Stockholms universitet

2020-01-16

Stockholm University Baltic Sea Center comments on EU Commission roadmap for upcoming circular economy action plan

In essence, we support the roadmap but urge the Commission to more clearly include the agriculture sector in the roadmap. Presently the urgent need to close the plant nutrient (nitrogen and phosphorous) loops in the agricultural systems is lacking from the roadmap.

Plant nutrient circulation
Agriculture is a large source of nutrients to the Baltic Sea and other waters within the EU. In the Baltic Sea region only about half of the nutrients in mineral fertiliser and manure are converted to harvested crops. In other words, nutrient use efficiency is very low and must improve in order both to combat eutrophication but also increase resource efficiency.

Human inputs of nitrogen and phosphorus to the Baltic Sea are responsible for the eutrophication that is apparent in algal blooms, reduced water clarity, changes in species composition, and reduced oxygen concentrations in bottom waters.

The Baltic Sea is particularly sensitive to eutrophication because of limited exchange of water with the North Sea. Together, these environmental stressors limit opportunities for people to enjoy the sea. The possibility to develop Blue Economy by tourism is severely hampered.

Agriculture is the single largest source of new nutrients to the Baltic Sea, contributing about half of total waterborne nitrogen and phosphorus inputs. A major portion of mineral fertiliser and livestock feed which is imported to the catchment, is transformed into manure; however, the nutrients in manure are often not used efficiently in crop production. This inefficiency can result in the accumulation of nutrients in agricultural soils and increase the risk of losses to lakes, streams, and the Baltic Sea. There is potential to reduce these nutrient losses by improving manure management and replacing imported mineral fertilisers with manure. Reducing the import of livestock feed and the number of animals in regions with high livestock densities can also reduce agricultural nutrient surpluses. Please read more here regarding nutrient flows in the Baltic Sea region.

Stockholms universitets Östersjöcentrum

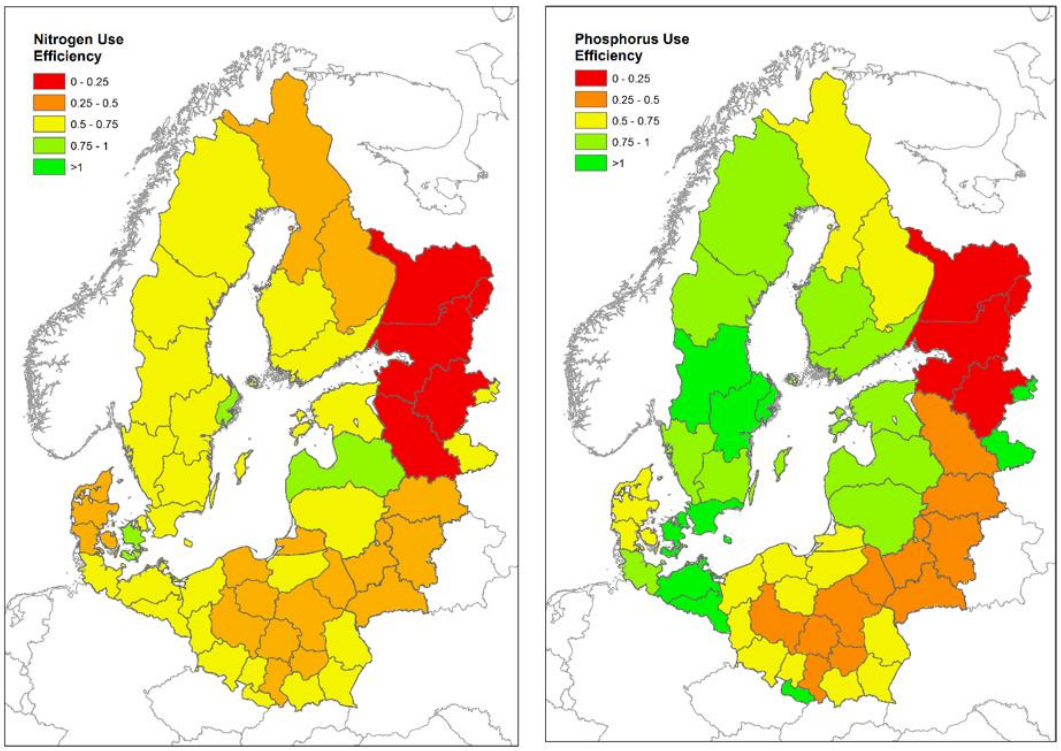
Stockholms universitets
Östersjöcentrum
106 91 Stockholm

Besöksadress:
Svante Arrhenius väg 20 F
Frescati

Telefon: 08-16 37 18
E-post: ostersjocentrum@su.se
www.su.se/ostersjocentrum

Stockholms universitet

Nutrient use efficiency, NUE, for crops varies greatly between and within countries in the Baltic Sea region and has generally improved in the past decade, with some exceptions.



For regions that import livestock feed and produce manure in excess of what crops need, manure often becomes a problematic waste product, not a resource. These excesses cause nutrient imbalances and increase the risk of losses to the aquatic environment. There is opportunity for agricultural systems in the Baltic Sea region to adopt the principles of the circular economy – and close the nutrient cycle – by using manure more efficiently to substitute for imported mineral fertilisers. Recycling and increased NUE is especially important in the case of phosphorus, because mineral phosphorus fertiliser derive from phosphate rock, which is energy intensive to mine, brings toxic cadmium into the agricultural system, and often come from politically unstable regions.

Detailed roadmap comments

The roadmap states that *"the EU market for secondary raw materials needs to be further developed"*. We suggest stressing the development of a market for organic

Stockholms universitet

fertilisers especially originating from manure, in order to increase the circulation of nutrients in the agricultural sector. This would contribute to the implementation of the Fertiliser Trade Regulation.

It would also be in line with the following statement in the roadmap; *"the initiative will focus on those actions with the greatest impact in increasing sustainable resource use, capitalising on the potential of a well-functioning internal market to support the uptake of circular solutions."* In order to get a market for renewable fertilisers going, support to the development of new organic fertilisers originating from manure is necessary. This should be included in the section in the roadmap discussing *innovation and investment opportunities".* Presently this section does not mention the agriculture sector.

In section B. the roadmap states "high impact sectors". We suggest adding agriculture to this list.

Policy actions
The Baltic Sea Center suggest that the upcoming action plan include the following policy actions in order to increase the recycling of phosphorus in agriculture and reducing over-fertilisation.

- National actions should not neglect manure.
- Improve the use efficiency of manure use in agriculture by, for example, setting legal limits for fertilisation of soils and supporting farm extension on nutrient management, including soil nutrient mapping.
- Increase the proportion of locally produced feed in animal husbandry, as stated in the EU strategy for the promotion of protein crops, in order to reduce phosphorus imports. This could be done by establishing minimum proportions of locally grown feed at farm- or regional scale (similar to rules for organic labelling).
- Allocate funding to implement measures such as buffer strips and sedimentation ponds, that reduce phosphorus escapes from crop land. To be effective, these measures must be adapted to local conditions. Within the Common Agricultural Policy, this could be achieved by reducing income support (Pillar I) and increase payments for public goods, for instance via the Rural Development Programme (Pillar II).
- Facilitate the development and trade of recycled fertilisers.
- Expand current zones that are deemed as environmentally sensitive or vulnerable to nutrient losses, to include livestock density limits.
- Limit livestock densities under the EU Industrial Emissions Directive.

Stockholms universitet

- All countries around the Baltic Sea should urgently comply with the EU Urban Waste Water Directive. The directive needs to be reviewed and sharpened.

Yours Sincerely

Tina Elfwing, Director of the Stockholm University Baltic Sea Center

Christoph Humborg, Professor at the Stockholm University Baltic Sea Center

Gun Rudquist, Head of Policy at the Stockholm University Baltic Sea Center