

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



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# Helsinki Commission (HELCOM)

- Intergovernmental organisation
- 9 coastal countries & EU
- Marine area:
  - 415,000 km<sup>2</sup>
- Catchment area:
  - 1.72 million km<sup>2</sup>  
(4 x size of the sea area)
  - 14 countries
  - 85 million people

## Baltic Marine Environment Protection Commission



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# Estonian Chairmanship of HELCOM

## July 2014 - June 2016



### HELCOM 1974–2014

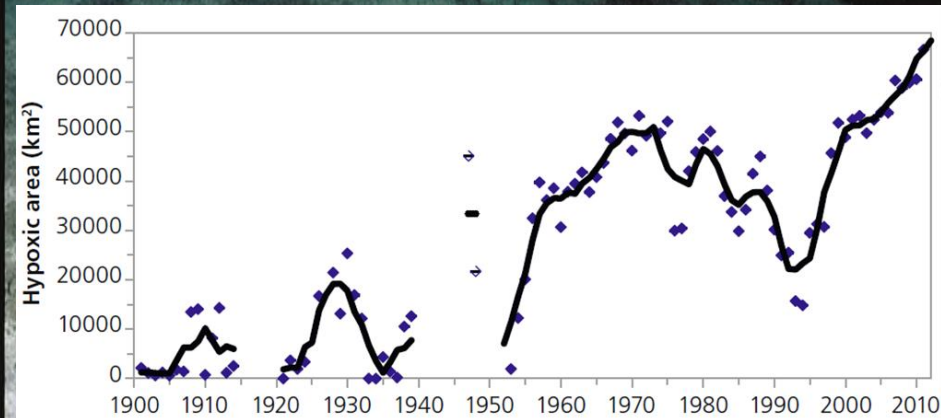
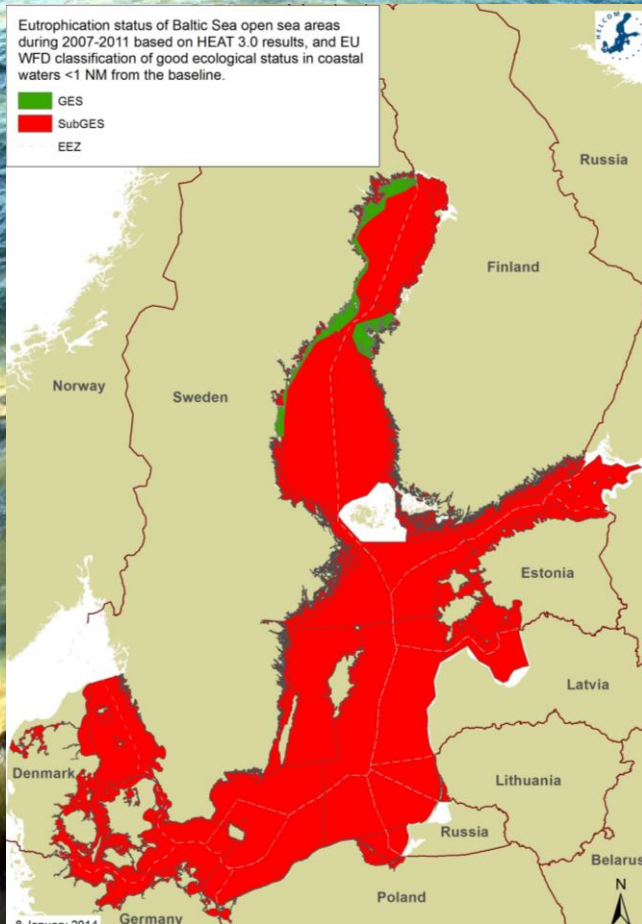
The seven nations around the Baltic Sea signed a historical agreement on Friday 22 March 1974, to protect the Baltic marine environment – Helsinki Convention.



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



Oxygen depleted area  
is greater than ever



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# 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

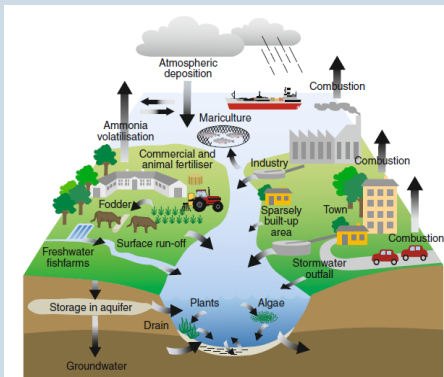
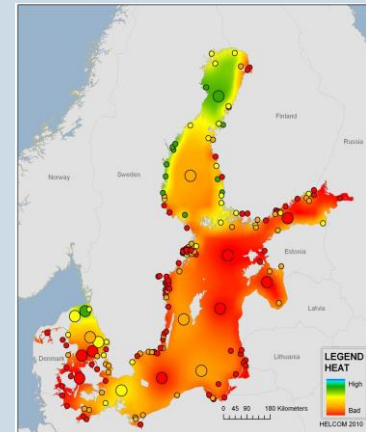


Figure 1-2 Different sources of nutrients to the sea and examples of nitrogen and phosphorus cycles (Source: Ertebjerg et al. 2003).

(P. C-5)

## CART

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



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# BSAP nutrient reduction targets

Baltic Sea Sub-basin	Maximum Allowable Inputs (2013)		Reference inputs 1997-2003		Needed reductions	
	TN tons	TP tons	TN tons	TP tons	TN tons	TP tons
Kattegat	74 000	1 687	78 761	1 687	4 761	0
Danish Straits	65 998	1 601	65 998	1 601	0	0
Baltic Proper	325 000	7 360	423 921	18 320	98 921	10 960
Bothnian Sea	79 372	2 773	79 372	2 773	0	0
Bothnian Bay	57 622	2 675	57 622	2 675	0	0
Gulf of Riga	88 417	2 020	88 417	2 328	0	308
Gulf of Finland	101 800	3 600	116 252	7 509	14 452	3 909
Baltic Sea – revised figures (2013)	792 209	21 716	910 344	36 894	118 134	15 178

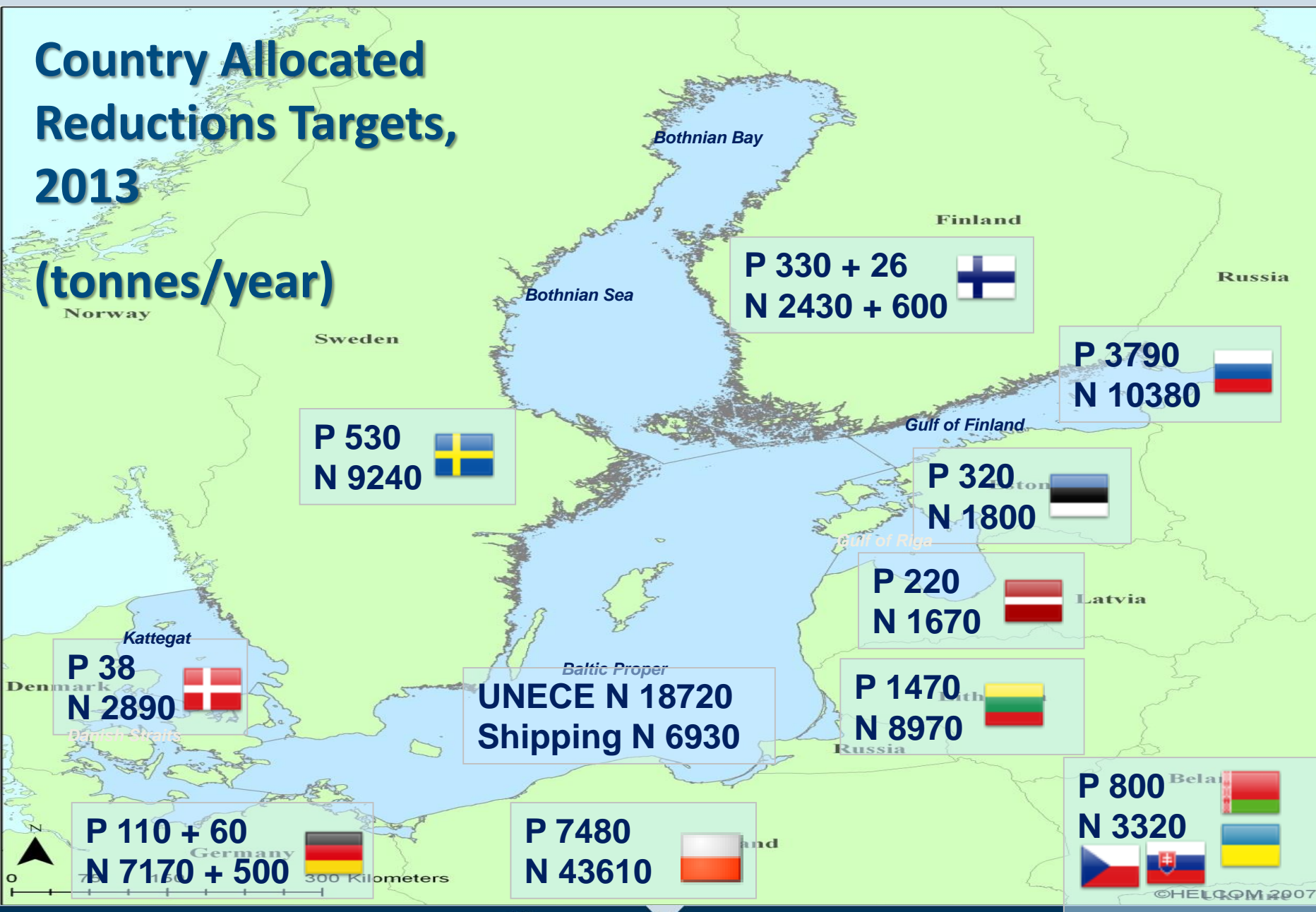


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# Country Allocated Reductions Targets, 2013

(tonnes/year)

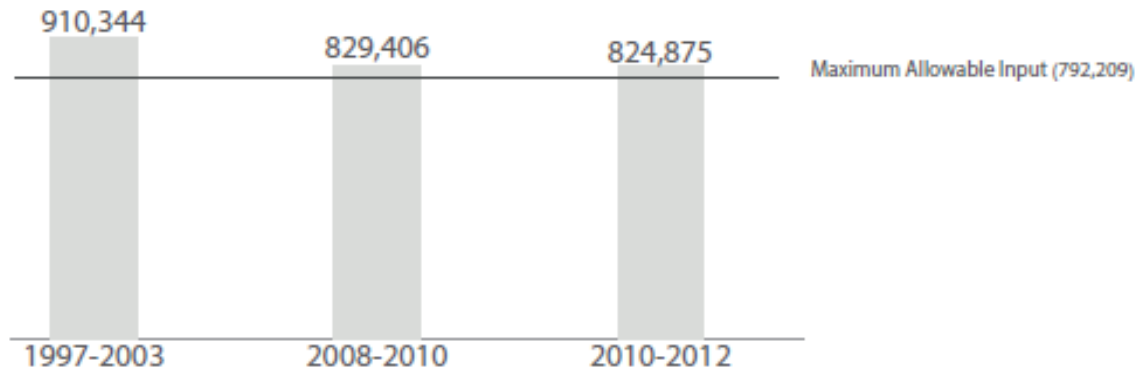


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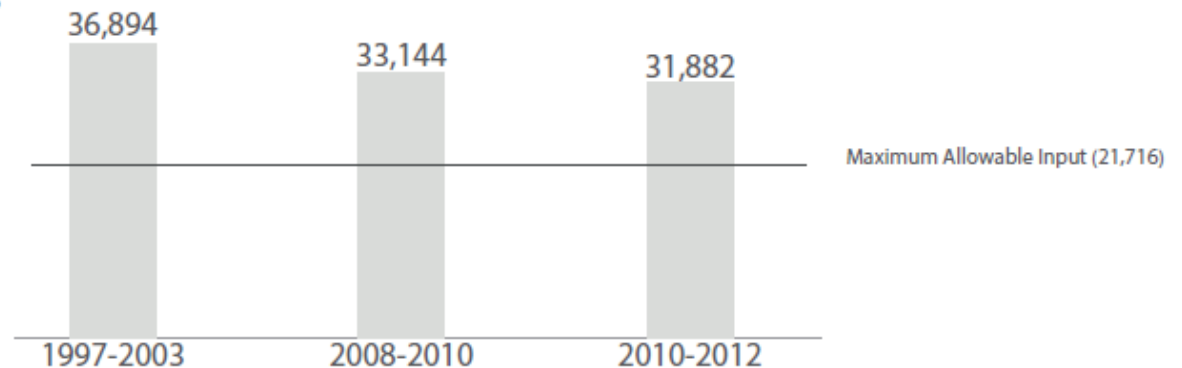
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## Nutrient input reductions in tonnes from reference period (1997-2003) to the latest available assessment periods.

### Nitrogen



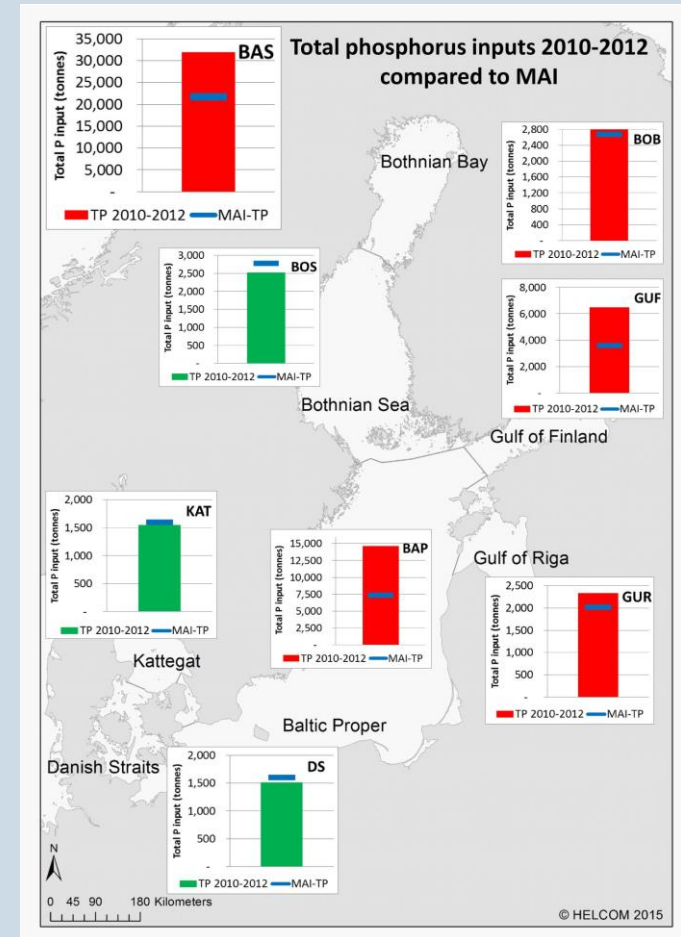
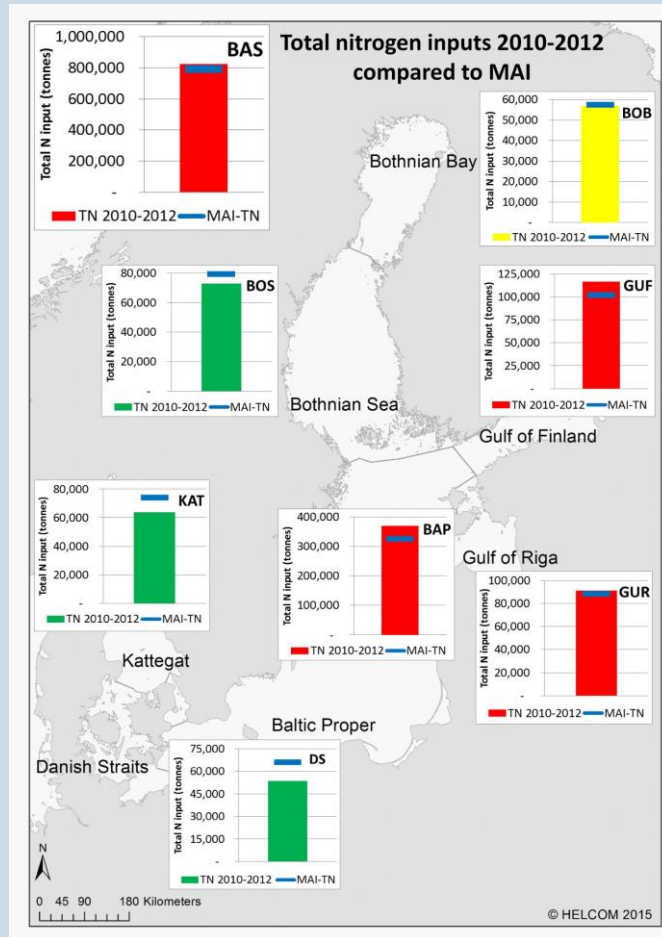
### Phosphorus



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# Progress in implementation of the HELCOM nutrient reduction scheme for the sub-basins of the Baltic Sea

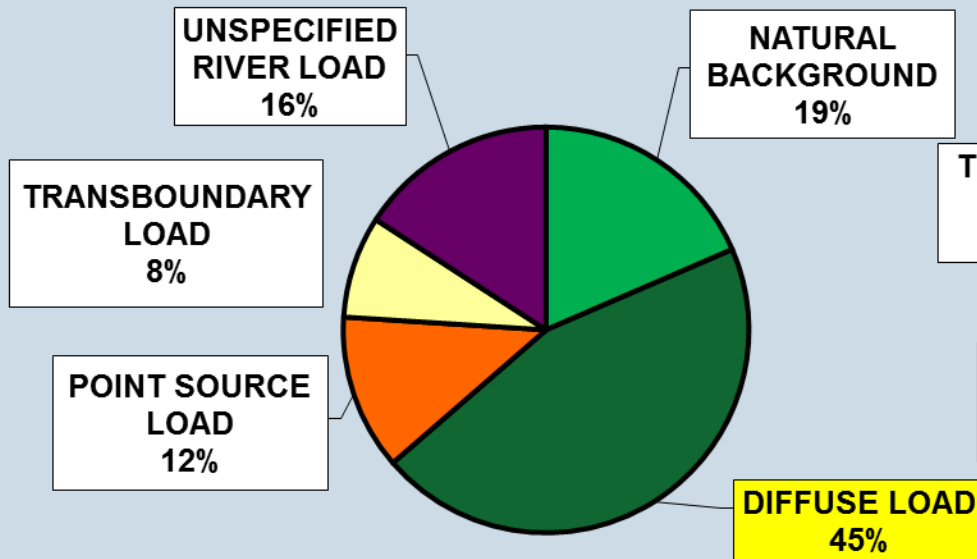


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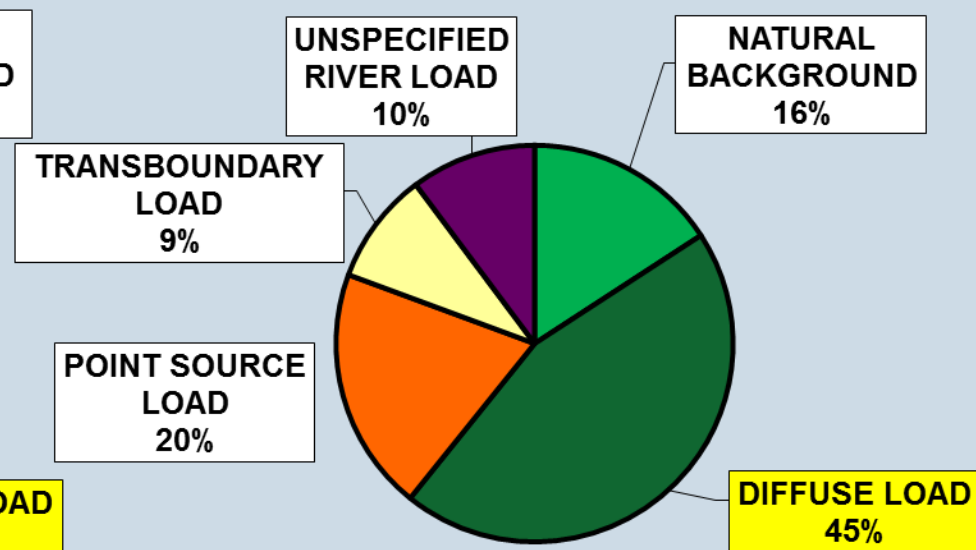
# Agricultural sector contribution to the nutrient load to the Baltic Sea

Agriculture contribution to the diffuse load  
- 70-90% for nitrogen and 60-80% for phosphorus

**Total nitrogen**



**Total phosphorus**



# CONVENTION ON THE PROTECTION OF THE MARINE ENVIRONMENT OF THE BALTIC SEA AREA, 1992 (HELSINKI CONVENTION)

## Annex III

Pollution from diffuse sources, including agriculture, shall be eliminated by promoting and implementing Best Environmental Practice.



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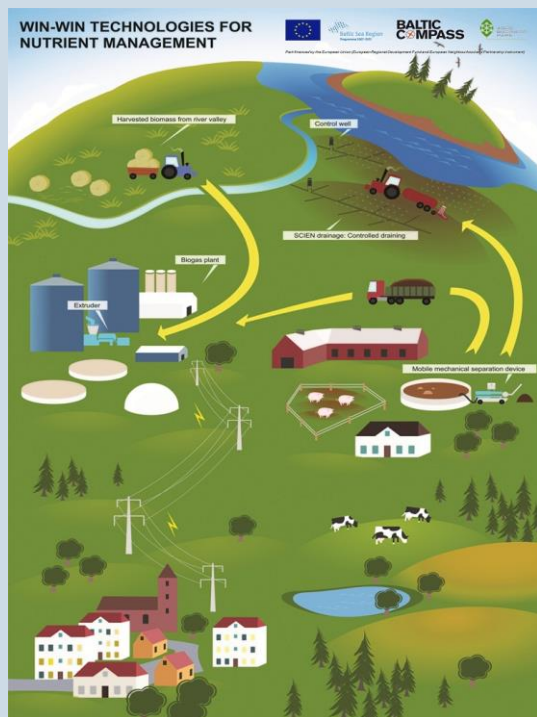


# Agri-environment measures by 2013 HELCOM Ministerial

- ✓ **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 (application of manure nutrient standards nationally by 2016-2018)**
- ✓ **Targeted measures to bring greatest effect**
  - ➔ **Identify/verify areas critical to nutrient pollution/losses**
  - ➔ **Promote phosphorus recycling**
  - ➔ **Innovative water management – upgrading of drainage**



# Agri-environment measures by 2013 HELCOM Ministerial



- ✓ ***Strengthening of regional and national regulations***
  - ➔ ***Accomplish revision of Annex III, Helsinki Convention (2016)***
  - ➔ ***Apply new BAT for intensive rearing of poultry and pigs (IED)***
- ✓ ***Continued policy and stakeholder dialogue***
  - ➔ ***Broaden the Agriculture and Environment Forum***
  - ➔ ***Annual stakeholder forum, thematic workshops, policy inputs***
  - ➔ ***Knowledge and technology exchange and transfer***

## HELCOM Group on Sustainable Agricultural Practices

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.

- Support development by 2016 of **national guidelines or standards for nutrient content in manure**, and develop by 2018 guidelines/recommendation on the use of such standards;



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To promote and advance towards applying by 2018 at the latest **annual nutrient accounting at farm level** taking into account soil and climate conditions giving the possibility to reach nutrient balanced fertilization and reduce nutrient losses at regional level in the countries



noting **the positive examples** of mandatory requirements on nutrient bookkeeping in some HELCOM countries



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## Outcome of the First Meeting of the Group on Sustainable Agricultural Practices (AGRI 1-2014)

1. The Meeting considered the proposed outline for possible activities on introduction of annual nutrient bookkeeping at farm level in the Baltic Sea countries as presented by Germany (document 6-3) and appreciated the willingness by **Germany to take lead on this topic within the Group.**
2. The Meeting discussed in general the **importance to link the work of the Group to needs on national level** for which it would be useful to collect feedback from experts dealing with nutrient accounting in the countries, **what are the issues of particular interest to exchange information on and to address on a regional level.**
3. The Meeting supported to take the first step of the proposed activities and organize, possibly in spring 2015, a **workshop to compile knowledge on the status of nutrient bookkeeping in the Baltic Sea countries.**



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# **The provisional questions for the Workshop to answer.**

## **1. What is status of annual nutrient accounting at the farm level in the region?**

- What is the level of introduction of the nutrient accounting in the countries?
- Which approaches/methodologies are preferable?

## **2. Which are the main obstacles/difficulties for promotion of nutrient bookkeeping (legal, technical; economic, information, education, etc)?**

- What are the solutions to overcome the obstacles?
- Which could be the drives (legal acts, knowledge and information, economic reasons, etc)?



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**3. What is needed for the countries to be able to introduction of annual nutrient bookkeeping at farm level?**

What kind of assistance for the countries is needed: Further information exchanges/ learning from each other; expertise; study visits; pilot studies/projects; development of the legal framework; political discussion?

**4. Which steps at the national and regional level will the countries likely be able to take within the next 2 years?**

Starting point for the discussion at the HELCOM AGRI group regarding regional measures/roadmap towards 2018?



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