

HELCOM workshop on status of nutrient bookkeeping in the Baltic Sea countries



28-29 April, Oldenburg, Germany

Introduction

HELCOM workshop on status of nutrient bookkeeping in the Baltic Sea countries:

- Took place on the 28-29 April in Oldenburg
- Organized by the Chamber of Agriculture Lower Saxony and the Federal Environmental Agency in Germany
- Chaired by Mr. Dietrich Schulz and Mrs. Anette Pedersen
- National experts from Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden presented the status of nutrient bookkeeping in their country (The presentation of Russia was held substituted by Mr. Dimitry Frank-Kamenetsky)

Aims of the workshop

Sustainable agricultural production is a key to the success of reaching a healthy Baltic Sea. Effective nutrient management can bring opportunities for better addressing nutrient losses to the sea.

The Baltic Sea countries agreed at the 2013 HELCOM Ministerial Meeting to promote and advance towards applying by 2018 at the latest annual nutrient accounting at farm level

The workshop aimed to identify the status of the nutrient bookkeeping and balance calculations in the Baltic Sea countries (relevant legislation, mandatory or voluntary schemes, reporting systems, responsible authorities etc.)

Nutrient regulatories in the Baltic Sea countries

| Country | Nutrient accounting | Fertilization plan | Crop specific nitrogen application level | Field specific documents | Centralized database | Limits for nutrients from livestock | Regulatory for application of organic fertilizers |
|-----------|---------------------|-------------------------|------------------------------------------|--------------------------|-------------------------------|-------------------------------------------------------------|---------------------------------------------------|
| Denmark | X | X | X | | X | X; 170 kg N ha ⁻¹ | X |
| Estonia | | X ^{>300 LU} | | X | | X; 170 kg N ha ⁻¹ | |
| Finland | | X ^{in AES} | X | X ^{in AES} | | X; 170 kg N ha ⁻¹ | X |
| Germany | X | X ^{from 2016} | X ^{from 2016} | | | X; 170 kg N ha ⁻¹ | X |
| Latvia | | X ^{in NVZ} | X | X | X ^{in NVZ from 2016} | X; 170 kg N ha ⁻¹ | X |
| Lithuania | | X ^{>50 ha} | | | | X; 170 kg N ha ⁻¹ | X |
| Poland | | X [*] | X | X | | X; 170 kg N ha ⁻¹ | X |
| Russia | | | | | | | |
| Sweden | | X ^{in NVZ} | | | | X; 22 kg P ha ⁻¹ 170 kg N ha ⁻¹ | X |

*farms with intensive livestock production (40000 posts poultry, 2000 posts pigs, 750 posts cows) and in NVZ if >100 ha

**For livestock productions when manure has a high content of phosphorus (all animals but cows) the limit is 140 kg N ha⁻¹

AES → Agri-environmental scheme

Conclusions (1)

Main obstacles for promotion of nutrient bookkeeping in the Baltic Sea region are:

- Insufficient or missing data on production and consumption quantity
- Uncertainties of standard values (manure excretion, uptake in crops ...)
- Differences in used methodologies to assess nutrient surplus
- Lack of awareness among farmers on advantages of nutrient accounting
- Low level of cooperation and engagement of involved parties
- Undeveloped legal framework regulating nutrient management and control of nutrient flows in agriculture

Conclusions (2)

The following priorities for implementation in the coming 1-2 years were identified:

- Stocktaking and harmonization of the standard values for manure excretion, nutrient contents in manure, crop uptake and others
- Finding concepts for monitoring farm level bookkeeping and balances to be used for regional nutrient balances and to identify hot spots
- Increase of education and awareness (e.g. material for teachers) at all levels

Conclusions (3)

Need for regional cooperation in promoting and advancing nutrient bookkeeping in the Baltic Sea countries by:

- Establishing dialogue between regions with similar environmental and economic conditions (e.g. concerning intensity and character of agricultural production)
- Seeking for methods to measure nutrient surplus based on field balances depending on soil type, which can be recommended for use in the region
- A list of best regional practices, which could be used as a pick-up list to promote nutrient bookkeeping
- Need for unification of to calculate nutrient balances for all countries, but based on national factual figures
- Need for common understanding of terminology used (accounting, bookkeeping, balancing, planning)

Nutrient Bookkeeping in Germany

INPUT Crop production



Mineral and secondary fertilizer



Organic fertilizer (Animal manure)



Symbiotic Nitrogen fixation

Nitrogen offtake



Cash-crops



Fodder

Field balance
(Crop production)

Surplus crop production

- Soil fixation
- Groundwater
- Drainage
- Atmosphere

Bookkeeping

Standard value

Calculated

Questions and discussion

