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## The HELCOM Working Group on Agriculture (WGA)

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### Abstract

Agriculture is a major contributor to the pollution of the Baltic Sea Area. In order to reduce marine environment pollution and to improve environmental quality the states of the Baltic sea basin established the Helsinki commission, which includes also a group of agricultural experts. The contribution describes objectives, tasks and organisation of the Working Group on Agriculture of the Helsinki Commission (HELCOM WGA), for the protection of the Baltic Sea environment.

*Key words: Baltic Sea, eutrophication, Helsinki Commission, marine environment protection*

### Zusammenfassung

Landwirtschaft trägt wesentlich zur Verschmutzung der Ostsee bei. Mit dem Ziel verbesserter einer Verringerung unerwünschter Belastungen aus der Landwirtschaft und der Verbesserung der Umweltqualität haben wurde die Helsinki-Kommission zum Schutz der Ostsee gegründet, die in Fragen der Landwirtschaft von einer Experten-gruppe, der "Arbeitsgruppe Landwirtschaft" fachlich beraten wird. Der Beitrag beschreibt Zielsetzungen, Aufgaben und Organisation der Arbeitsgruppe Landwirtschaft der Helsinki Kommission zum Schutz der Ostsee (HELCOM WGA).

*Schlüsselworte: Eutrophierung, Helsinki Kommission, Ostsee, Meeresumweltschutz*

### 1 Introduction

HELCOM stands for Helsinki Commission - Baltic Marine Environment Protection Commission -, which is the organisation dealing with the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Fig. 1). The present contracting parties to HELCOM are Denmark, Estonia, European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. HELCOM meets annually and, from time to time, meetings are held at ministerial level. HELCOM unanimously adopts Recommendations for the protection and preservation of the marine environment of the Baltic Sea area which the governments of the Contracting Parties shall reflect in their national systems.<sup>1</sup>

### 2 The HELCOM Working Group on Agriculture

The HELCOM Working Group on Agriculture was established in 1999. Its mandate is to intensify HELCOM's activities in the field of "agriculture and the marine environment", especially with a view to a reduction of nutrient inputs into the Baltic Sea from agricultural sources (Tab. 1). According to the Terms of Reference, the current duration of the work programme of the WGA is three years. The group must report its results to all relevant HELCOM bodies, i.e. Programme Implementation Task Force (PITF)<sup>2</sup> and HELCOM LAND as well as to the HELCOM General Assembly on a regular basis.

The WGA is composed of scientists and experts from the Baltic Sea riparian states, who are searching for ways to prevent harmful inputs from agriculture. An important goal is to implement the agro-environmental recommendations of HELCOM in Estonia, Latvia, Lithuania, Poland, Russia and Belarus. Another aim in this context is the marked reduction of the input of nutrients from agriculture. This aim is based on the Ministerial Declaration of the HELCOM meeting of 15. February 1988, in which it was agreed (for the period from 1985 to 1995) to reduce nutrient inputs into the Baltic Sea by 50 %. Further action continues to be necessary here, as in the case of nitrogen inputs in particular, that aim has not yet been achieved.

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<sup>1</sup> More information about HELCOM: [www.helcom.fi](http://www.helcom.fi)

<sup>2</sup> Members of the Programme Implementation Task Force (PITF) are the HELCOM Contracting Parties, Governments of Belarus, Czech Republic, Norway, Slovak Republic and Ukraine, Council of Europe Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Nordic Environment Finance Corporation, Nordic Investment Bank, World Bank and the International Baltic Sea Fishery Commission.

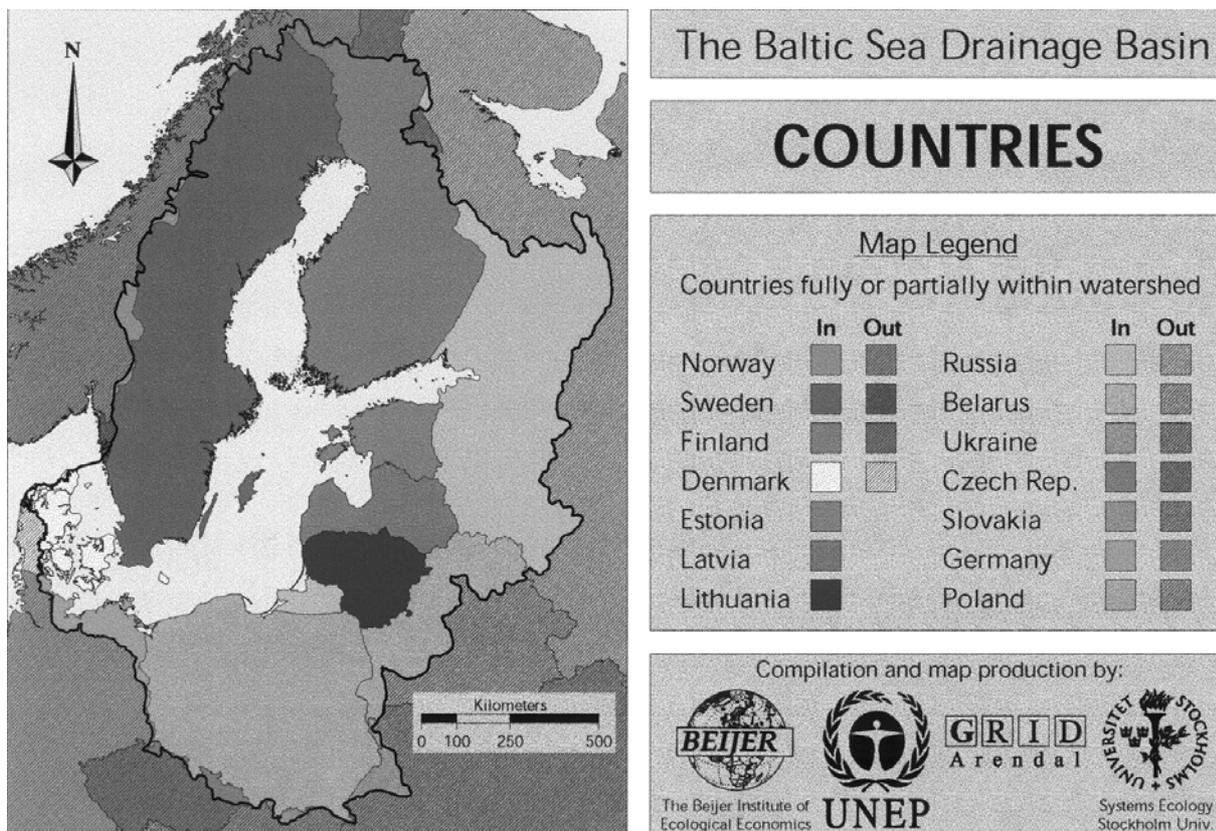


Fig. 1:  
Countries in the Baltic Sea drainage basin

Table 1:  
Sources of nitrogen load to the Baltic Sea (1000 t N/year)

Country/drainage basin	Water transports		Direct discharge	Air deposition	Total	%
	Agricultural land	Others				
Swedish Bothnian Bay	0.5	17.0	1.1	1.6	20.2	1.8
Swedish Bothnian Sea	1.3	25.9	3.8	5.4	36.4	3.4
Swedish Baltic Proper	25.3	7.6	13.0	11.2	57.1	5.2
Finnish Bothnian Bay	7.1	19.4	4.6	1.3	32.4	3.0
Finnish Bothnian Sea	8.9	11.2	3.9	1.2	25.2	2.3
Gulf of Finland	10.2	5.7	12.8	0.8	29.5	2.7
St. Petersburg	2.6	65.3	3.3	7.1	78.3	7.1
Kaliningrad	2.5	8.5	2.7	4.4	18.1	1.7
Poland	90.5	152.3	43.6	25.7	312.1	28.5
Latvia	6.7	85.2	0.5	6.7	99.1	9.0
Lithuania	8.2	69.7	1.6	9.4	88.9	8.1
Estonia	3.8	22.5	4.3	6.4	37.0	3.4
Germany	20.1	9.1	4.1	78.5	111.8	10.2
Denmark	31.4	16.6	5.5	25.3	78.8	7.2
Belgium	-	-	-	4.8	4.8	0.4
Netherlands	-	-	-	11.1	11.1	1.0
Norway	-	-	-	4.9	4.9	0.5
France	-	-	-	12.4	12.4	1.1
United Kingdom	-	-	-	37.3	37.3	3.4
Total	219.1	516.0	104.8	255.5	1095.4	100.0
%	20.0	47.1	9.6	23.3	100.0	

(from: Gren, I.-M., Söderqvist, T. and Wulff, F. (1997) Nutrient reductions to the Baltic Sea: Ecology, costs and benefits. Journal of Environmental Management 51, 123-143)

Table 2:  
Sources of phosphorus load to the Baltic Sea (1000t P/year)

Country/drainage basin	Water transports		Direct discharge	Total	%
	Agricultural land	others			
Swedish Bothnian Bay	0	0.4	0.1	05	1.4
Swedish Bothnian Sea	0.2	0.8	0.2	1.2	3.3
Swedish Baltic Proper	0.5	0.1	0.5	1.1	3.0
Finnish Bothnian Bay	0.7	0.7	0.1	1.5	4.2
Finnish Bothnian Sea	0.9	0.3	0.1	1.3	3.6
Gulf of Finland	0.5	0.2	0.2	0.9	2.5
St. Petersburg	0.3	2.0	0.5	2.8	7.7
Kaliningrad	0.1	0.1	0.4	0.6	1.7
Poland	6.5	6.7	5.2	18.4	50.8
Latvia	0.7	0.2	0.5	1.4	3.9
Lithuania	0.4	0.6	0.1	1.1	3.0
Estonia	0.1	1.0	0.1	1.2	3.3
Denmark	0.9	0.5	0.3	1.7	4.7
Germany	1.0	0.6	0.9	2.5	6.9
Total	12.8	14.2	9.2	36.2	100.0
%	35.4	39.2	25.4	100.0	

(from: Gren, I.-M., Söderqvist, T. and Wulff, F. (1997) Nutrient reductions to the Baltic Sea: Ecology, costs and benefits. *Journal of Environmental Management* 51, 123-143)

### 3 The Annex on Agriculture in the HELSINKI convention

As an important step to this end, one of the main tasks among others of the Working Group on Agriculture (WGA) is the implementation of the Annex III "Agriculture" of the Helsinki Convention (Annex III – Prevention of Pollution from Agriculture<sup>3</sup>). The Annex III of the Helsinki Convention sets out requirements for environmentally compatible agriculture. These requirements have to be complied with by the Baltic Sea riparian states either by 2002 or, in the case of Estonia, Latvia, Lithuania, Poland and Russia, 2011.

This implementation requires *inter alia* the development of national programmes of measures and guidelines. The WGA supports the Countries in Transition in the elaboration and introduction of "guidelines of good agricultural practice" (GAP Guidelines). The guidelines will provide, for example, concrete recommendations for the environmentally sound use of fertilisers and guidance on the storage of farm manure. The medium-term aim is to demonstrate the use of these GAP guidelines in agricultural practice in selected pilot regions and farms. Based on these pilot projects, the aim for the medium to long term is the application of the GAP guidelines throughout the Baltic Sea catchment area.

Another task of the WGA is the elimination of agricultural "hot spots", i. e. regions in which agricultural activities make a disproportionately large contribution to the

pollution of the (marine) environment. The list of agricultural "hot spots" currently comprises 17 such areas, which are characterised predominantly by intensive livestock farming. Measures to improve the environmental situation have already been taken in most of these areas. The task of the WGA here is to assist the countries in the initiation of measures to eliminate these "hot spots" and, following successful implementation of these measures, to verify, on the basis of specific criteria, whether they have brought about environmental improvements and whether the "hot spots" concerned can be deleted from the list.

Furthermore the WGA sees also a need to evaluate the impact of changes in agricultural production practices (e. g. implementation of Precision Agriculture(PA)), new production inputs (e. g. genetically modified organisms (GMO's)) and political priorities (e. g. featuring of Organic Agriculture).

Since it was first established, the WGA has developed into an important forum on the subject of "agriculture and the environment", providing the scientists and experts from, in particular, countries in transition with the opportunity to discuss specific issues and establish contacts. Future activities will also concern the long term change of European agriculture towards improved environmental friendliness and sustainability.

#### References

- Gren I-M, Söderqvist T and Wulff F (1997) Nutrient reductions to the Baltic Sea: Ecology, costs and benefits. *Journal of Environmental Management* 51: 123-143.
- UNEP/GRID-Arendal (2001) United Nations Environment Programme GRID-Arendal, Longum Park, Service Box 706, N-4808 Arendal, Norway; [www.grida.no](http://www.grida.no)

<sup>3</sup> The Annex III of the Helsinki Convention was adopted on 26 March 1998 as HELCOM RECOMMENDATION 19/6 - Amendments to Annex III of the Helsinki Convention concerning regulations on prevention of pollution from agriculture (see Attachment).

**Attachment****HELCOM RECOMMENDATION 19/6**

Adopted 26. March 1998, having regard to Article 13, Paragraph b) of the Helsinki Convention

**Except of the Annex III of the Helsinki Convention concerning regulations on prevention of pollution from agriculture**

**THE COMMISSION,**  
.....

**CONSCIOUS** that agricultural activities within the Baltic Sea catchment are responsible, inter alia, for pollution of water and air by nitrogen, phosphorus and plant protection products, causing negative effects on the Baltic Sea ecosystem including eutrophication, oxygen depletion and reduced biological diversity,  
.....

**NOTING** Article 19, paragraph 2 of the 1992 Helsinki Convention according to which the Baltic Marine Environment Commission established pursuant to the 1974 Helsinki Convention is the Commission under the 1992 Helsinki Convention,  
.....

**URGES** that:

- a) the Governments of Denmark, Finland, Germany and Sweden shall develop programmes for the implementation of measures referred to in Part II of Annex III by 1. January 2000 and implement them by 1. January 2002,
- b) the Governments of Estonia, Latvia, Lithuania, Poland and Russia shall develop programmes for the implementation of measures referred to in Part II of Annex III and implement them as soon as possible but not later than 1. January 2002 and 1. January 2011, respectively,

**REQUESTS** the Governments of the Contracting Parties to report on the progress of implementation in accordance with the agreed deadlines.

**Attachment to HELCOM Recommendation 19/6 concerning Amendments to Annex III**

**Part II; Prevention of Pollution from Agriculture**

**Regulation 1; General provisions**

In accordance with the relevant parts of this Convention 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. The Contracting Parties shall elaborate Guidelines containing elements specified below and report to the Commission.

**Regulation 2; Plant nutrients**

The Contracting Parties shall integrate the following basic principles into national legislation or guidelines and adapt to the prevailing conditions within the country to reduce the adverse environmental effects of agriculture. Specified requirements levels shall be considered to be a minimum base for national legislation.

*1. Animal density*

To ensure that manure is not produced in excess in comparison to the amount of arable land, there must be a balance between the amount of animals on the farm and the amount of land available for spreading manure, expressed as animal density. The maximum amount of animals should be precised with consideration taken to the amount of phosphorus and nitrogen in manure and the crops requirements of plant nutrients.

*2. Manure storage*

Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large, to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months storage capacity. Urine and slurry stores should be covered or handled by a method that efficiently reduces ammonia emissions.

*3. Agricultural waste water and silage effluents*

Waste water from animal housings should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from the preparation and storage of silage should be collected and directed to storages for urine or liquid manure.

*4. Application of organic manures*

Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc) shall be spread in a way that minimizes the risk for loss of plant nutrients and should not be spread on soils that are frozen<sup>4</sup>, water saturated or are covered with snow. Organic manures should be incorporated

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<sup>4</sup> To be defined by national legislation depending on the regional climate and weather conditions

as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.

#### 5. Application rates for nutrients

Application rates for nutrients should not exceed the crops nutrient requirements. National guidelines should be developed with fertilizing recommendations and they should take reference to:

- a) soil conditions, soil nutrient content, soil type and slope;
- b) climatic conditions and irrigation;
- c) land use and agricultural practices, including crop rotation systems;
- d) all external potential nutrient sources.

#### 6. Winter crop cover

In relevant regions the cultivated area should be sufficiently covered by crops in winter and autumn to effectively reduce the loss of plant nutrients.

#### 7. Water protection measures and nutrient reduction areas

- a) Surface water  
Buffer zones, riparian zones or sedimentation ponds should be established, if necessary.
- b) Ground water  
Ground water protection zones should be established if necessary. Appropriate measures such as reduced fertilization rates, zones where manure spreading is prohibited and permanent grass land areas should be established.
- c) Nutrient reduction areas  
Wetland areas should be retained and where possible restored, to be able to reduce plant nutrient losses and to retain biological diversity.

### Regulation 3; Plant protection products

Plant protection products shall only be handled and used according to a national risk reduction strategy which shall be based on Best Environmental Practice (BEP). The strategy should be based on an inventory of the existing problems and define suitable goals. It shall include measures such as:

1. Registration and approval  
Plant protection products shall not be sold, imported or applied until registration and approval for such purposes has been granted by the national authorities.
2. Storage and handling  
Storage and handling of plant protection products shall be carried out so that the risks of spillage or leakage are prevented. Some crucial areas are transportation and filling and cleaning of equipment. Other dispersal of plant protection products outside the treated agricultural land area shall be prevented. Waste of plant protection products shall be disposed accordingly to national legislation.

### 3. Licence

A licence shall be required for commercial use of plant protection products. To obtain a licence suitable education and training on how to handle plant protection products with a minimum of impact on health and the environment shall be required. The users' knowledge regarding the handling and usage of plant protection products shall be updated regularly.

### 4. Application technology

Application technology and practice should be designed to prevent unintentional drift or run-off of plant protection products. Establishment of protection zones along surface waters should be encouraged. Application by aircraft shall be forbidden; exceptional cases require authorization.

### 5. Testing of spraying equipment

Testing of spraying equipment at regular intervals shall be promoted to ensure a reliable result when spraying with plant protection products.

### 6. Alternative methods of control

Development of alternative methods for plant protection control should be encouraged.

### Regulation 4; Environmental permits

Farms with livestock production above certain size should require approval with regard to environmental aspects and impacts of the farms.

### Regulation 5; Environmental monitoring

The Contracting Parties shall develop projects to assess the effects of measures and the impacts of the agricultural sector on the environment.

### Regulation 6; Education, information and extension service

The Contracting parties shall promote systems for education, information and extension (advisory service) on environmental issues in the agricultural sector.