Assessment of regional nutrient pollution load and identification of priority Investment projects to reduce nutrient pollution from Belarus to the Baltic Sea

BSAP Fund

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NEFCO in a nutshell

- Nordic financial institution established 1990 in Helsinki
- Financier of environmental projects
- Fund Manager for the Nordic countries, USA, Germany, the Netherlands, Russia, EU and GEF
- Total value of the funds administered by NEFCO is currently EUR 540 million
- Active role in the Arctic Council, the Barents Council, NDEP and other international organisations
- Climate and environmental expertise
- Project activities in 29 countries

The overall objectives of the assessment

- identification of priority investment projects for funding available;
- reduction of nutrient inputs to the Baltic Sea in the context of the Northern Dimension Environmental Partnership (agriculture, municipal wastewaters, industry e.g. detergent production)
- building of local capacity in project preparation and access to finance;
- building of local capacity in the assessment of nutrient pollution sources, their monitoring, reporting and Belarusian participation in the HELCOM work; and
- intensification of Belarus's cooperation within the Baltic Sea catchment area and with EU

The immediate objectives of the assessment

- compilation, presentation and analysis of the best available data on major present sources of nutrient discharge loads from Belarus into the Baltic Sea;
- provision of the best professional estimates on the future development of nutrient discharge loads from Belarus to the Baltic Sea;
- provision of an estimate of the impact of the identified major polluters, present and future, on the eutrophication of the Baltic Sea, using key pollution indicators (KPIs) % of nutrient load;
- assessment of the efficiency of alternative measures, investments as well as administrative actions, to reduce nutrient pollution and their estimated impacts;
- preliminary action plan to provide a basis for decision making on investments and other measures to reduce and control nutrient pollution; and
- a list of specific priority projects (concepts/estimated impacts and costs/investment needs).

Project status

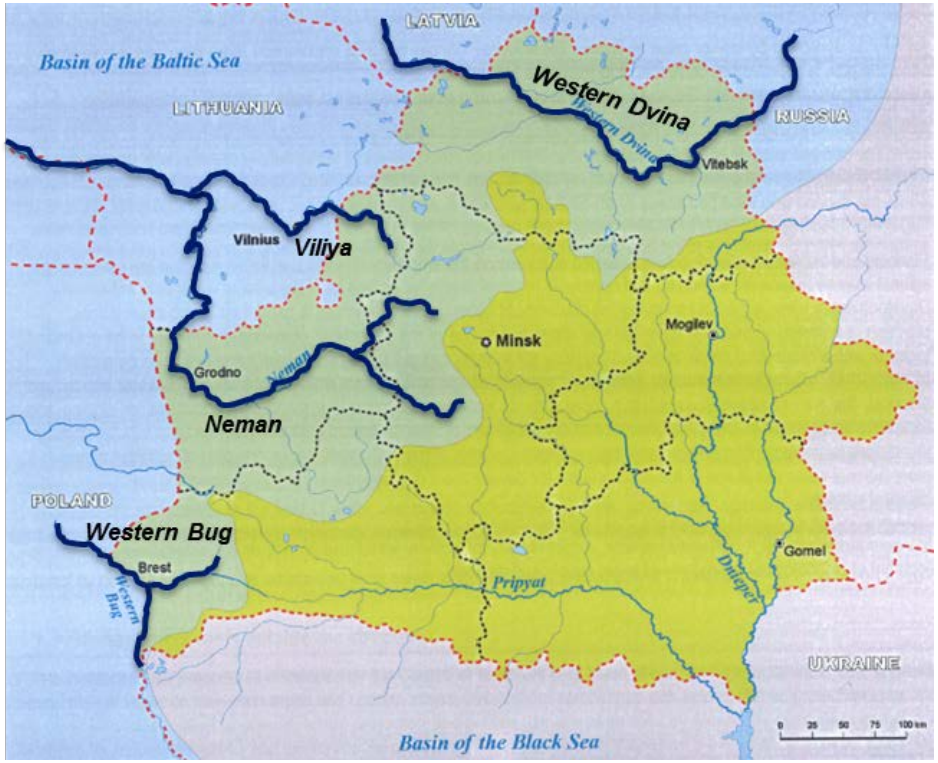
- Project period 14th Nov 2012 – 31th Dec 2013

- Assignment carried out by Pöyry Finland Oy in association with
- Central Research Institute for Complex Use of Water Resources (CRICUWR)
- UNITER Investment Company (future forecasts, inventory of financing resources)
- SWECO (development of priority investments)
- MTT (one member of the agricultural team)

Project schedule

Task	Schedule	Meetings	Deliverables
Task 1, Baseline study	11/2012-02/2013	10.1. 12.3.	Baseline study report
Task 2, Analysis of cost-effectiveness and efficient of anternative measures	**03/2013-07/2013**	**7.5**. 15.8.	**Interim report** Final assessment report
Task 3, Action plan for prioritized investments and feasible administrative measures	08/2013-11/2013	3.10.	Action plan Final report

Rivers and their catchment areas



Nitrogen load ~ 44 000 t/a
Phosphorus ~ 2 800 t/a

Three transboundary river basins on the territory of Belarus, the Western Bug, the Neman and the Western Dvina discharge to the Baltic Sea

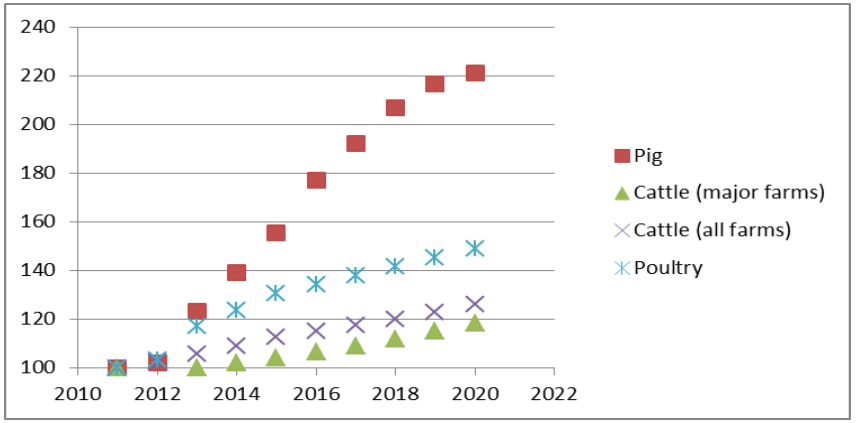
Animal farms

Initial screening of 30 potential candidates out of about 300 farms (pig, cattle, poultry)

Criteria for selecting the long list:

1. Biggest pollution potential based on the size of the farm and its manure production (livestock units LSU) and manure nutrient content (OCP approach)
2. Geographical location
3. Investment capacity and plans

Multiplier 1…1.5 used corresponding forecasted growth by 2020



Prioritization criteria for WWTPs

- Nutrient removal potential (OCP before and after investment)
- Cost efficiency for nutrient removal based on the estimated investment costs (OCP is divided by investment costs)

- Some challenges caused by the discrepancies in analysis data..
- Solution: Typical per capita flows for influent water and typical factors for nutrient removal in WWTP's are used.

Preliminary data from WWTP's

No.	WWTP	OCP reduction			Investment EUR	Cost efficiency kg OCP/EUR
		Present ton/year	Future ton/year	Reduction ton/year		
1	Brest WWTP	24 598	6 367	18 231	12,2	1,49
2	Grodno WWTP	23 065	6 925	16 140	12,8	1,26
3	WWTP of Polimer Plant	13 097	3 996	9 101	9,0	1,01
4	Baranovichi WWTP	9 037	2 151	6 886	9,0	0,77
5	Smorgon WWTP	2 929	625	2 304	3,0	0,77
6	Kobrin WWTP	4 088	643	3 444	4,5	0,77
7	Lida WWTP	6 710	2 265	4 444	6,0	0,74
8	Molodechno WWTP	5 597	1 484	4 113	6,0	0,69
9	Volkovysk WWTP	3 751	828	2 923	4,5	0,65
10	Novogrudok WWTP	2 330	419	1 911	3,0	0,64
11	Dzerzhinsk WWTP	2 028	285	1 743	3,0	0,58
12	Vitebsk WWTP	12 184	5 907	6 277	11,1	0,57
13	Slonim WWTP	3 585	1 378	2 207	4,5	0,49
14	Ivatsevichy WWTP	1 839	384	1 454	3,0	0,48
15	WWTP of OAO Naftan	3 591	2 191	1 400	4,5	0,31

Thank you!