



ROADMAPS FOR THE FUTURE USE OF NUTRIENT OFFSETS

NutriTrade – Voluntary Nutrient Offsetting Scheme for the Baltic Sea

A Flagship project of the EU Strategy for the Baltic Sea Region



EUROPEAN UNION
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Development Fund



SUMMARY

One of the tasks of the NutriTrade project was to assess the benefits and possibilities of using nutrient trading as a tool in governmental policies around the Baltic Sea. This report presents the scenarios and the roadmap to realize these in the context of governmental water quality regulation. The key messages of the project regarding this can be summarized in the following three items 1) *Nutrient offsets as compensatory tools might bring substantial efficiency improvements to national regulation in all Baltic Sea countries* 2) *Introducing offsets into national regulatory environment requires active role from the governmental authorities and* 3) *Nutrient offsets on a voluntary basis could promote international actions and activities to protect the Baltic, if acknowledged by a sufficiently important entity, say HELCOM.*

First we succinctly introduce the topic. Background for utilizing flexible, market-based mechanisms are dealt with in more detail in other deliverables of the project (WP Institutional development). To facilitate usability of this report, we have avoided using references in the text. Interested readers are encouraged to download the other deliverables of the WP, which include extensive reference lists. Regarding Weser-ruling and the permitting processes, more thorough background information is provided in our Policy Brief No3 [<http://nutritradebaltic.eu/policy-brief-on-utilizing-nutrient-offsets-in-water-protection/>]. After the introduction, we go through the key messages of our policy analysis, with a special emphasis on item 1) and conclude by presenting a roadmap to promote item 3).

INTRODUCTION

The textbook version of emission trading leads to efficient allocation of abatement efforts without knowing polluters' abatement costs. Furthermore, total pollution level can be set to a pre-determined pollution cap that will not be exceeded. Theoretically, emission trading thus provides costs savings and guaranteed improvements in ambient environmental quality.

In practice, trading programs in, for instance, North America illustrate that the textbook-version of emission trading is not directly applicable for nutrient pollution. There are successful trading programs (e.g., for the Long Island Sound) but the ratio of inactive and active programs shows that the design fitting exactly the environmental, regulatory and economic characteristic of the region is challenging. Altogether, there are close to 40 trading programs in the U.S and come in Australia and New Zealand.

The outcome sought after with nutrient trading is that abatement efforts would be shifted from high cost to low cost polluters. Similar flexibility could be achieved by building in compensatory mechanisms into existing environmental regulatory tools. We recommend that the feasibility of such practices would be seriously evaluated in country-specific environmental permitting processes, particularly now that the EU court of justice has strengthened the legal status of the Water Framework Directive. On the other hand, we recommend promoting voluntary, Baltic Sea wide neutralizing of nutrient loading in addition to the BSAP abatement targets and national regulation.

Key concepts

In this report, we refer by the term nutrient trading to a non-voluntary regulatory instrument used as a tool in governmental environmental policies. The regulator sets a total cap on pollution, chooses a way to allocate pollution rights to regulated entities, defines the terms of trade (i.e. baseline and credit or cap and trade), chooses the market structure (bilateral, clearinghouse, exchange markets) and oversees the activities. If necessary, total pollution level is reduced by influencing the number of permits in the market. Nutrient trading can be seen as a standalone tool or as an additional part of existing policies. Nutrient credit is a verified unit of abatement below a given baseline that can be used for regulated units own compliance and/or exchanged in the markets. It is also the item that can be used in other mechanisms such as nutrient offsets. Nutrient offsets can be used in, for instance permitting processes. For instance, a permit applicant whose activity increases nutrient loading could provide and/or pay for abatement (additional to legal requirements) activities elsewhere which would generate nutrient credits. Nutrient offsets could thus be used as a tool to make sure that overall nutrient loading does not cross set thresholds, while allowing for more flexible permitting processes. Offsets could be used in voluntary nutrient abatement programs, both nationally and internationally.

Nutrient credits and offsetting

Nutrient offsets could enter the environmental permitting system as a way to reconcile economic activities and the Water Framework Directive according to the new Weser ruling. Environmental permitting is the backbone of environmental protection overall and nutrient pollution abatement in particular. In the Baltic, the substantial external load reductions of nitrogen and phosphorus can be traced to point source abatement for which the regulatory tool is mainly the environmental permit.

A permit authorizes existing and new entities to undertake their economic activities and sets maximum limits for different forms of pollution. Traditionally, permits have been based on certain industry and size specific performance standards and best available technologies. These standards have taken into account, for instance, the requirements set by various EU directives. A given technology allowed in one location would in principle be permitted in other locations as well (taking into account the site-specific legal constraints) as long as it meets the technological requirements.

This changed with the Weser ruling (C-461/13) of the European Court of Justice. The ruling strengthened the legal status of WFD-specific water quality standards. If an economic activity increases pollution that poses pressure on critical water quality elements, it cannot be granted an environmental permit.

This may create unintended constraints for economic activities. The basic problem is that it reinforces the differences of regulation towards point and non-point pollution sources. Suppose a new innovation would alleviate the pervasive and hard-to-tackle non-point pollution problem by transferring it into a substantially smaller amount of point source pollution. A strict interpretation of Weser ruling would prohibit adding any point-source activities into the watershed if the environmental targets are not met, even though this would reduce the total amount of pollution. As a concrete example, consider an agriculture area with substantial amount of animal husbandry. It is both theoretically postulated and empirically verified that manure nutrients over-accumulate in such regions because nutrients in feed come partly from outside but manure stays in the animal

production region. Feed has more value and gets thus transported longer distances. Nutrients accumulated in the soil, particularly phosphorus, leach to nearby waters accelerating eutrophication.

Surface water quality in such regions is often impaired (not meeting the good ecological status requirement of the WFD) due to eutrophication. According to Weser ruling, no economic activity that increases nutrient pollution may be permitted.

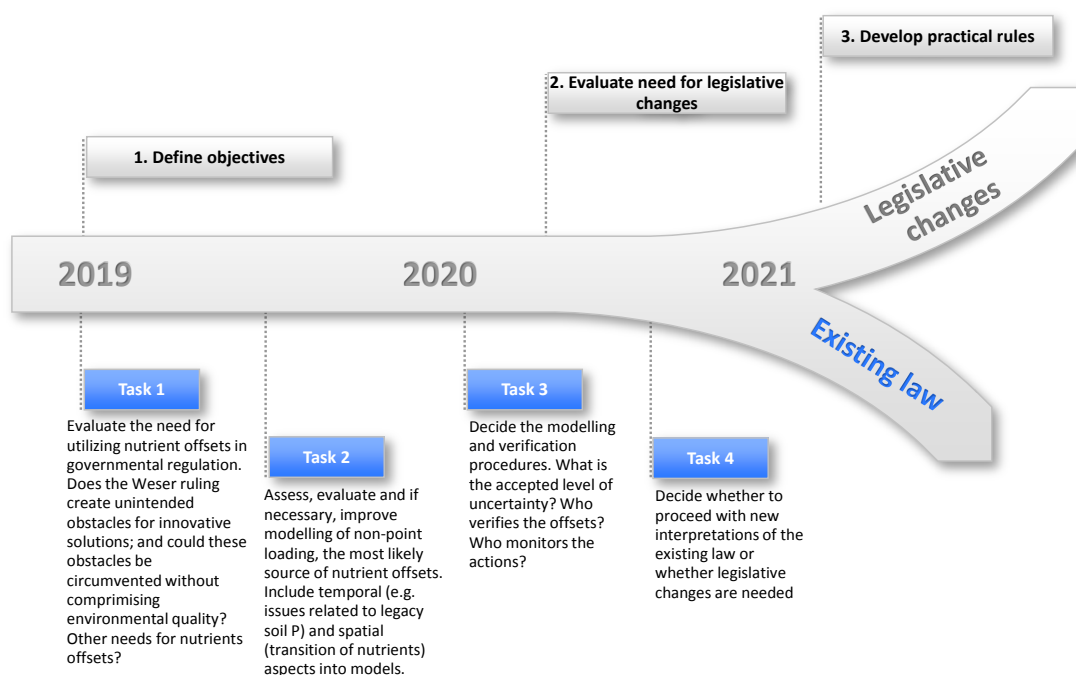
Now consider a potential manure management technology that would help stop the local accumulation of nutrients by making manure nutrients more valuable (lighter and more precise and reliable sources of nutrients for plants). Such a facility would reduce the total nutrient pollution to the environment but it would also inevitably generate some nutrient pollution by itself. It might be that following the Weser-ruling such a facility cannot be granted an environmental permit. Current legislation in Finland and Sweden (and Åland Islands) does not explicitly recognize the concept of net pollution loading or nutrient offsets.

Put simply: current legislation does not allow converting a high non-point pollution load into a low point-source pollution load. This is a serious constraint for water protection, particularly as animal agriculture is one of the most important sources of nutrient loading to the surface waters. The problem should be solved by providing a legal status for nutrient credits used for offsetting pollution from new or expanding facilities.

A nutrient offset can be generated by verifying, certifying and registering an additional nutrient reduction. An offset can be generated only by a measure that would not have otherwise taken place. That is, it must be additional. It also has to exceed the legal abatement requirements of the facility. In our example, nutrient abatement at the animal facilities fields should be modelled and verified in a way defined by regulatory authorities. These abatement units would generate credits for the manure treatment facility. They could be taken into account when identifying the net effect of the facility.

ROADMAP FOR NATIONAL POLICIES – NUTRIENT OFFSETTING

Environmental permits are at the core of environmental protection in all industrialized countries. The legislative and regulatory layers around permitting process are diverse. Making changes to these is therefore complicated and the procedures of doing so hard to foresee. Nevertheless, the roadmap will have three phases, depicted in figure below.



First, we need to define how the new situation (Weser ruling) affects environmentally effective and economically efficient permitting processes under the existing legal framework. Second, we have to make a choice: whether or not to change the legislation or to approach the new situation by drafting procedures utilizing case studies; and instructing permitting authorities for the new practices without actually making legislative changes. It is important to note that to make the choice, we need to anticipate the requirements of the third stage: the natural scientific modelling and practical procedure part. To assess whether legislative changes are needed, we need to understand whether we are going to allow for, say trading or credit exchange between legal entities; whether we are going to allow offsetting abatement activities to be undertaken in other watersheds, etc.

If explicit nutrient offsets are the chosen way forward, the regulator must determine how they will be utilized in practice. The key legal, administrative and economic challenges must be identified. Current permitting in Finland focuses on operator's emissions and not the specific quality standards. Nutrient offsets might be the tool to emulate new WFD interpretations and existing permitting actions.

While implementing the offsetting feature to environmental permitting, the key thing to ensure is that the water quality does not deteriorate. The mechanism has to lead to verified, additional abatement efforts and hence to water quality improvements.

Where are we at the moment? On its behalf, NutriTrade project has witnessed and perhaps even contributed to the first and third stages of the roadmap. At least two related continuation projects will assist all three phases of the roadmap: BlueAdapt and SeaBased. The information condensed to PolicyBrief 3 may help making the choices.

Below, a brief summary of existing legal frameworks and actions already undertaken in Finland, Sweden and Åland Islands. We urge the reader to resort to the Policy Brief for more detailed

background information, together with our ideas and recommendations.

Jurisdictions in Sweden and the Åland Islands do not mention nutrient offsets. They do open up for possibilities for compensating the impact of pollution upon applying a permit as long as all other mitigation measures are utilized first. An activity may earn an environmental permit by undertaking so-called 'compensatory measures'. Each permitting process is, however, to some extent always unique. There are thus no mechanistic rules of either granting or not granting a permit.

Quoting the Policy Brief *"In Sweden, an environmental permit may be coupled with an obligation to perform or pay for special measures to compensate for the activity's harmful impacts... Hitherto, compensation has mainly been required for biodiversity losses, and there are no applications to nutrient pollution... Swedish Government has put forward a government bill on amending national legislation due to the Weser ruling. ...The bill may create a growing need to utilise the nutrient offsets to neutralise the effects of an activity within a certain surface water body to earn a permit."*

"In Åland Island, an investigation on a new Water Act has proposed that a permit cannot be granted to an activity which jeopardises the WFD water quality standards. However, an operator may take measures that go beyond general environmental requirements or utilise compensatory measures to fulfill these standards. According to the proposal, compensatory measures may be produced by any physical or legal entity and then transferred to the operator."

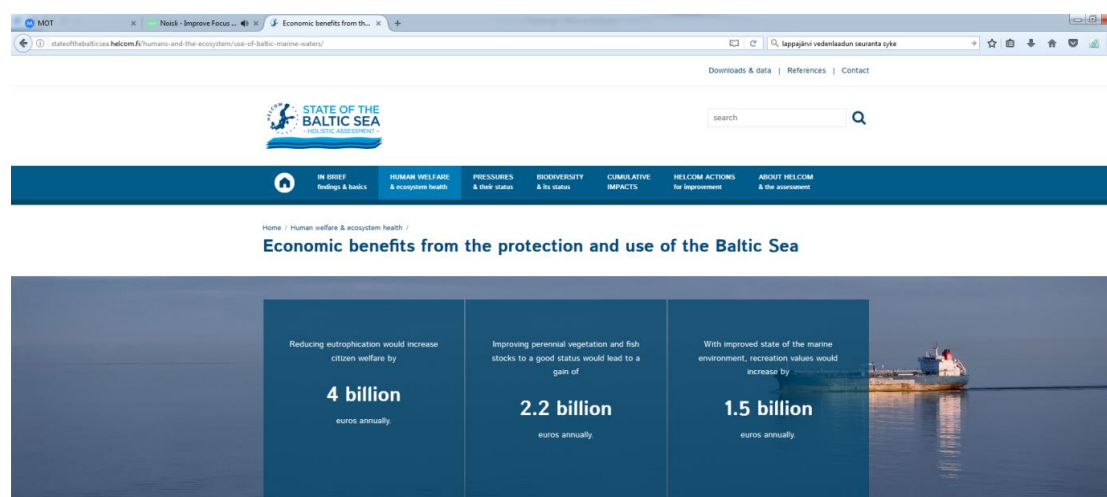
"Under the Finnish Environmental Protection Act (527/2014) and Water Act (587/2011), environmental permits are based on broadly prescribed legal thresholds which leave room for discretion by the permit authority. This room could be used to integrate measures related to nutrient offsets into permitting."

Overall, it must be emphasized that both the Water Framework Directive and its Weser interpretation leave room for the idea of compensatory mechanisms. Essentially, the environmental target defined in the river basin management plan and the associated maximum level of pollutants could be seen as a cap for total loading. As such, the WFD before Weser did not affect environmental permitting that strongly. The Weser ruling did not change the contents of the WFD but by strengthening the legal status of the targets, it prompted the idea of utilizing compensatory tools in the environmental permitting process.

ROADMAP FOR PROMOTING INTERNATIONAL BALTIC SEA PROTECTION WITH NUTRIENT OFFSETS

Even though the diverse legislative and institutional environment of the Baltic Sea countries makes establishing a cap-and-trade type of nutrient trading scheme prohibitively costly, voluntary nutrient offsetting could boost Baltic Sea protection. Such voluntary practices have gained traction in recent years. The Green care concept, for instance, tries to foster environmentally sound practices in the business sector without legally binding measures. The role of HELCOM as the central player of Baltic Sea protection is undisputable. We suggest that HELCOM considers taking a stronger role in facilitating abatement efforts of countries, cities and private companies that are done in other countries (e.g. by Swedish cities in Belarus or by Finnish cities in Russia). These abatement efforts would not be counted for BSAP abatement targets. However, they would be verified using some standards and given public appearance in, for instance, HELCOM web sites.

HELCOM itself has given a good example on the effectiveness of quantitative communication in environmental protection. Consider, for instance, the screen shot below depicting economic benefits of Baltic Sea protection:



With one glance the reader understands the main components of the economic welfare we derive from the Baltic, as well as the quantitative scope of these benefit items. Creating a similar appearance for abatement achievements additional for BSAP requirements might unleash healthy competition among rich countries, or cities and companies in these countries in working for the good of the Baltic. Who's doing more extra good: Finland in Russia or Sweden in Belarus?

In many international marine protection events there is healthy boasting around such topics. It would be a low risk-high potential thing for HELCOM to do.