



Document title	Draft Summary on the evaluation of effectiveness of measures
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Category	CMNT
Agenda Item	5 - Assessment of input of nutrients and selected hazardous substances (PLC-6 project outcomes)
Submission date	17.10.2017
Submitted by	PLC-6 Project group
Reference	

*Note that this document was submitted after the established deadline.
It will be decided by the Meeting whether the document can be discussed or is postponed to the next meeting.*

Background

Evaluation of the effectiveness of measures to reduce input of nutrients to the Baltic Sea is one of the major PLC-6 project deliverables. The evaluation is based on the countries' respond to questionnaire prepared by the PLC-6 team and updated according to recommendations by PRESSURE 4-2016. A compilation of the national responds to the questionnaire is available in separately in document "5-5-Att. Inputs from Contracting Parties-092017".

The information was provided by the Contracting Parties in very different formats including quantification or narrative descriptions. Some reports do not contain quantification which disables the evaluation of potential reduction. Some data still require clarification. A reflection on reported data quality with some clarification requests are given below:

Denmark is invited to clarify reported figures.

Finland is invited to provide quantification of reduction in diffuse losses during 1995 – 2014, if any reduction has been achieved.

Estonia did not provide any quantification of estimated load reductions, excluding NO_x emissions by sector.

Germany is invited to clarify the use of figures for storm waters, as both decrease and increase reported.

Latvia is invited to verify expected reduction 2015 onwards huge for WWTPs and confirm that provided values are correct. Latvian experts are also invited to verify and confirm correctness of recalculation of the reported catchment loads to loads into the Baltic Sea by applying the given retentions per sub-basin.

Lithuania has not reported quantification of expected reductions 2015 onwards and kindly invited to inform, if any reduction measures are foreseen.

Poland is invited to confirm whether retention coefficient might be applied for the reported reduction in N and P 2015 onwards as the reduction values at sources have been given.

Russia has not reported any expected reduction figures for BAP. The waste water treatment plant in Kaliningrad was formally introduced on 7 June this year. At the opening ceremony reduction of 120 tons of phosphorus and 300 tons of nitrogen load was announced.

Sweden provided the most comprehensive report. However, Sweden is invited to clarify availability of data on expected nitrogen reductions 2015 onwards in the same form as the data for phosphorus were reported.

The document contains draft summary of the information on effectiveness of measures implemented in the period 1995-2014 and expected effect of measures implemented or planned for implementation after 2015.

Action requested

The Meeting is invited to take note of the first results of evaluation of the effectiveness of measures, provide feedback on the submitted document and respond on requested clarifications.

The Meeting also invited to provide further guidance regarding finalizing this PLC-6 product.

Draft summary of the evaluation of reduction potential of nitrogen and phosphorus loads in the Contracting Parties

In the PLC-5 project the reduction potential of nitrogen and phosphorus in municipal waste waters was estimated on the basis of the percentage of the population connected to the wastewater treatment systems and the treatment level in MWWTPs in 2007-2009. The theoretical load reduction potential that could be achieved by improved sewage treatment was estimated as the difference between the level during the period in question and the HELCOM Recommendation level (HELCOM Recommendation 28E/5).

The quantification of the nitrogen and phosphorus reduction potential from households not connected to public sewerage was performed using a very simplified approach (OSPAR Guidelines for Harmonized Quantification and Reporting Procedures for Nutrients, HARP-NUT, 2004). The reduction potential was calculated as the difference between specific load from the households with water flushed toilets and with no specific external treatment and those fulfilling the HELCOM Recommendation (28E/6) treatment level. For other sectors, no assessment of the reduction potential was made in PLC-5.

Expected reduction 2015 onwards

In the PLC-6 project, data on nutrient reduction potential were asked the Contracting Parties themselves. In the questionnaire sent, the CPs had an opportunity to report the estimated nitrogen and phosphorus reduction potential by sector from 2015 onwards concerning both waterborne and airborne inputs to the Baltic Sea and at source/or to inland waters. In the same questionnaire it was possible to report about the reduction of loads sector by sector between 1995 and 2014 as well as the measures taken.

The results of the estimated future reductions are shown in the figures 1a and 1 b below.

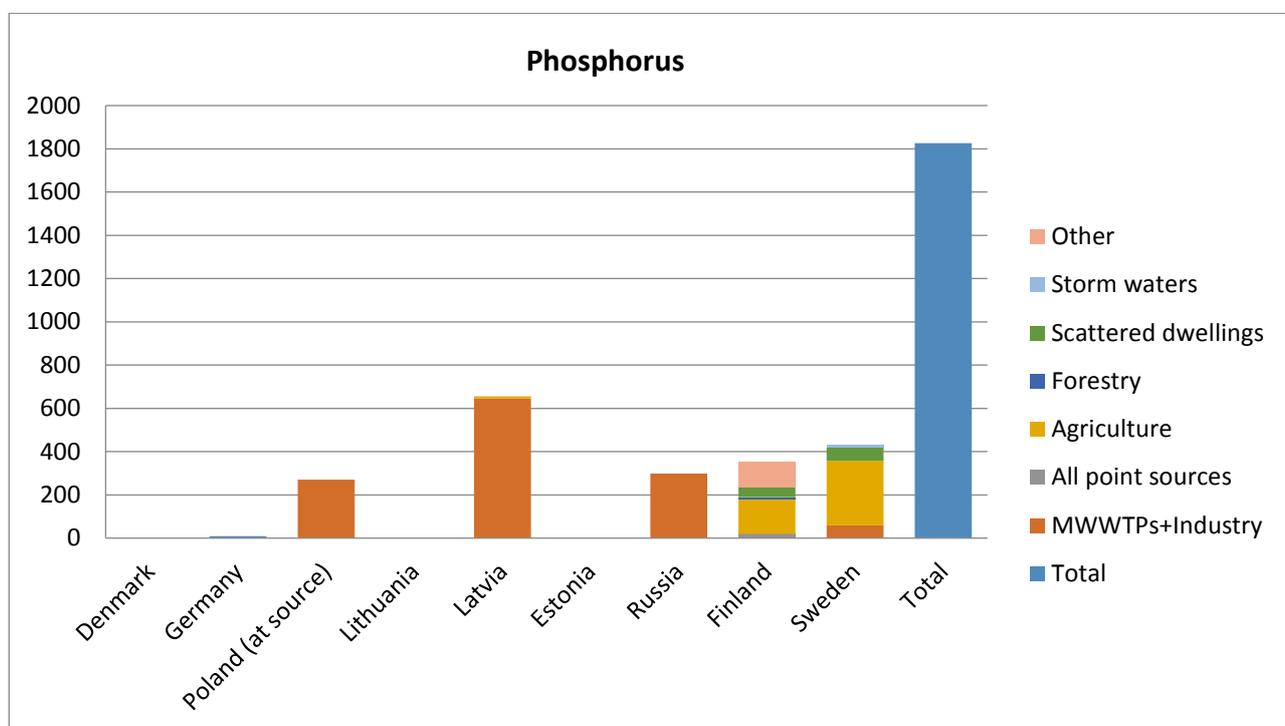


Figure 1a. Expected reduction in phosphorus loads (tons/year) 2015 onwards. The results are reported/calculated as waterborne input to the Baltic Sea except in case of Poland.

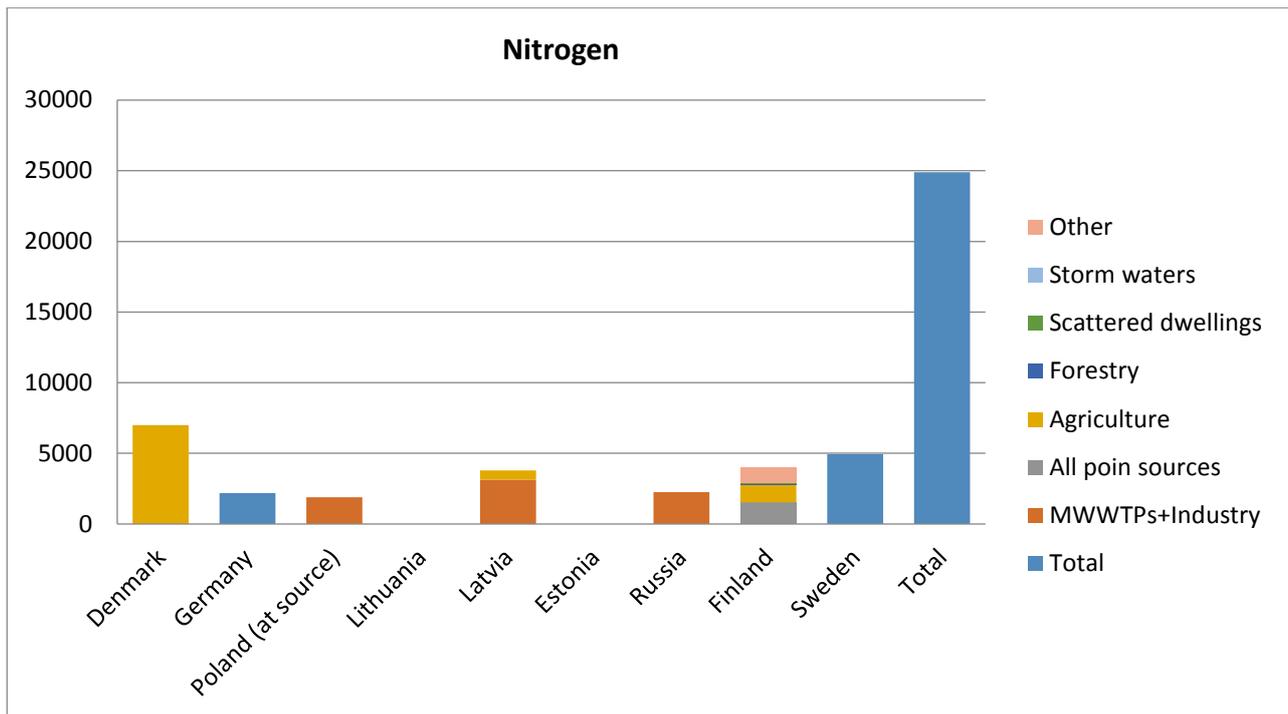


Figure 1b. Expected reduction in nitrogen loads (tons/year) 2015 onwards. The results are reported/calculated as waterborne input to the Baltic Sea except in case of Poland.

The CPs mainly reported the estimated reduction effects of the measures included in the River Basin Management Plans (RBMPs) under WFD, the estimated effects of measures included in the national water protection programmes, and the effects of the implementation of the relevant EU directives, e.g. Programme of Measures (PoMs) for the development and implementation of the EU Marine Strategy Framework Directive (MSFD) and Urban Waste Water Directive (UWWB).

Coverage of reporting on the expected reductions varies considerably between countries. Some countries reported the estimated load reductions for all sectors, the majority of only one to three sectors, and some countries merely verbally described the measures aiming at achieving a good ecological status of coastal waters. Most countries had estimated the reductions to be achieved by sub-basin. Above the results are presented only for the entire Baltic Sea by country. The original answers can be found in the attachment (xx).

Some countries reported a range of estimates. In those cases, an upper limit has been applied. In some replies, it was also emphasized that not all reductions will be achieved by 2021, but most likely only until 2027. In some cases, countries themselves have also indicated that reduction estimates are very rough.

These figures cannot be directly compared to the remaining load reduction requirement into the Baltic Sea because part of the estimated reduction potential focuses on marine areas for which no reduction target has been set (BOS and BOB). Additionally, before this comparison all figures must also be made comparable, it means that retention in the catchment area must be taken into account in all countries' data.

Reduction during 1995 - 2014

The Contracting Parties were also asked to evaluate the load reductions that have taken place between the years 1995 and 2014. A summary of the responses to the questionnaire is presented in Figures 2a and 2b.

The period of time from which the results were reported, varied by country. Country-specific information is provided in the attachment (xx). Also, the method by which the results were produced varied from country to country. Partially, the results are based on a proven reduction in the load. This is a typical case for point source loads. The reduction in the diffuse load, such as agriculture, is much more difficult to verify. In some countries, modeling has been used, in other countries the estimates are based on measures implemented during the first River Basin Management Planning period (2010 - 2015). Comparison with the previous PLC reports was also used as the basis for the evaluation. In some cases information on measures implemented before 2010 is lacking.

Reporting difficulties were well crystallized in one country's response: "Information on effect of taken measures is generally difficult to present, since we lack a common system for collecting, storing and visualizing this data." However, it was positive that all countries report at least some data, but there are gaps in the coverage that undermine comparability of the information. As concerning the estimates from 2015 onwards, here too some of the figures have been reported at source or to inland waters. Sometimes part of the load is reported to inland waters and part of it so that retention has been taken into account.

A few countries also reported the development of NO_x and/or NH_x emissions by sector. In the accompanying figures, this information is not presented because of a scaling problem. The information can be found in the attachment. In many cases - even in cases where figures have not been reported - the countries have verbally described the measures set up by sector to reduce the load.

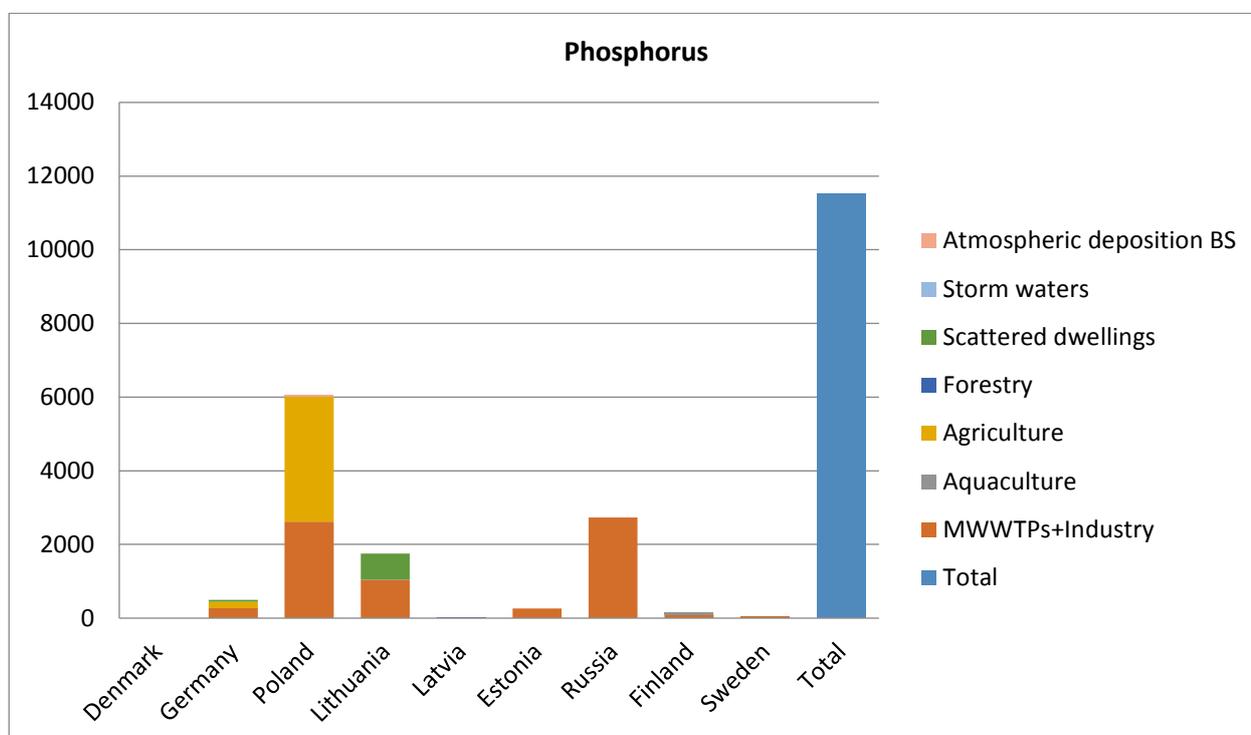


Figure 2a. Reduction in phosphorus load during 1995 - 2014.

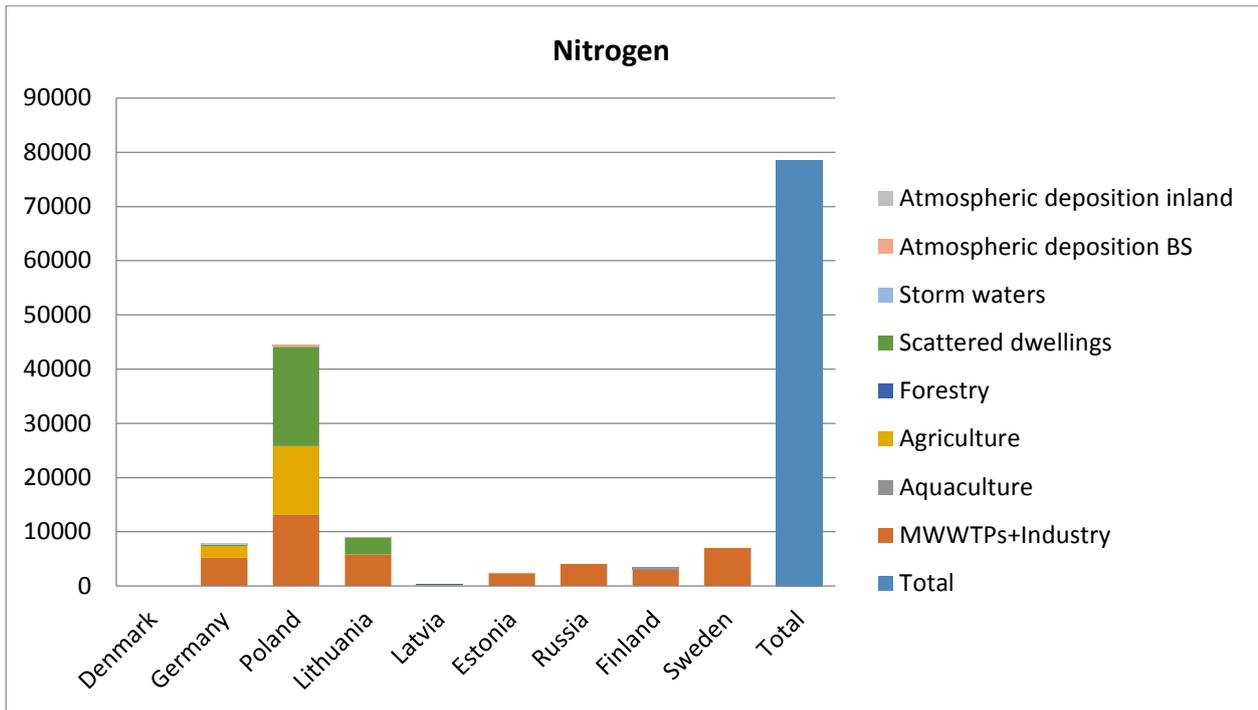


Figure 2b. Reduction in nitrogen load during 1995 - 2014.