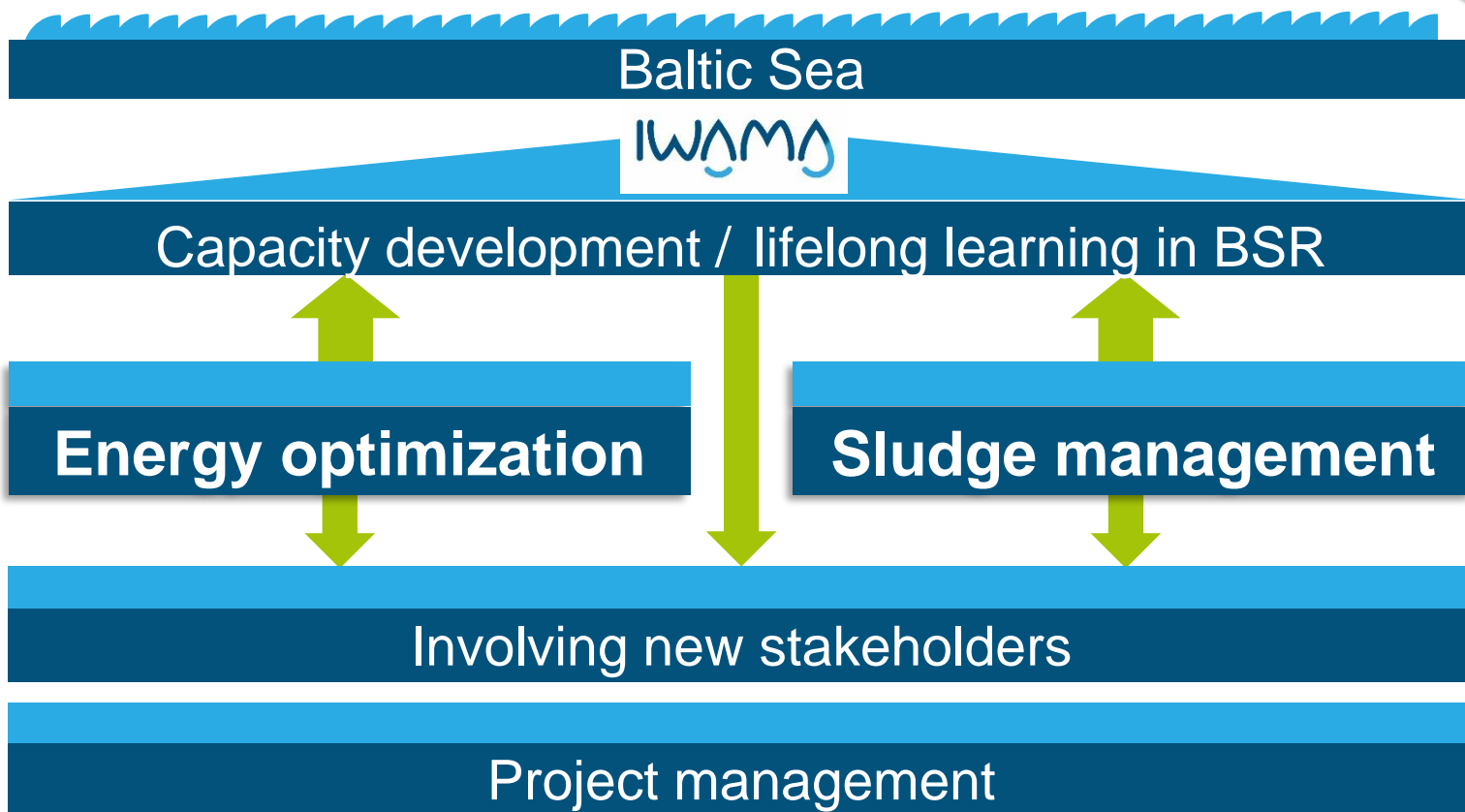**A Good Neighbourhood**
From the Sewer over the Wastewater Treatment Plant to the Water Bodies

Exchange of Experience and Training

Baltic Sea

IWAMA

Capacity development / lifelong learning in BSR

Energy optimization

Sludge management

Involving new stakeholders

Project management

Nutrient impact versus Energy

Aim: Good ecological status
        of the Baltic sea

- Eutrophication!

- Advanced removal of nutrients (HELCOM!)

- High energy demand for nitrification/denitrification

Reasons for energy optimization

- Finite nature of fossil resources

- Climate change
  - Increase of CO_2-Emissions
- Saving of operational costs

Cyanobacterial blooms in the Baltic Sea
MODIS AQUA 2005-07-11, data from NASA
processed by SMHI

Addressing energy potentials in water management

- **Collection and evaluation of key figure data**
  - Output: Key figure data for energy benchmark
- **Development and testing of an audit concept for smart energy management**
  - Output: Audit concept for smart energy management
  - Better knowledge and practical improvement
    - Lower nutrient impact lower energy demand
- **Piloting several new technologies for energy optimization**
- **Communications aims**
  - Changing behavior
  - Increasing knowledge
  - Raising awareness

Spotlight: specific energy consumption
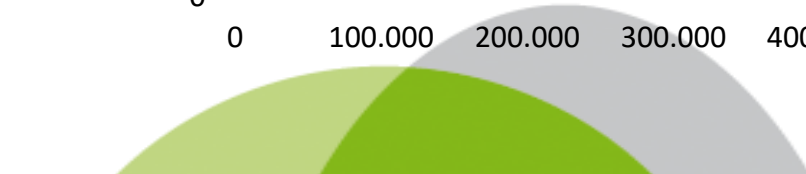
Summary

- **Continous task: Reducing nutrient loads to the Baltic Sea**
- **Challenges ahead require well trained, skillful staff**
- **Additional task: Establish capacity developement/lifelong learning**

- **Project IWAMA addresses both technological improvements and capacity development**