Report

HELCOM Workshop on regional nutrient recycling strategy

7 November 2018, Warsaw, Poland

Contents

1 Introduction 2

2 Background 2

3 Vision 2

4 Drivers and challenges 2

4.1 Drivers 3

4.2 Challenges 3

5 Objectives 4

6 Next steps 5

Annex 1. List of participants 6

Annex 2. Programme 8

Annex 3. Three versions of the vision 9

Annex 4. Drivers and challenges 10

1 Introduction

The HELCOM Workshop on regional nutrient recycling strategy was organized by the Ministry of Agriculture and Rural Development of Poland and HELCOM in cooperation with the European Union Strategy for the Baltic Sea Region Policy Area Nutri on 7 November 2018 in Warsaw, Poland. The workshop was attended by all HELCOM Contracting Parties except for Latvia and Lithuania as well as HELCOM Observers BFFE, BSAG, CCB, EurEau, John Nurminen Foundation and WWF, the coordinators of EUSBSR PA Nutri and Hazards and invited guests. The list of participants is included in Annex 1. The workshop was chaired by Ms. Tarja Haaranen, Vice-Chair of HELCOM and Chair of HELCOM Agri group.

The aim of the workshop was to identify the drivers and challenges for nutrient recycling in the Baltic Sea Region and discuss the common vision and objectives for the Baltic Sea Regional Nutrient Recycling Strategy. The programme of the workshop is included in Annex 2.

2 Background

The HELCOM Ministerial Meeting, held on 6 March 2018 in Brussels, committed to elaborating by 2020 a Baltic Sea Regional Nutrient Recycling Strategy that aims for reduced nutrient inputs to and eutrophication of the Baltic Sea. The agreed principles for the strategy include focusing on measures at source rather than end-of-pipe solutions, best available scientific knowledge and safe recycling of nutrients especially from manure and sewage. The strategy will be elaborated by a step-by-step approach that includes creating first a vision, secondly, the objectives and finally possible nutrient recycling measures to be included in the updated Baltic Sea Action Plan.

The HELCOM Group on Sustainable Agricultural Practices (Agri group) is leading the work in cooperation with the HELCOM Working Group on Reduction of Pressures from the Baltic Sea Catchment Area (Pressure Working Group). Finland is the lead country and developing the Baltic Sea Regional Nutrient Recycling Strategy is one of the priorities of the HELCOM chairmanship of Finland 2018 - 2020. A nutrient recycling strategy drafting group consisting of Contracting Parties and Observers has been formed to support the work. The group held its first online meeting on 28 September 2018 discussing the work plan and vision for the strategy.

3 Vision

Defining the vision is the starting point for the work on the regional nutrient recycling strategy. This work has already been launched by the drafting group. The initial draft of the vision was presented by Ms. Marja-Liisa Tapio-Biström, Ministry of Agriculture and Forestry of Finland (Annex 3) in three versions. The participants agreed that the vision should be a short memorable description. However, the version C was too short and required specification.

General reflection on the other versions of the vision was that the term “sustainability” was to be further specified in the strategy text to avoid its misinterpretation. Objectives in their turn are to identify specific aspects of the vision and are to be equally ranked, forming, together with the measures intended to reach the objectives, a tree-like structure of the strategy. The vision will be further elaborated by the drafting group.

4 Drivers and challenges

The participants identified multiple drivers that will promote nutrient recycling from both manure and sewage in the Baltic Sea Region. The participants also acknowledged many challenges that could hinder the recycling of nutrients in the region. The drivers and challenges were identified in groups focusing on either agricultural or waste water sector but mostly the same drivers and challenges were recognized for both sectors.

4.1 Drivers

Protecting the environment

Eutrophication status of the Baltic Sea and reaching the agreed nutrient reduction targets is one of the major drivers to increase nutrient recycling in the region. More efficient use of nutrients and closing the nutrient loops is needed to reduce nutrient runoff to the sea and reach the goals of the Baltic Sea Action Plan.

There are also other environmental concerns such as loss of organic material in agricultural soils and climate change that can be drivers for nutrient recycling. Adding organic material to the soil improves the soil condition and studies are ongoing if binding carbon to agricultural soils could help to mitigate climate change. The projected increase in nutrient runoff as an effect of climate change is an additional driver to aim for reducing nutrient losses with nutrient recycling.

Circular economy

The concept of circular economy has been offered as a solution to the problem how to cope with finite resources when the world population is expected to keep on growing. The EU launched a Circular Economy package in 2015 and many countries are working to make their own circular economy strategies and to set goals for recycling rates. The circular economy concept is a driver to close the loops in all sectors.

Independence of external phosphorus supplies

There are phosphorus rock resources only in few places in the world and much of the feed for the livestock sector comes overseas. Aiming to be more independent of external phosphorus supplies to improve food security could be a driver for nutrient recycling.

Legislation and support system

Already in the existing legislation and agricultural support systems there are some incentives to enhance recycling nutrients. Also, the EU is currently revising its fertilizer regulation.

Concentration of nutrients in "hot spot" areas

There are areas in the region with an excess of nutrients either in agricultural areas or industry sites. There is a need to spread/reallocate these nutrients more evenly within the region.

Consumer demand and public concern

The consumers demand that the food they eat is produced in an environmentally friendly way. However, they are also concerned with food safety which is reflected in the challenges part.

Improved farm economy and reduced the costs of sewage handling

In the discussions, economic aspects were often referred to as a challenge for nutrient recycling. But nutrient recycling could also be a way to improve farm economy by reducing dependence of mineral fertilizer purchases. Also for waste water sector, nutrient recycling could be an economic model to reduce the costs of sewage handling.

4.2 Challenges

Awareness and motivation

Changing the status quo is never easy. There is a need to raise the awareness of policymakers, farmers, other stakeholders and the general public of the benefits of nutrient recycling and of the value of nutrients and carbon in manure and other organic fertilizers. To make recycled fertilizers acceptable, their safety needs to be addressed.

Safety concerns

There is a lack of a system to assure that sewage based products are safe to use. Further research and communication is needed. Also, there are concerns in some countries regarding possible pharmaceutical residues in manure.

Economic issues

The economic situation at farms is challenging and any added costs of investments might not be feasible. There is a cost for moving excess manure to other regions or processing it and with the current price of mineral fertilizers this is yet not an attractive option financially. In the waste water sector, investments in new technology would also be needed which is a challenge.

Policy coherence

Issues related to nutrient recycling often fall under several sectorial ministries thus creating a challenge for coordinating policies to enhance nutrient recycling.

New practices and technologies

To increase nutrient recycling requires new practices and technologies for both agricultural and waste water sector. For example, excess manure should be processed to fertilizer products in areas where there is a surplus of nutrients and new technologies are required to process sewage sludge into safe fertilizer products.

Environmental impact as a whole

It is important to take into consideration all environmental impacts of nutrient recycling and make sure not to create new problems while alleviating others.

Concentration of plant and animal production in different regions

Cooperation between plant and animal production farms helps to spread the nutrients more evenly. However, in many parts of the region plant and animal production are concentrated in different areas which is a challenge. It is not financially feasible to transport manure for long distances.

5 Objectives

A number of possible objectives for the strategy were recognized. Also, some possible indicators to measure the progress were identified.

Baltic Sea region as a model area for nutrient recycling

An ambitious, overarching objective would be turn Baltic Sea region into a forerunner and a model area for nutrient recycling. Progress could be measured with the percentage of recycled nutrients in the region.

Reducing environmental impacts

The HELCOM Ministerial Meeting decided that the aim of the strategy is to reduce nutrient inputs to and eutrophication of the Baltic Sea. The progress in reducing nutrient inputs is already measured by achieving the maximum allowable inputs of nutrients to the sea. Other environmental objectives could be to reduce greenhouse gas emissions and improve soil quality. It is important to pay attention to the environmental impact as a whole.

Knowledge exchange

According to the overview by HELCOM, the Baltic Sea region countries are in different stages when it comes to nutrient recycling. Knowledge exchange between the countries and different levels and development of knowledge about nutrient recycling were mentioned as possible objectives for the strategy.

Increasing self sufficiency

Substituting mineral fertilizers and imported feed by local nutrient recourses would increase self-sufficiency and could be an objective of the strategy. It could be measured by the percentage of locally produced feed and the percentage of mineral fertilizers vs. organic fertilizers of the total amount of applied fertilizers.

Increasing nutrient use efficiency

Increasing nutrient use efficiency was considered vital for closing the nutrient cycles. Nutrient balance calculations could be a way to measure this.

Awareness raising

The lack of awareness was recognized as a challenge to enhance nutrient recycling in the region. One objective of the strategy could be to raise awareness of target groups of the value of nutrients in manure and sewage and of the need to recycle nutrients. This could create acceptance for recycled nutrients and could be measured by the level of integration of nutrient recycling into local and national policies.

Safe nutrient recycling

Safety concerns are also a challenge for promoting nutrient recycling and could be addressed in the objectives of the strategy. Thus an objective could be to minimize the risk of nutrient recycling for humans and environment. Possible objectives such as acceptable risk levels of harmful substances and reduction of harmful substances at source were suggested.

Creating business opportunities

Economic issues were recognized to be a challenge for nutrient recycling but inventing solutions for the problem of excess nutrients could create new business opportunities. This could be an objective for the strategy.

Policy coherence

Improving the policy coherence was considered important to promote nutrient recycling and also a possible objective of the strategy.

6 Next steps

The notes of the workshop were submitted to the AGRI 6a-2018 meeting. The workshop report will be used as background material for the discussion on the vision and objectives in the nutrient recycling drafting group in the beginning of 2019. The drafting group outcomes will be submitted to AGRI 7-2019 and PRESSURE 10-2019 Meetings for further commenting.

Annex 1. List of participants

Name	Representing	Organization	Email address
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Annex 2. Programme

7 November 2018

Venue: Room A, Falenty Centrum Szkoleniowo-Konferencyjne (address: al. Hrabska 4b, 05-090 Raszyn-Falenty)

Chair: *Ms. Tarja Haaranen, Vice-Chair of HELCOM, Chair of HELCOM Agri group, Ministry of the Environment, Finland*

Time	**Activity**
9:00 – 10:30	Welcoming words *Ms. Monika Zabrzeńska-Chaterera, Ministry of Agriculture and Rural Development, Poland* Nutrients in the Baltic Sea region and HELCOM nutrient recycling commitments *Ms. Susanna Kaasinen, HELCOM Secretariat* Work plan and vision of Baltic Sea Regional Nutrient Recycling Strategy *Ms. Marja-Liisa Tapio-Biström, Ministry of Agriculture and Forestry, Finland* Common discussion on the vision
10:30 – 12:00	Manure & sewage parallel sessions part I: • drivers and challenges
12:00 – 13:00	Lunch
13:00 – 15:00	Parallel sessions part II: • regional objectives
15:00 – 15:30	Coffee break
15:30 – 17:00	Common discussion on main findings of the parallel sessions Discussion and conclusions on scope, limitations, timeline and main objectives for the strategy
18:00 -	Dinner

Annex 3. Three versions of the vision

Version A

Nutrients are managed sustainably in all HELCOM countries, securing the productivity of agriculture through efficient use of nutrients and cost effective nutrient recycling and minimizing nutrient loss to the Baltic Sea environment.

Nutrient rich organic residues originating from areas with high nutrient surplus and accumulation are utilized for production of safe and economically viable fertilizer products.

Nutrients are recycled using best available technologies for the specific conditions and ensuring environmental safety.

Regional challenges are solved by applying scientific research and knowledge exchange bringing added value for the whole Baltic region.

Version B

VISION

Nutrients are managed sustainably in all HELCOM countries, securing the productivity of agriculture through efficient use of nutrients and cost effective nutrient recycling, minimizing nutrient loss to the Baltic Sea environment.

OBJECTIVES

Nutrient rich organic residues originating from areas with high nutrient surplus and accumulation are utilized for production of safe and economically viable fertilizer products.

Nutrients are recycled using best available technologies for the specific conditions and ensuring environmental safety.

Regional challenges are solved by applying scientific research and knowledge exchange bringing added value for the whole Baltic region.

Version C

Nutrients are managed sustainably in all Baltic Sea countries

Annex 4. Drivers and challenges

The following drivers and challenges for nutrients recycling in agricultural sector were identified:

Drivers

1. Status of the environment including eutrophication of the Baltic Sea, climate change and soil
2. Environmental commitments, e.g. BSAP and climate change convention
3. Circular economy
4. Legislation and support system
5. Concentration of nutrients in “hot spot” areas
6. Consumer demand and public concern
7. To improve the profitability of agriculture

Challenges

1. Economic issues
2. Awareness and motivation of farmers, public and stakeholders
3. Harmful substances
4. Policy coherence
5. Challenges in farming practices and technologies
6. Environmental impact as a whole
7. Splitting agriculture production in plant and animal production

The following drivers and challenges for nutrients recycling in waste water sector were identified:

Drivers

1. Awareness & understanding of the need to protect the Baltic Sea
2. Independence of external P supplies and closing the loop
3. Economic model to reduce the costs of sewage handling
4. Coherence & consistency of legal framework

Challenges

1. Lack of understanding why to recycle nutrients
2. Lack of the system to assure that sewage based products are safe to use
3. Risk of contamination
4. Unacceptance of recycled fertilizers
5. Lack of holistic cross-sectoral approach