



## Baltic Marine Environment Protection Commission

Seventh Meeting of the Working Group on Reduction of Pressures from the Baltic Sea Catchment Area

PRESSURE 7-2017

Vilnius, Lithuania, 24-26 October 2017

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<b>Document title</b>	Background document for development of a Baltic Sea regional nutrient recycling strategy
<b>Code</b>	6-2
<b>Category</b>	CMNT
<b>Agenda Item</b>	6 - Nutrients recycling and follow-up of HELCOM Recommendation on sewage sludge handling
<b>Submission date</b>	29.9.2017
<b>Submitted by</b>	Finland and Secretariat
<b>Reference</b>	Outcome of HOD 52-2017

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### Background

HOD 52-2017 supported the proposal by Finland to elaborate a regional nutrient recycling strategy and agreed in principle to include it as a topic to the 2018 Ministerial preparations and outcome. At the same time, the Heads of Delegation agreed that the work should be based on a step-by-step approach starting with elaboration of definitions, general vision and strategic targets for nutrient recycling, taking into account also contributions of different pollution sources, which will form a basis for discussion at the Ministerial Meeting. Finland took responsibility to lead drafting of the nutrient recycling strategy for the Ministerial Meeting. HOD 52-2017 mandated both Agri group and Pressure group to support the preparatory work.

The attached document provides information to support the preparation of the Ministerial decision on HELCOM nutrient recycling strategy.

The HOD online meeting on 26 September 2017 ([HOD 52A-2017](#)) considered and supported the document in principle and also noted that input by Pressure and Agri groups would also be taken into account in further developing of the proposal. The meeting also took note that Sweden will provide comments on the document by 10 October 2017.

Agri group arranged an informal consultation on-line meeting on 29 September 2017. Notes of this meeting are in the Annex.

### Action requested

The Meeting is invited to consider and give feedback to the background document prepared to support the development of a Ministerial decision on a HELCOM nutrient recycling strategy.

## Background document for development of a Baltic Sea regional nutrient recycling strategy

### **Background**

Circular economy is the key to more sustainable production and consumption systems of the future. Agriculture and food production relies on natural resources and cycles. As demands on natural resources, both non-renewable and renewable, grows, we risk depleting them beyond sustainable limits. We therefore need to be more resource-efficient in the way we use and re-use resources, improving feedback loops and integrating circular economy principles. The recycling of nutrients is essential to circular economy.

Nutrients from agricultural production and waste water treatment systems that have leached into the Baltic Sea cause eutrophication. This is one of the most serious challenges to the Baltic Sea. Phosphorus and nitrogen are essential nutrients to the growth of plants and the food production. The valuable resources have turned into a serious problem, when in the wrong place. There is a need to improve recycling of nutrients on land to close the loop and prevent losses to the sea to minimize the impact on the Baltic Sea. This also would help to preserve phosphorus resources for the future generations.

### **Nutrient cycling is a way to manage nutrient flows**

Nutrient recycling aims at creating a systemic approach to optimal use of nutrients in plant production and minimization of loss of nutrients in all parts of food system from field to fork. Key issues are fertilization according to the plant needs, good soil health for optimal nutrient intake, efficient manure management, returning of nutrients from food industry's side products back to the fields, reduction of food waste from the whole food system and proper treatment of the sewage sludge from waste water treatment plants returning the nutrients back to the soil in a safe manner.

When nutrients are recycled, less virgin raw materials are needed and large amounts of fossil fuels are saved, contributing also to climate change mitigation. Phosphorus is an unrenewable resource. The global phosphorus resources are limited and situated in geopolitically sensitive areas. As for nitrogen, the production of nitrogen fertilizers is a very energy intensive process and produces a lot of greenhouse gases. Manure is a key source of nutrients and organic matter, which in many areas accumulates in such a manner that spreading to nearby fields is not an option and more advanced processing solutions are needed. Active and optimized recycling of nutrients in manure, sewage sludge and industrial organic side products helps the protection of waterways and the soils. This is made possible when these biomasses are processed to be easily used and safe fertilizer products. There is a need for new innovations and technologies for recycling of nutrients in manure and sewage sludge which can create also new business opportunities.

### **HELCOM and nutrient recycling in the Baltic Sea region**

The HELCOM Contracting Parties agreed in the Ministerial Meeting in 2013 to enhance the recycling of phosphorus especially in agriculture and waste water treatment and to promote development of appropriate methodology.

HELCOM Agri group has been working to implement the Ministerial Meeting 2013 decisions concerning the development of advanced manure standards and application of nutrient accounting on farm level in the Baltic Sea region. Treating manure, not as a waste, but as a resource, requires taking manure nutrients appropriately into account when fertilizing the crops. The work of HELCOM Agri group done on manure standards and nutrient accounting has provided first important steps towards nutrient recycling.

HELCOM Pressure group has developed a recommendation on sewage sludge handling. The objective of the recommendation is to ensure maximum utilization of the valuable components contained in the sludge, and

simultaneously minimize possible negative environmental impact. It is important that the recycled nutrients should be in such a form that they can be effectively and safely utilized by the crop.

Sustainable practices are dealt also by HELCOM Recommendation on sustainable aquaculture. The document inter alia implies prevention of additional nutrient discharges by optimizing nutritive requirements and encourages the use of regionally sourced products as fish feed ingredients.

HELCOM arranged in spring 2017 a workshop on nutrient recycling in the Baltic Sea countries together with the European Union Strategy for the Baltic Sea Region to find suggestions for HELCOM to promote nutrient recycling in the region while preventing the spreading of hazardous substances, and ensuring a good environmental status of the Baltic Sea.

**A joint strategy on nutrient recycling could help to prevent nutrient losses to the sea and boost more effective management of nutrients**

As the next step towards improved and more systematic management of nutrient flows, a HELCOM strategy of nutrient recycling is proposed. The strategy would help HELCOM Contracting Parties to be more effective in reaching the goals of the Baltic Sea Action Plan. The strategy would contain a common vision and set out objectives for nutrient recycling. It could also lay out a basis for common and Contracting Parties' measures to improve nutrient recycling.

To confront the challenges of nutrient recycling we need to share the examples, knowhow and best practices. We also need to increase research and co-operation on the practical level. The new developments in digitalization and agro-ecological symbiosis systems open up new possibilities for nutrient circulation and resource efficiency. Economic benefits from new intelligent systems and new options to build cost efficient logistical systems could be a central element in the strategy.

Improved soil and nutrient management will also improve the production potential. Nutrient-rich waste and side streams generated in various processes should be able to be safely recycled. Solutions related to the efficient use, recycling, restoration and processing of nutrients could provide commercially viable added value.

The objective of the strategy would be to strengthen the work done in HELCOM countries to minimize losses to waters and combat eutrophication and better manage nutrient flows. Because none of us can tackle these challenges alone, we should be taking steps to solve them together. Many activities are ongoing and new knowledge and practical experiences accumulate quickly. The lessons learned should be shared between all HELCOM countries to facilitate a speedy transformation into circular economy and nutrient recycling. The HELCOM ambition would be to secure the best knowledge and capacity to all its Contracting Parties moving towards cleaner Baltic Sea.

## Notes of Agri group online consultation meeting

29 September 2017

Participants: Chair of Agri, Denmark, EU, Finland, Poland, Sweden, CCB, HELCOM Secretariat

### 1. Background for the Meeting

- a. The Meeting took note that the initiative by Finland to include nutrient recycling strategy as a topic in the Ministerial Meeting 2018 was supported by HOD 52-2017.
- b. The Meeting also took note that the background document on the nutrient recycling strategy by Finland was supported by HOD 52A-2017.
- c. The Meeting took note that an updated version of the background document as well as suggested Ministerial outcome text on nutrient recycling strategy should be submitted to the next online HOD meeting to be held on 13 November.

### 2. The background document on nutrient recycling strategy by Finland

- a. The Meeting took note of the background document on nutrient recycling by Finland presented by the Chair.
- b. The Meeting took note of the comments from HOD 52A-2017 to the background document.
- c. The Meeting suggested the following terms in the background document to be clarified: agro-ecological symbiosis, digitalization, economic benefits from new intelligent systems.
- d. The Meeting supported to keep the term “agro-ecological” in the document although “agro-ecological symbiosis” requires clarification.
- e. The Meeting agreed that definitions of nutrient recycling, nutrient flows and other terms used in the background document should be added to the beginning of the document.
- f. The Meeting agreed that publications used in the document should be mentioned as references.
- g. The Meeting suggested to make a link to risk to human health and environment.

### 3. Next steps

- a. The Meeting took note that the same background document will be submitted to Pressure group with added comments from this Agri group consultation meeting.
- b. The Meeting invited the Chair of Agri group to present the document to Pressure 7-2017, if schedule allows.
- c. The Meeting took note that HOD 52A-2017 invited Contracting Parties to send possible comment to the background document to the lead country Finland by 10 October.
- d. The Meeting decided to have a new online meeting to discuss the updated version of the background document and the suggested text for the Ministerial outcome on 31 October in the morning and invited the Secretariat to send an invitation.