



Workshop: Policy Instruments for Blue Mussels – How should they be Designed to Maximize the Environmental Benefits?

Erik Brockwell (SLU) and Katarina Elofsson (SLU)



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Workshop 9th February, 2018 at Kungliga Skogs- och Lantbruksakademien (KSLA), Stockholm



Summary:

On the 9th of February, Katarina Elofsson (SLU) recently organized and hosted a workshop at the KSLA (Kungliga Skogs- och Lantbruksakademien) in Stockholm. This workshop was organized within the framework of four EU-projects: NutriTrade, Baltic Blue Growth, BALTCOAST and OPTIMUS. Participants of the workshop included organizations from Sweden, Denmark and Finland within various municipalities, research institutes and academic institutions.

The focus of the workshop was to discuss how policy instruments for blue mussel cultivation and harvesting, as a means to reduce eutrophication of coastal waters, should be designed to maximize the environmental benefits. Furthermore, this workshop discussed how to promote high participation among mussel farmers and increase demand for mussels harvested.

Subjects covered from the presentations ranged a wide variety of issues, including measuring and overcoming uncertainties within mussel production, economic compensation and financing mechanisms for mussel farmers, enhanced dialogue and collaboration with industry and politicians as well as comparing the performance of mussel production against other abatement measures within the Baltic Sea. Focus was

also given for enhancing and defining legal frameworks for municipalities and learning how the Danish experience can be adapted for mussel farmers in the Baltic Proper.

Welcome and Introduction by Katarina Elofsson

All attendees we welcomed with various roles introduced. The agenda was presented with the main questions of the workshop being:

- How much can blue mussels contribute to water quality policies (nutrient removal and cost savings)?
- How large are the environmental gains from mussel production?
- What policy instruments should be used (e.g. investment/harvest support, tender processes, support to mussel feed buyers, etc.)? How should these instruments be designed?

There are also key uncertainties (i.e. from weather conditions, unexpected investment/operational costs and production uncertainties) and scattered information regarding mussel production.

Ing-Marie Gren (SLU): Economic value of uncertain nutrient abatement by mussel farming for mitigating eutrophication in the Baltic Sea

The key takeaway from this presentation is that nutrient abatement by mussel farmers is still a low-cost option and has a value for replacing more expensive measures if the marginal abatement costs, plus the costs of potential risk (i.e. variance of abatement) is lower than other measures.

It was raised during discussion that the level and measure of uncertainty is a major concern to the mussel industry and to researchers. Furthermore, potential losses in terms of tax revenue and employment should be considered further.

Rasmus Nielsen (Copenhagen University): Blue mussels as a compensation tool for nitrogen in Denmark

A continuing question is if policies of growth have hampered more needed environmental policy. Overall, enhanced framework conditions are important (i.e. clear regulation, spatial planning, faster administration and possibilities for trading quotas) to increase the size of aquaculture in Denmark.

New laws and development on compensation measures to increase farm size may also help these efforts. For areas that produce smaller sizes of mussels, expanding the uses for them (beyond animal feed) must also be developed. Concerns are also present over the use of drenches which are seen to be harmful for the environment in Northern Denmark.

Discussion:

A major issue is the lack of sources available (lack of data) as well as the differences in technical measures and the efficiency/size of mussel producers between different areas. A country-based perspective is needed, regarding various abatement measures, on where the cost would be the lowest relative to the highest possible output. Essentially, what is the most cost-effective level method or measure of abatement across each area where eutrophication is a major concern?

The participants suggested that what is needed are well designed natural science models on what would be the effects of mussel production on neighboring areas and the open sea. Also, participants would like to have a deeper analysis on what eutrophication problems are seen as the most pressing and severe as well as how different countries and local areas value corresponding measures. To do this, analysis of preferences as well as the level of public knowledge regarding these issues is needed.

Odd Lindahl (KVA, Mussel feed): Control means for increasing environmental benefits from mussel farming – valued from the viewpoint of the mussel industry

Here, a common environmental aid program is needed where we should equalize measures on combating eutrophication and calculate economic compensation in the same degree as what has been done in other agricultural sectors. Many in industry would like to see the development and promoting of trading for nutrient discharges. A major obstacle is that the authorization process is too difficult and must be simplified, more flexible and more supportive for the industry. This is complicated by land- and water-use conflicts where there is insufficient access to industrial areas and landings.

More of an effort should be made for future meetings in inviting and targeting our message to politicians to enhance their knowledge and interest in these issues. Future events in Söderköping as well as a meeting within the Swedish parliament on the 14th of February, 2018 (SWEMARC) will attempt to enhance dialogue with policymakers. A consistent issue is also the lack of knowledge from the public, where a negative view of mussel farming is observed. Previous efforts to educate the public have improved public outlook for mussel farming where continuous efforts are needed going further.

Susanna Minnhagen (Kalmar Kommun): Mussel farming from a local holistic perspective – can we profit from bad business?

It is stated that smaller mussel farmers would need to be part of a cooperative in order to be economically viable. Public-private partnerships may be a beneficial idea; however, legal frameworks need to be better defined where the municipality cannot operate on private markets. Municipalities are often uncertain on what they are allowed to and not allowed to do.

Furthermore, participants stated that we are not fully aware of the environmental effects of scaling up mussel farming on nutrient cycling in the sea, nutrient leaching and further impacts on neighboring areas. Efforts should also be made on how municipalities can better attract private sector support and investment regarding mussel farming.

Lena Tasse (Baltic Blue Growth): Initiating Full Scale Mussel Farming in the Baltic Sea

Issues raised are that no consensus has been reached regarding the environmental impact (i.e. from sedimentation, etc.) of mussel production. Further issues include the quality of mussels, high licensing costs and a lack of capacity for mussel producers (i.e. lack of experience and equipment with low-cost efficiency).

It is stated that, to improve mussel ecosystem services, more mussel producers should be attracted to the Baltic Sea area and better industry collaboration as well as financing mechanisms are needed. Better processes are needed for using mussels as feed. Further data collection is needed to support policy changes and resolve food safety issues. It is recommended that capacity building can be developed through bringing up fishery capacity from companies that have closed down in the south of Sweden who already possess better know-how.

Discussion:

A meeting has been organized on the 1st of March, 2018 in Malmö to find out what efforts in the Baltic can learn from Danish experience and what we can learn from their business models and their experience with Smart Farms. Mussel use for biogas has not been considered to be successful; however, more data is needed on how mussels can be used for soil improvement and fertilizer.

Ola Palm (RISE): Development of new technologies and public funding – challenges and possibilities

Ola discussed within the presentation that product, process, marketing and organizational innovation projects are important in order to tackle many of the challenges seen for mussel production in the Baltic Sea. Also discussed are the various funding methods that are potentially available for such projects as well as current experiences seen within RISE.

Questions were raised asking how many projects it would take to lead to a commercially viable innovation. Here, efforts depend on the right driving force, experience and synergy between all parties. There is a need to move from research to commercialization where innovation projects need better knowledge of the market and to set the right economic and legal framework. Further efforts are needed to motivate politicians and to better frame why current projects are important to national/local policymakers whilst reflecting the key issues of the current generation (e.g. climate change, ethics, transparency, etc.).

Anders Kiessling (SLU) and Annika Steele (Submariner): Post-harvest solutions and economic compensation, experiences gained in the Baltic Blue Growth project

Anders discussed within the presentation the potential and observed experiences of live larvae as natural food to poultry as well as using mussels as a substrate to insects and its potential to be both a soy and fish meal replacement (as a circular food production method). Annika presented experiences of establishing compensation schemes for mussel farmers as well as challenges faced in setting up this service.

One of the main issues raised is that there is greatly insufficient funding to reach environmental targets. Furthermore, current policy instruments have led to unnecessary costs where compensation schemes are largely underdeveloped. Many compensation schemes have failed because all stakeholders were not present from the beginning of the process. Here, compliance markets, where certificates of emissions can be traded between two parties, may be a realistic outlook for mussel markets and should be considered further. Overall, careful and precise communication is needed in order to communicate with EU and national funding agencies and governments.

Final Discussions and Conclusions:

What do we need to communicate further?

- We should pursue funding opportunities in rural areas – This can be done through targeting local policymakers.
- We should prioritize improving the water quality - Can be done through targeting national and local policymakers. This may be one of the easiest issues to communicate once we decide upon the scale needed and once we decide upon measures on how to develop implementation instruments.
- Increase fish farming – Can be done through scaling up with larger farms as well as the creation of new farms/pilot projects.
- Efforts should also be made on closing the nutrient loop.

How should this be done?

- Economic incentives – In particular, this should be focusing on cost efficiencies. This can be done through targeting public agencies in particular.
- We should decide upon what the largest uncertainties we face are and prioritize research accordingly. This applies to both the environmental and economic values.
- This can be achieved through a medium-sized experimental policy scheme, where one could learn about not only environmental effects but also responses and actions of mussel farmers and other affected stakeholders.