



# Implementing Nitrate Directive in Estonia- time for revision!

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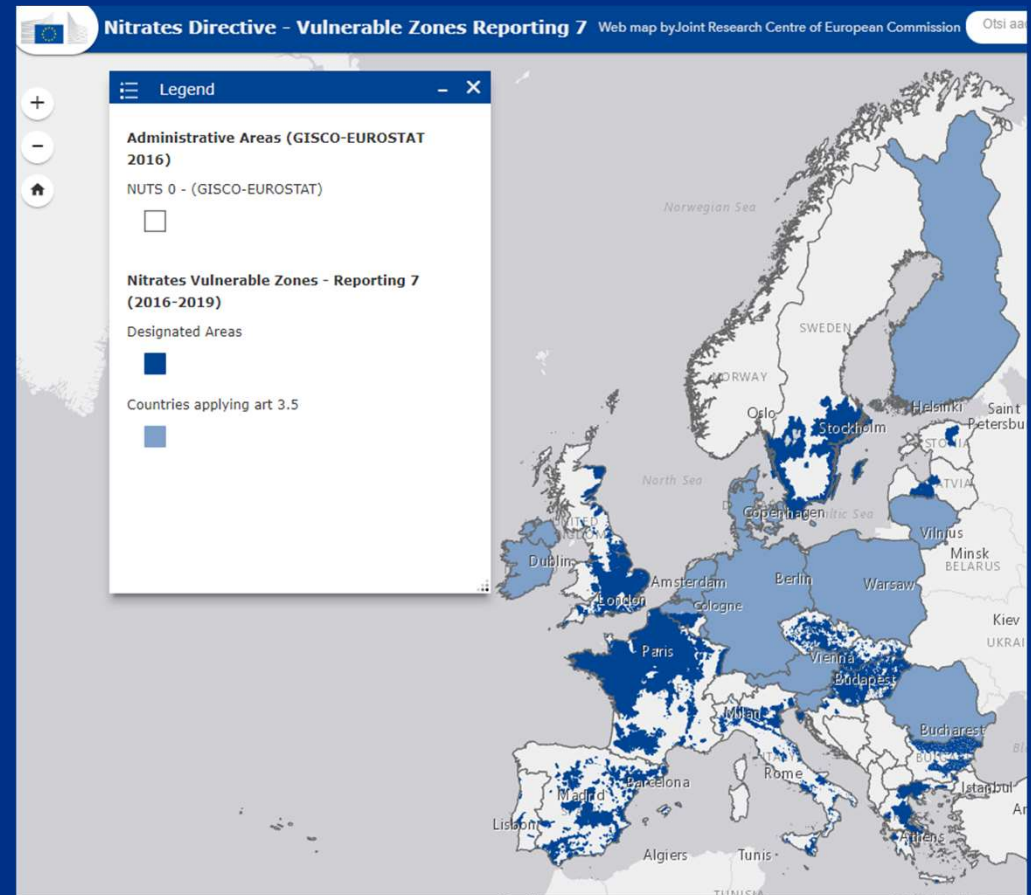


# Legal background

**Water Framework Directive**-good status of all waters  
River Basin Management Plans (RBMP)

**Nitrate Directive**-reduce pollution caused or induced by nitrates from agricultural sources and to prevent further such pollution

- Identifying waters affected by pollution or which could be affected by pollution
- Designation of Nitrate Vulnerable Zones
- Code(s) of good Agricultural Practice
- Action Programme (subprogramme to RBMP)
- Art 3.5 Action Programme applied for whole country NO designation of Nitrate Vulnerable Zone
- 4 year cycle
- Monitoring of effectiveness of action programmes
- Reporting to European Commission
- **Compulsory for all Member States**
  - Taken over with **Water Act** in Estonia





# Some facts about Estonia

Territory (land): 45 372 km<sup>2</sup>

Inhabitants: 1,3 million

Arable land: 23%

Forest: 51,5%

Livestock (cattle, pigs, sheep, goats, domestic birds): 351 428 animal units

0,28 animal units per ha (Estonian average)

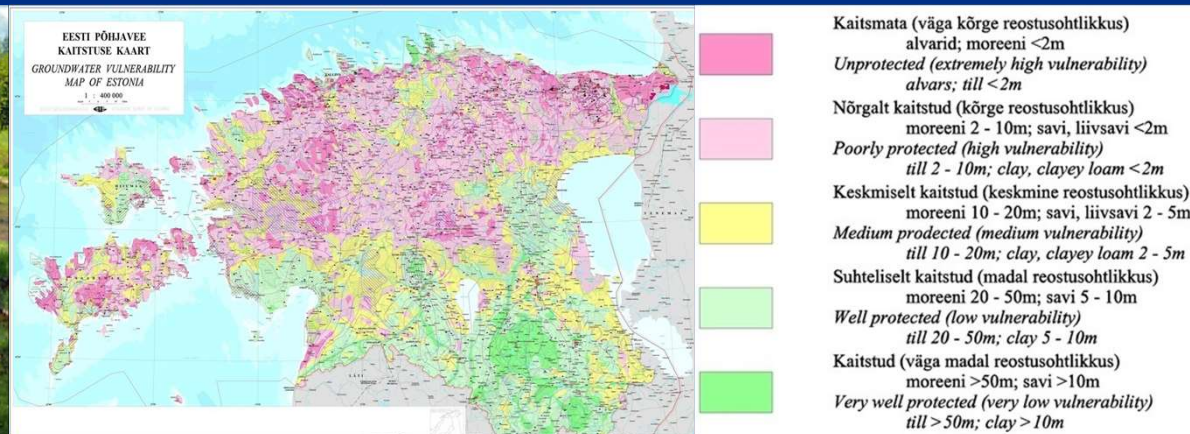
½ groundwater unprotected or poorly protected

74% of groundwater bodies are in good status, incl WB at risk

52% of surface water bodies are in good status

Main pressure for both ground- and surfacewaters is diffuse pollution from agricultural activities

84% of total nitrogen and 79% of total phosphorus loads come from agricultural activities



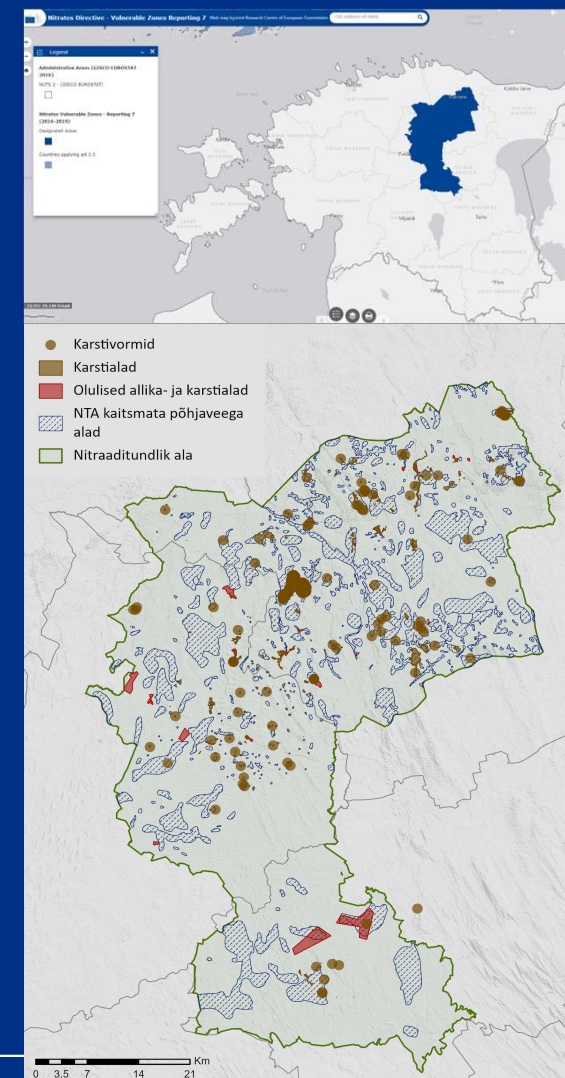


# Implementation of Nitrate Directive in Estonia

- **Nitrate Vurnable Zone (NVZ) designated** Pandivere and Adavere-Põltsamaa area (3250 km<sup>2</sup>-31% of utilized agricultural area UAA)
  - 26% of arable land
  - 17% of farms
  - 37% of land fertilized with organic fertilizers
  - 30% of cattle
  - 38% of milk production
  - Most intensive farming on highly vurnable groundwater area
  - Many rivers begin there, rivers are dependant on groundwater

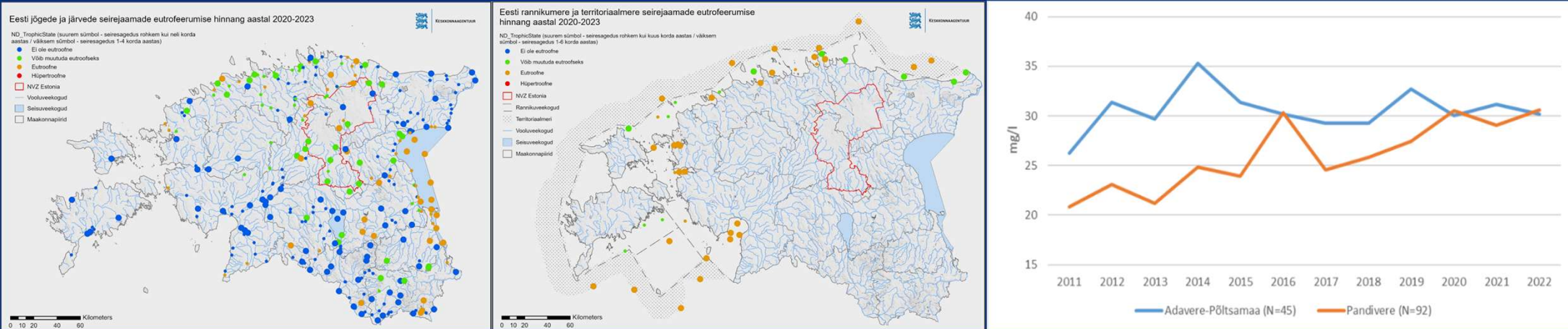
Additional measures for specific areas inside NVZ:

- Nitrogen with mineral fertilizers yearly **120 kg/ha**
  - Nitrogen with mineral ferilizer yearly on winter crops and multy-thred-grassland **80 kg/ha**
  - **1,5 animal unit per ha**
  - **Useage of sewage sludge prohibited**
- Action Programme is implemented in whole Estonia
  - The code of good Agricultural Practice is established in Water Act and compulsory for whole Estonia
  - Basic measures of Water Framework directive established in Water Act and compulsory for whole Estonia
  - Supplementary measures in Rives Basin Management Plans





# Effectiveness of this approach?



*„The Commission recommends Estonia to revise the designation of NVZ to include areas that drain into waters that are eutrophic and to revise its action programme in particular to reduce and prevent eutrophication of inland and marine surface waters where the agricultural pressure is significant.“*



# Revision of Designation of Nitrate Vulnerable Zone (NVZ) in Estonia

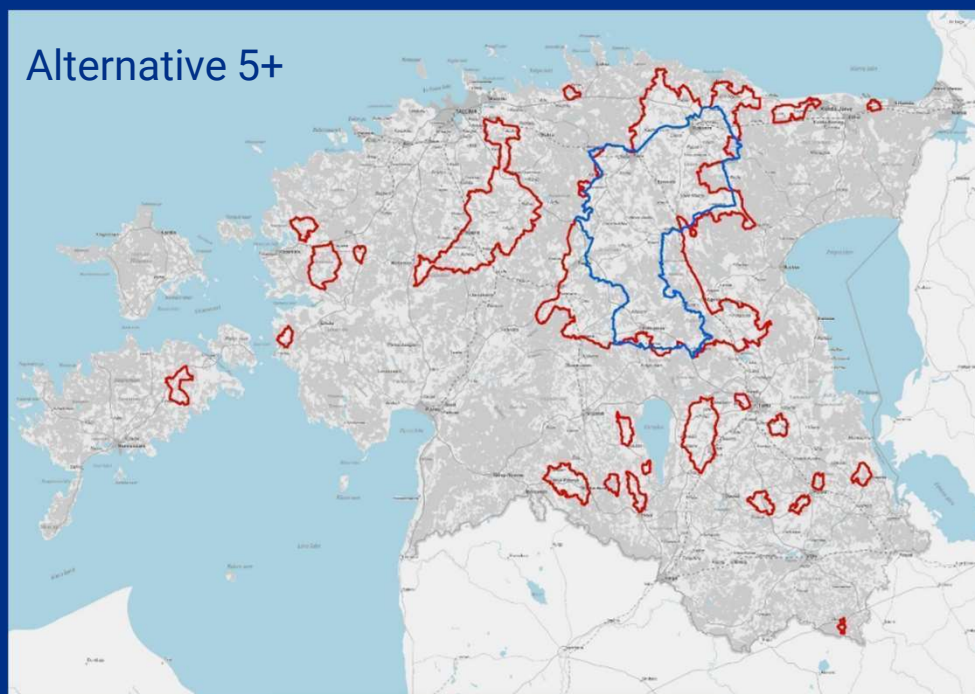
- Analysis of expansion of NVZ and application of additional compulsory water protection measures must base on Driver-Pressure-State-Impact-Response Framework
- Following was considered:
  - Land use and agricultural pressures (arable land, livestock, purpose of the landuse, structure of farms and producers, fertilizers usage, nutrient balance etc) impacts
  - Geography and geology (soils, geological structure/base, distribution of quaternary sediments, groundwater vulnerability, rainfall)
  - Analysis of socio-economic impacts when new compulsory measures would be established
  - Data of surface water bodies and groundwater bodies, soils and drainage etc monitoring

STAGES	Possible indicators
DRIVING FORCES (general tendencies)	<ul style="list-style-type: none"><li>• Density of livestock-farming</li><li>• Impacts of different crop rotations</li><li>• Nutrient use (chemical and organic fertilisers) in agriculture</li><li>• Nutrient surpluses (taking into account removals through harvest etc.)</li></ul>
PRESSURES (nutrient sources towards the aquatic environment)	<ul style="list-style-type: none"><li>• Diffuse nutrient contributions from fields (runoff + leaching)</li><li>• Point sources (urban and industrial wastewater, livestock-farming direct discharge, aquaculture, etc.)</li><li>• Air deposition, biological fixing of nitrogen</li><li>• Mineralization / Nitrification/ denitrification processes</li></ul>
STATUS of aquatic environments and IMPACT of nutrient contributions	<ul style="list-style-type: none"><li>• Nitrogen in groundwater, surface waters (and phosphorus synergy), sediments and marine waters</li><li>• Other eutrophication parameters</li></ul>
RESPONSE — Effectiveness of the actions	<ul style="list-style-type: none"><li>• Implementation in agricultural practice (controls etc.)</li><li>• Effects of the measures (analyses, agronomic monitoring, etc) on concentrations in agricultural soils, leaching and discharge to aquatic environments</li><li>• Retention, response times (models)</li></ul>



# Analysed alternatives and preselection

NVZ Update alternatives	No new measures will be applied, <i>business as usual</i>	Application of new compulsory measures (updating the Water Act)	
		Only on NVZ	In whole Estonia
No change in NVZ, <i>business as usual</i>	Alternative 1	Alternative 2	Alternative 3
NVZ will be changed according to studies and experts recommendations	Alternative 4	Alternative 5 Alternative 5+	Alternative 6
Application of Nitrate Directive art 3.5	Alternative 7	-	Alternative 8





# What next?

## Implementing Action programme 2025-2028

1. • Identifying the problem
2. • Determining objectives
3. • Designing measures to achieve objectives
4. • Analysing impact of the measures
5. • Comparing measures
6. • Methodology for assessing the effectiveness of policy instruments
7. • Policy processing and entry into force





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# Thank you!

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