Efficient nutrient management as a measure to reduce the input to the Baltic Sea

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Above and beneath the Baltic waves: still a lot to do!

Oxygen depleted area is greater than ever.
Helsinki Commission (HELCOM)

- Intergovernmental organisation
- 9 coastal countries & EU
- Marine area:
  - 415,000 km²
- Catchment area:
  - 1.72 million km²
    (4 x size of the sea area)
  - 14 countries
  - 85 million people
Nutrient reduction scheme of the BSAP consists of two parts

**MAI**

*Maximum allowable inputs:* the basin-wise maximal nitrogen and phosphorus inputs that will result in a development towards reaching the ecological targets

**CART**

*Country-wise allocation of reduction targets:* the necessary nutrient input reduction distributed per Country according to agreed principles
## BSAP nutrient reduction targets

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<tbody>
<tr>
<td></td>
<td>TN tons</td>
<td>TP tons</td>
<td>TN tons</td>
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<tr>
<td>Kattegat</td>
<td>74 000</td>
<td>1 687</td>
<td>78 761</td>
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<tr>
<td>Danish Straits</td>
<td>65 998</td>
<td>1 601</td>
<td>65 998</td>
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<tr>
<td>Baltic Proper</td>
<td>325 000</td>
<td>7 360</td>
<td>423 921</td>
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<tr>
<td>Bothnian Sea</td>
<td>79 372</td>
<td>2 773</td>
<td>79 372</td>
</tr>
<tr>
<td>Bothnian Bay</td>
<td>57 622</td>
<td>2 675</td>
<td>57 622</td>
</tr>
<tr>
<td>Gulf of Riga</td>
<td>88 417</td>
<td>2 020</td>
<td>88 417</td>
</tr>
<tr>
<td>Gulf of Finland</td>
<td>101 800</td>
<td>3 600</td>
<td>116 252</td>
</tr>
<tr>
<td>Baltic Sea – revised figures (2013)</td>
<td>792 209</td>
<td>21 716</td>
<td>910 344</td>
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Country Allocated Reductions Targets, 2013 (tonnes/year)

- Bothnian Bay: P 530 N 9240
- Bothnian Sea: P 320 N 1800
- Gulf of Finland: P 1470 N 8970
- Baltic Proper: P 38 N 2890
- Kattegat: P 110 + 60 N 7170 + 500
- Danish Straits: P 170 + 20 N 8730 + 500
- Gulf of Riga: P 220 N 1670
- UNECE: N 18720
- Shipping: N 6930
- Germany: P 7480 N 43610
- Poland: P 7480 N 43610
- Russia: P 330 + 26 N 2430 + 600
- Sweden: P 330 + 26 N 2430 + 600
- UNECE: N 18720
- Shipping: N 6930
- Russia: P 3790 N 10380
- Latvia: P 320 N 1800
- UNECE: N 18720
- Shipping: N 6930
- Germany: P 110 + 60 N 7170 + 500
- Poland: P 7480 N 43610
- Russia: P 800 N 3320
- Germany: P 7480 N 43610
- Poland: P 7480 N 43610
- Russia: P 800 N 3320

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**Nitrogen**
- 1997-2003: 910,344
- 2008-2010: 829,406
- 2010-2012: 824,875

**Phosphorus**
- 1997-2003: 36,894
- 2008-2010: 33,144
- 2010-2012: 31,882
Progress in implementation of the HELCOM nutrient reduction scheme for the sub-basins of the Baltic Sea
Agricultural sector contribution to the nutrient load to the Baltic Sea

Agriculture contribution to the diffuse load - 70-90% for nitrogen and 60-80% for phosphorus
Annex III
the Contracting Parties shall apply the measures described below and take into account Best Environment Practice (BEP) and Best Available Technology (BAT) to reduce the pollution from agricultural activities.
Agri-environment measures by 2013 HELCOM Ministerial

✓ Smart nutrient management to address nutrient losses

→ National measures to reduce nutrient surplus in fertilization practices to reach nutrient balanced fertilization (2018)

→ Advance towards annual nutrient accounting at farm level (2018)

→ Full utilization of nutrient content of manure in fertilization practices

→ To establish by 2016 national guidelines or standards for nutrient content in manure and to develop by 2018 guidelines/recommendation on the use of such standards
**Work Plan for HELCOM Group on Sustainable Agricultural Practices (Agri Group) 2014-2016**

The group will respond to the need to find solutions how the sector could further contribute to reaching Good Environmental Status of the Baltic Sea by 2021.

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<tr>
<th>Action 3. Annual accounting at farm level:</th>
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<tr>
<td>I. Workshop &amp; Stocktaking of the ongoing activities related to the nutrient accounting including balance sheet at farm level</td>
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<td>II. [Outlining country-wise steps and requirements &amp; National roadmaps]</td>
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<th>Action 4. Guidelines or standards for nutrient content in manure</th>
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<td>Development of national standards for nutrient content in manure to enable better use of manure nutrients for fertilization practices:</td>
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<td>I. Baseline data collection</td>
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<td>II. Development of national manure standards where not existing</td>
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<td>III. Guidelines/recommendations for the use of standards</td>
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Nutrient bookkeeping is a tool for documentation of the nutrient flows at the farms. It also integrates reporting the data for aggregation at local and national level, which forms a background for sustainable use of nutrients in various types of agricultural production.

One of the main obstacles:

uncertainties of standard values on manure excretion, uptake of crops, grassland yields and nutrient content in manure as well as data on nitrogen fixation, denitrification, leaching under different conditions etc.
Among the other the following steps for promoting nationally nutrient bookkeeping were suggested:

- Development of methodology and equipment for simple and quick methods to analyse nutrient content in manure in the field;

- Stocktaking and harmonization of the standard values for manure excretion, nutrients content in manure, crop uptake and the others.
The Meeting was of the opinion that all the countries around the Baltic Sea region are developing in the similar direction which creates a good possibility for regional cooperation.

The Meeting agreed that the aim of cooperation in the Agri group should be to identify, or jointly develop methodologies that could be recommended for use in the Baltic Sea region when establishing standards for nutrients content in manure nationally.

The Meeting agreed to start with comparing existing standards in the countries and analysing the similarities and differences in the methodologies used, and that this work should be carried out on an expert level.