



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

A pan-European regional sanitation scoping study

Programme area 5 activities of
the PoWH 2017-2019
programme:

*"Safe management of water
supply and sanitation systems"*



Bilthoven 2017

Pan-European Symposium on
**Water and Sanitation
Safety Planning and
Extreme Weather Events**

6-7 April 2017, The Netherlands



6-7 April 2017, Organized the 1st symposium on Water and Sanitation Safety Planning and Extreme Weather Events at RIVM in Bilthoven

Focus on the Pan-European region. 60 participants from the region:

- Policy-makers/regulators (Mainly from the Health or Infrastructure Ministries)
- Operators; drinking water en waste water
- Scientific community: Climate Change, Water technology, Sanitation and Health
- Development agencies



Take-away lessons from the WSSP Symposium

- The symposium attracted a large scope of expert presentations on a vast array of topics– from data on heating of dw-pipes, to public investment in rainwater harvesting and integrated assessment tools...
- Big data – small data and to user-friendliness Keynote Pier Vellinga: *“There is a deficit in Climate Adaptation in the European region. **Scientific data needs to be translated into applicable guidance for local level**; where adaptation will/should happen”*
- Climate-resilient **Water Safety Plans can be used as a overall guidance to increase water supply resilience** by incorporating climate impact data assessment tools and data (DRR, CVAs) at the right moment.
- **Sanitation Safety Planning and Water Safety Planning could be futher integrated** at the city-level and small-holder, community level



Why is sanitation of interest to the region?

- Of the 50 (of 68 listed) countries within WHO European region (Europe and Central) that provided data in 2015 (JMP WHO/UNICEF):
 - 12 have achieved 100% improved sanitation coverage
 - 31 have achieved more than 90% coverage
 - 7 have coverage of improved sanitation below 90 % but not lower than 72%

- About 62 million people lack access to adequate sanitation facilities in terms of functioning toilets and safe means to dispose of human feces.
- Approx. 1.7 million people in 11 countries practice open defecation
- Environmental concerns (AMR, emerging contaminants), scarcity and reuse, increasing flood events ...
- **From MDGs to SDGs - From access to reduce and reuse!**



Scoping Study: “Sanitation in the pan-European Region 2018”

Scope

- Overview of sanitation practices in the pan-European region
- Health and environmental impacts of current sanitation practices
- Sanitation policies and practical implementation

Dual process: Systematic literature review & grey literature review

- Scientific Literature
 - Embase
 - Scopus
- Grey literature
 - UNECE Environmental Performance Reviews,
 - WHO/UNICEF JMP
 - GLAAS
 - OECD
 - Protocol on Water and Health country reports, etc.



Systematic literature review method

Three main questions:

1. TECHNOLOGY

What types of sanitation facilities, collection and treatment systems are used in the region?

2. ENVIRONMENT

What is known about (untreated) wastewater and its fate in the environment?

3. REUSE & RECOVERY

In which areas of the region does waste water reuse play a role and how?

- EMBASE and SCOPUS databases
- English, Russian, French, Spanish, German
- Publications from 2007 to 2017
- Geographic locations of cases in studies are of major interest

- Grey literature review focus on 15 countries



Sanitation Technology

- ***What types of sanitation facilities, collection and treatment systems are used?***
- PoWH targets set on access to sanitation: 19 of 25 countries set targets on improving access upgrading sewerage or treatment system
- Focus is on cities mainly.
- Main challenge - lack of adequate funding to cover high investment costs (of sewerage systems)
- Many countries indicate missing baseline assessment data

Examples

- Lienert, J., & Larsen, T. A. (2009). High acceptance of urine source separation in seven European countries: a review. *Environmental science & technology*, 44(2), 556-566.
- Republic of Moldova case - target on developing small scale sanitation systems such as Ecosan toilets, constructed wetlands and septic tanks in rural areas.



Environment

- **What is known about (untreated) wastewater and its fate in the environment?**
 - 18 out of 26 countries set targets under the Protocol on Water and Health to reduce untreated discharge – link to SDG 6.3
 - Attention rising for accidental discharge due to climate change (CSO's) – planning for the future

Examples

- Bosnia and Herzegovina baseline study for the UWWT directive showed that 5% of population was connected –many WWTP were not in operation
- Loos, R. et al (2013). EU-wide monitoring survey on emerging polar organic contaminants in wastewater treatment plant effluents. *Water research*, 47(17), 6475-6487.
- Sterk, A. et al. (2016). Climate change impact on infection risks during bathing downstream of sewage emissions from CSOs or WWTPs. In: *Water research*, 105, 11-21.



Reuse and Recovery

➤ In which areas of the region does waste water reuse play a role and how?

- 13 countries set targets to prepare regulations for reuse mainly.
- Legal and regulatory issues around reuse at the local/national level, while many research and pilot project are known - EU regulation with minimum requirements underway

Examples

- Incineration and energy recovery - Switzerland, agricultural reuse for nutrient recovery and soil conditioning - Israel, Norway and the Republic of Moldova
- *Optimising water reuse in the EU—Final report prepared for the European Commission (DG ENV) (2015)*
- S. Lavrnić et al (2017) Water Scarcity and Wastewater Reuse Standards in Southern Europe: Focus on Agriculture. In: *Water, Air & Soil Pollution* 228 (7): 251



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