

# Experiences from Latvian Pilot activities

## Pilot sites – Svētciems and Ainaži

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# Experiences from Latvian pilot activities

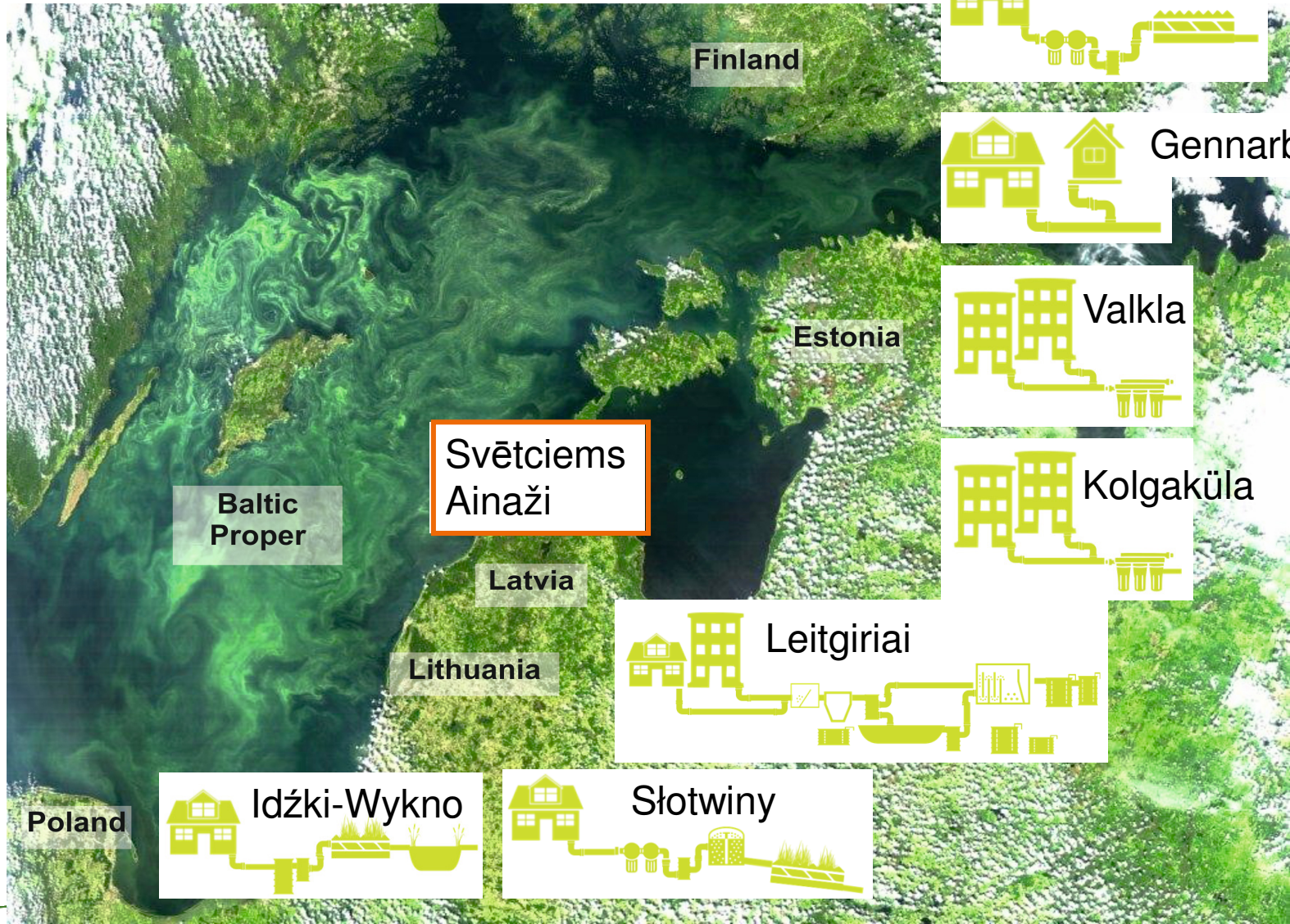
The folk tales usually starts  
“Once upon a time ....”

*Once upon a time, Pollution demons have been taking over the waters of the Baltic Sea. Then arrived project VillageWaters who proposed to set objective*  
“to contribute to the Baltic Sea eutrophication reduction and establish preconditions to reduce nutrient load from scattered dwellings»

# VillageWaters objectives

It was an ambitious objective such as eutrophication is led by N and P, but its reduction is not required for small WWT facilities.

In order to demonstrate the improved wastewater treatment possibilities 9 pilots were constructed in the 5 pilot countries.



Nurmijärvi

Gennarby

Valkla

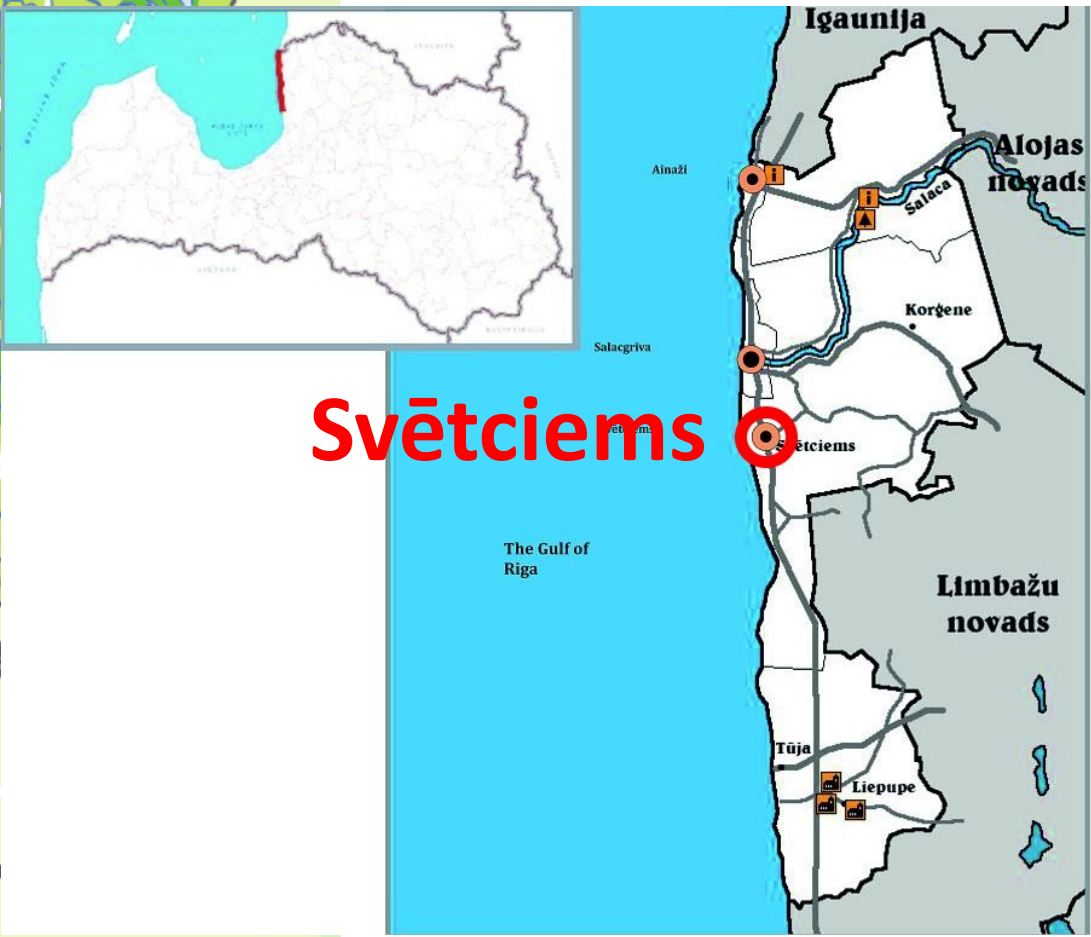
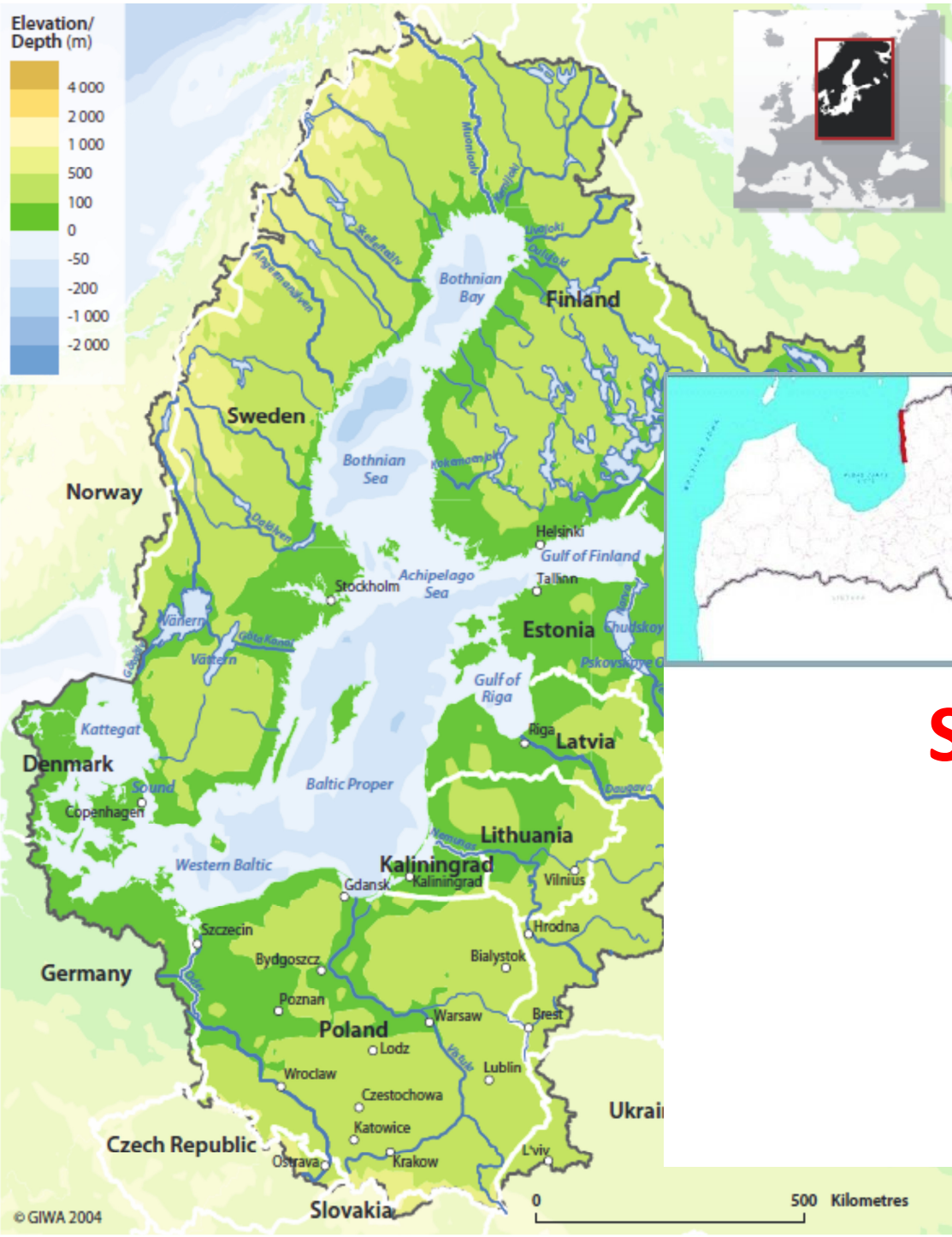
Kolgaküla

Leitgiriai

Idzki-Wykno

Slotwiny

Svētciems  
Ainaži



# Experiences from Latvian Pilot activities

## Svētciems



The settlement Svētciems is located on the banks of river Svētupe.

In translations from Latvian:

- Svētciems is Holly Manor
- Svētupe is Holy River

# Experiences from Latvian Pilot activities

## Svētciems

This is very special place not only historically.

The Pilot area is:

- located within North Vidzeme Biosphere Reserve;
- approximately in 1 km distance from the Gulf of Riga;
- River Svētupe (recipient of wastewater) is salmonid river.

Due to these preconditions, Svētciems was selected to be 1<sup>st</sup> pilot site.

# Information about the Pilot – old WWTP Svētciems

- Year of construction: **1984**,  $Q_n = 2 \times 100 \text{ m}^3/\text{day}$
- Type of WWTP: **2 × BIO100 aeropacks + biological polishing ponds**
- Treated water discharge: **Svētupe river**
- Power consumption: **123 kWh/day (air blower only)**
- Processing of excessive sludge: **evacuated to Salacgrīva WWTP**

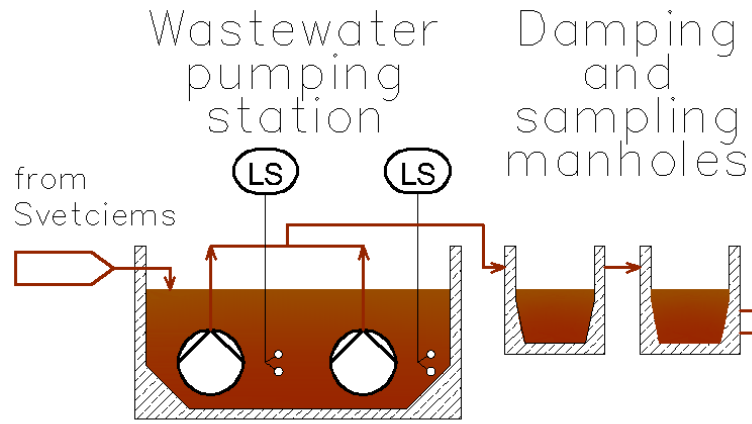
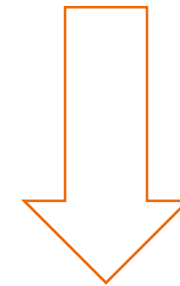




# Information about the Pilot – old WWTP

## Svētciems

**Requirements  
was set**



Aeropacks  
(nitro-denitro)

Polishing ponds  
(SS,  $N_{total}$ ,  $P_{total}$ )

to Svetupe river

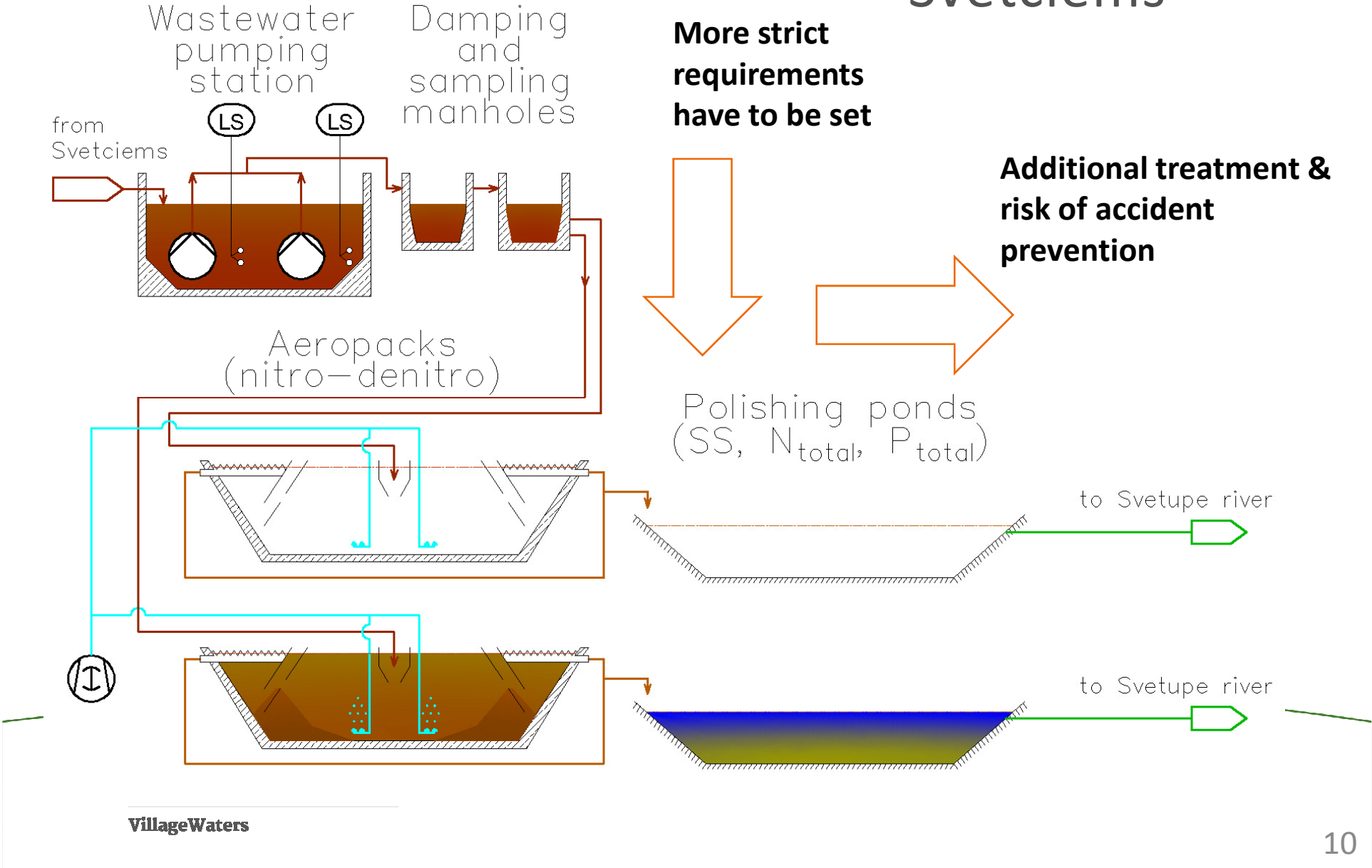
to Svetupe river

Baltic Sea Region

VillageWaters

# Objectives for new WWTP

## Svētciems



# Requirements for new WWT plant Svētciems

## HELCOM recommendations:

300–2000 PE:

- At least 70% reduction for P tot or 2 mg/l
- At least 30% reduction for N tot or 35 mg/l

> 300 CE

- P tot 5 mg/l
- N tot 25 mg/l

Requirements for Svētciems WWT plant:

- < P tot 2 mg/l
- < N tot 10 mg/l

# Procurement procedure

## Svētciems

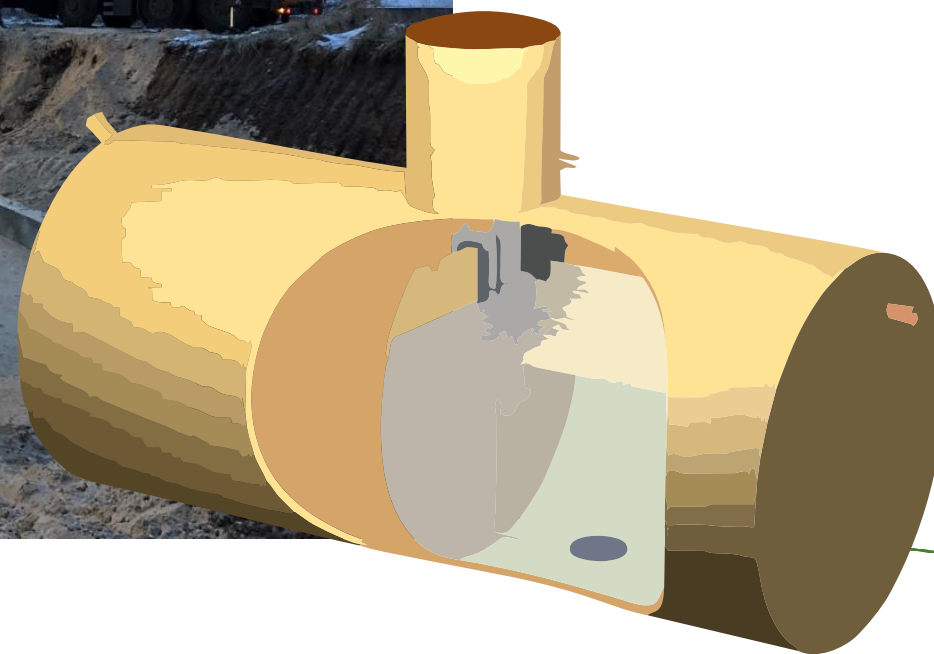
*When the princess was ready to marry, 4 dashing kings were seeking on her hand. All like this Estonian guy Kalevi*



# Requirements for new WWT plant Svētciems

- During procurement procedure 4 offers was received in range between 87 000 to 129 000 EUR
- Both Latvian and international producers were presented

# Construction of new WWT plant Svētciems



# Experiences from Latvian pilot activities Svētciems



Now when the pilot object has been built:

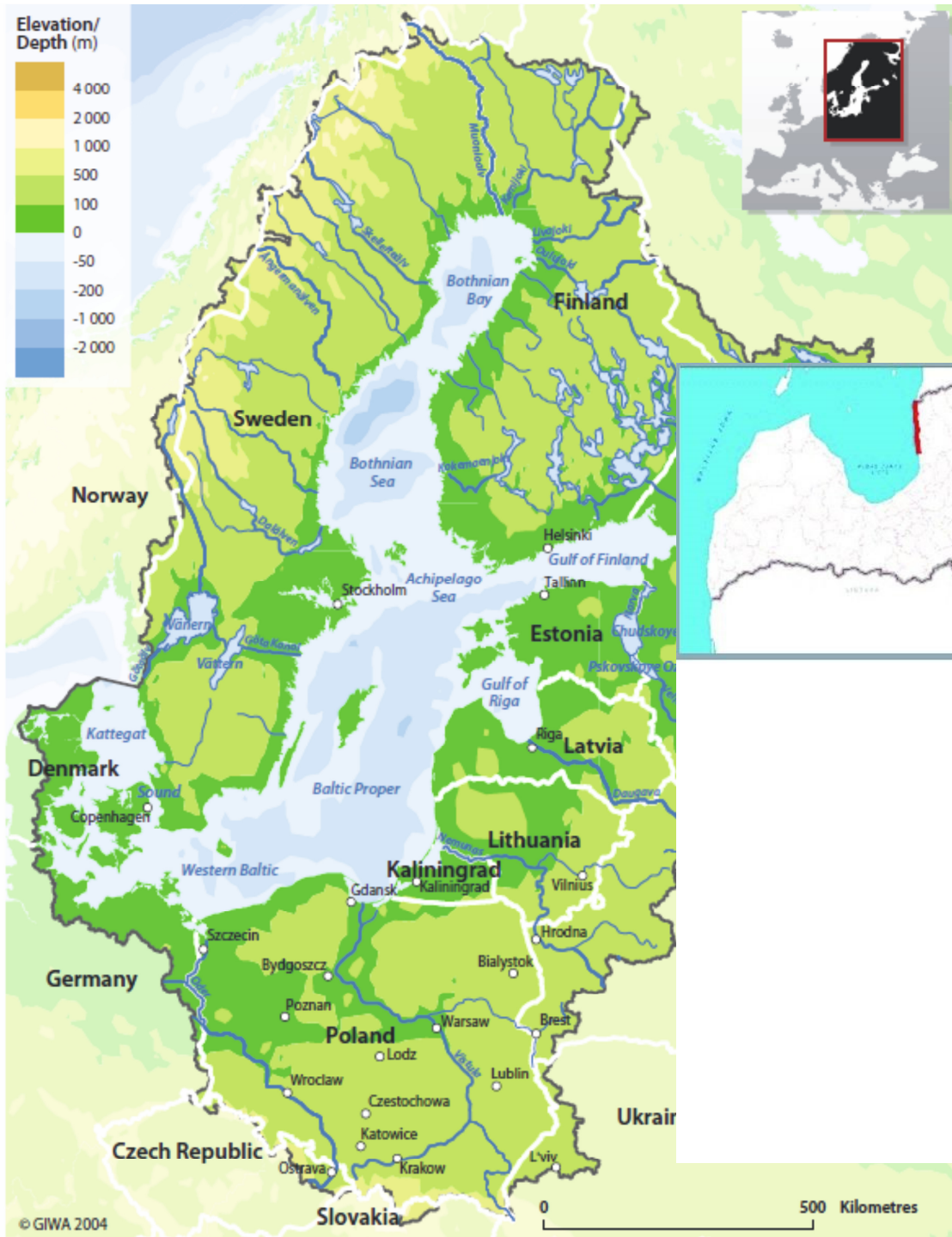
- VillageWaters project is happy about the lessons learned;
- but not only ....

# Experiences from Latvian pilot activities

Also the salmon living in Svētupe become more happy







Ainaži



# Experiences from Latvian Pilot activities

## Ainaži



- Ainaži is a small town with an ancient maritime history.

# Experiences from Latvian Pilot activities

## Ainaži



- Historically due to change of economic priorities, former industrial buildings were converted into dwellings.

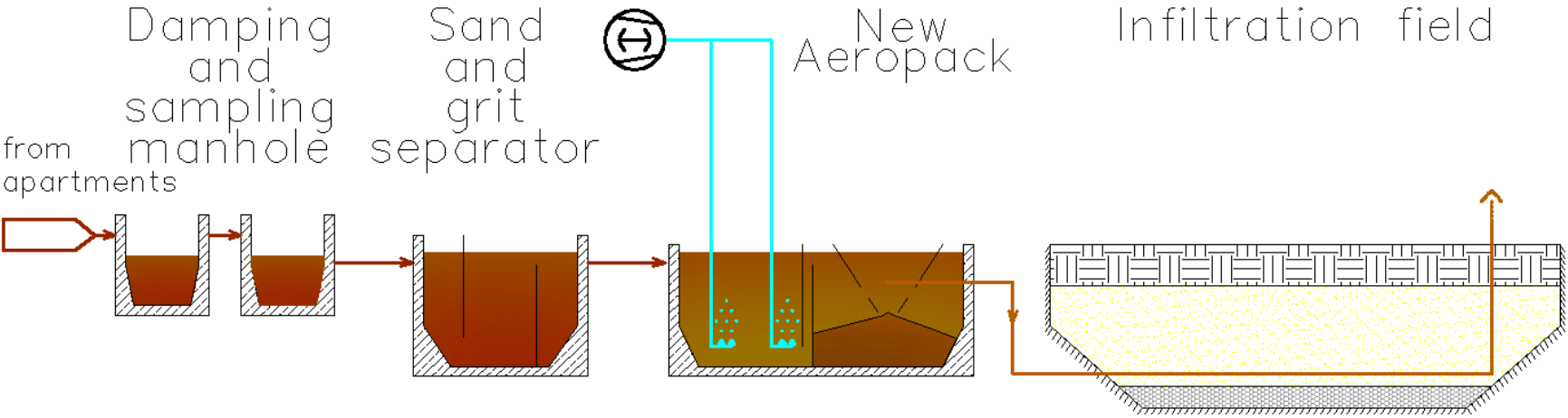
# Information about the pilot – old system

## Ainaži

- Year of construction: **1970s-1980s**
- Type of WWTP: **individual cesspool for each apartment**
- Treated water discharge: **none**
- Power consumption: **none**
- Processing of anaerobic sludge: **evacuated to Salacgrīva WWTP**



# Proposed solution



# Requirements for new WWT plant Ainaži

## HELCOM recommendations:

300–2000 PE:

- At least 70% reduction for P tot or 2 mg/l
- At least 30% reduction for N tot or 35 mg/l

> 300 CE

- P tot 5 mg/l
- N tot 25 mg/l

Requirements for Ainaži WWT facility:

- < P tot 2 mg/l
- < N tot 10 mg/l

# Requirements for new WWT plant Ainaži

- During procurement procedure 4 offers was received in range between 16 000 to 35 000 EUR
- Only Latvian producers were presented

# Experiences from Latvian pilot activities

## Ainaži



Now when the Pilot object has been built:

- VillageWaters project is happy about the lessons learned;
- but not only ....



# Experiences from Latvian pilot activities

## Ainaži



Happy now are also residents of the house who can use water without limiting themselves and enjoy SPA pleasures

# Experiences from Latvian pilot activities

## Lessons learned:

(1) Demand determines supply:

- at the beginning of the Project there were no standard technology available for small WWT solutions providing N and P removal
- today new models are available and few are under development;

## Experiences from Latvian pilot activities

(2) It is easier for municipalities to choose the lowest price in their purchases. In order to stimulate the choice of environmental friendly (according to LCA parameters) technologies, it is necessary to develop an appropriate policy, including support mechanisms;

- (3) The actual water consumption of the population is lower than the 150 l / d set in the EU standard. therefore, in the follow-up to the project, it is important to develop a tool to make the choice of WWT solution on the bases of more accurate water use data.

# Experiences from Latvian Pilot activities

The Golden Eggs of VillageWaters project are our main outputs which provide preconditions for the Baltic Sea improvement.



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FUND

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**VillageWaters**

