Interreg Baltic Sea Region

EUROPEAN UNION
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VillageWaters

Panel session:
Wastewater treatment in sparsely populated areas by social, environmental and economic aspects

VillageWaters mid-term seminar, period 4
Warsow
4th of October 2017

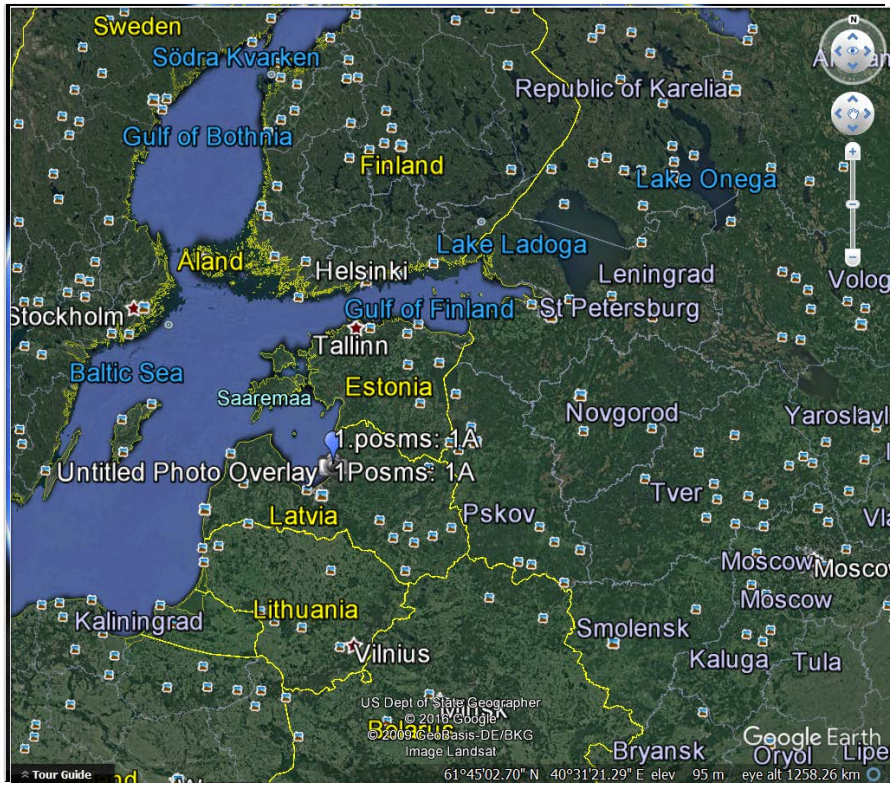
Participants

- Leader of the discussion: Doc. Loreta Urtāne (University of Latvia, Latvia)
- Panel participants
  - Estonia: Prof. Arvo Iital and Doc. Niina Dulova (Tallinn University of Technology)
  - Finland: Prof. Tuula Tuhkanen (University of Jyväskylä) and M.Sc. (Tech.) Vesa Arvonen (SYKLI Environmental School of Finland)
  - Latvia: Doc. Aleksej Perscov and Prof. Ivars Kudrenickis (University of Latvia)
  - Lithuania: Head of Institute Algirdas Radzevičius and Director Andrius Kairys (Aleksandras Stulginskis University)
  - Poland: Prof. Andrzej Eymontt (Institute of Technology and Life Sciences in Falenty) and Prof. Ryszard Błażejewski (University of Life Sciences in Poznań)

Agenda

- Short introduction of the participants
- Short introduction of the topic
- Discussion (questions for the panel participants by the leader)
- Questions by the audience
- Summary

What we are doing with the Baltic Sea?



The Baltic Sea is one of the most vulnerable and polluted seas in the world.

- Eutrophication is a major problem in the Baltic Sea.

What we are doing with the Baltic Sea?

Since the 1900s, the Baltic Sea has changed from an oligotrophic (nutrients less) clear-water sea into a eutrophic (nutrients rich) marine environment.

Eutrophication is caused by increased nitrogen and phosphorus loads from the diffuse and point sources

What we are doing with the Baltic Sea?

According to Baltic Sea Action Plan:

WE AGREE on the following country-wise provisional nutrient reduction requirements:

According to Baltic Sea Action Plan:

	Phosphorus (tonnes)	Nitrogen (tonnes)
Denmark	16	17,210
Estonia	220	900
Finland	150	1,200
Germany	240	5,620
Latvia	300	2,560
Lithuania	880	11,750
Poland	8,760	62,400
Russia	2,500	6,970
Sweden	290	20,780
Transboundary Common pool	1,660	3,780

What we are doing with the Baltic Sea?

According to Baltic Sea Action Plan:

Dispersed settlements without water treatment facilities/with limited treatment are recognized as the third most important source of Baltic Sea non point pollution agents

Key words:

- Dispersed settlements
- Improved treatment of sewerage water

the facility is properly managed. Following this principle ensures that the wastewater will be recycled safely and at a practical cost.

Questions for the panel participants by the leader

Maybe there is no time to go through all questions, so the questions will be asked in the following order. Participants should remember the following things before the discussion and also you could find out answers to the questions beforehand. How this topic is related to their country, what is the situation of wastewater treatment in sparsely populated areas in each participant country? Please remember to notice the topic of the speech: social, environmental and economic aspects of your country. You can give some general view of the situation, some numbers/statistics. It would be important to share good things to other countries.

At this point of view we would like to challenge our panellists with few questions.

1. How EU legislation has been implemented in your countries?

-What is the state of the implementation?

-What are your future plans regarding to implementation?

-What would be expected as a result of implementation?

2. What is the situation of wastewater treatment in sparsely populated areas in each participant country? What treatment systems are generally used and what should be changes? Describe some burning problem in wastewater treatment in private systems/households for instance from sosio-economic point of view, and give some ideas how to solve them.

3. Many small and rural communities struggle with aging wastewater treatment systems. Which on-site wastewater treatment system would be the cheapest and easiest and sufficient to be used for four family small stock house?

4. Which on-site wastewater treatments system has the best nutrient removal efficiency?

5. What is the state of public awareness, behaviours and attitudes towards on-site wastewater treatment systems in your country?

6. How environmental, social and economical issues are taken into account in waste water treatments issues in your country?

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How EU legislation has been implemented in your countries?

1. Establishment of preconditions for improved treatment of sewerage water.

- Development of legal framework and seting of more strict requirements.

1. Establishment of preconditions for improved treatment of sewerage water. Development of legal framework and seting of more strict requirements.

Latvian Water Policy has undergone a long restructuring process to comply with requirements set by EU Water Sector directives.

Minimal requirements of EU Directives have been implemented already:

- Treatment of sewerage water → Urban waste water directive
- Vulnerable zones & sensitive areas

1. Development of legal framework and seting of more strict requirements

Parameter and reduction requirements	Size of agglomeration			
	< 200 PE	200–1999 PE	2000–9999 PE	> 10 000 PE
BOD_5/BOD_7	appropriate treatment	appropriate treatment 50–70%	25 mg/l 70–90%	25 mg/l 70–90%
COD	appropriate treatment	appropriate treatment 50–75%	125 mg/l 75%	125 mg/l 75%
Total suspended solids	less than 35 mg/l 90%			
Total nitrogen	appropriate treatment	appropriate treatment 10–15%	15 mg/l 70–80%	10 mg/l 70–80%
Total phosphorus	appropriate treatment	appropriate treatment 10–15%	2 mg/l 80%	1 mg/l 80%

1. Development of legal framework and seting of more strict requirements

- **Latvia:** Since 2004 the reduction of urban waste water loads was focused mainly on biggest agglomerations.

- Targeted value is 95% population connection to centralized collecting system;
- Appropriate sewerage treatment in agglomerations with PE > 2000

1. Development of legal framework and seting of more strict requirements

- **Latvia:** At present WWT plants with a capacity > 20 m^3/day are strictly controlled and treated water discharged to environment correspond to requirements set.
- Nevertheless there are around 750 settlements, where the number of inhabitants is < 2000 and where around one third of Latvia's population lives.

1. Development of legal framework and seting of more strict requirements

Latvia: *Environmental Policy Guidelines for 2014–2020:*

- Development of water legislation for improved water service in small agglomerations, including treatment requirements
- Increased availability of centralized water services in small agglomerations

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2. What treatment systems are generally used in private systems/households and what should be changes?

- Problem in wastewater treatment in private systems/households, including:
  - Social,
  - Economic,
  - Environmental aspects
- Ideas how to solve problems

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3. Many small and rural communities lacking sewerage treatment or has old generations wastewater treatment systems.

- Which on-site wastewater treatment system would be the cheapest and easiest and sufficient to be used for four family small stock house?

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- 4. Which on-site wastewater treatments system has the best nutrient removal efficiency?

- Social,
- Economic,
- Environmental, and
- Technical aspects

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- 5. What is the state of public awareness, behaviours and attitudes towards on-site wastewater treatment systems in your country?

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- 6. How environmental, social and economical issues are taken into account in waste water treatments issues in your country?

Thank you!

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