Baltic Marine Environment Protection Commission

HELCOM Fish Correspondence Group concerning a draft document on BAT/BEP descriptions for sustainable aquaculture in the Baltic Sea region (CG Aquaculture)

Online, 16 June 2021

CG AQUACULTURE 4-2021

Document title	Draft proposal on BAT/BEP on monitoring of aquaculture
Code	4-4
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Agenda Item	4 – Developing BAT/BEP under HELCOM Recommendation 37/3
Submission date	9.6.2021
Submitted by	Estonia

Background

This document contains a draft proposal on BAT/BEP on monitoring of aquaculture, including comments provided by Denmark.

Action requested

The Meeting is invited to:

- take note and discuss the draft proposal and the comments received on it, and
- decide on a way forward to finalize the work.

Proposal for BAT/BEP on monitoring of aquaculture

1. Background information

As a result of CG AQUACULTURE 2-2018 second meeting contracting parties welcomed Estonia to take the lead on matters related to monitoring of impacts from aquaculture operations. Hereby we propose BAT/BEP on monitoring of marine and land based aquaculture operations and initiate discussion regarding on monitoring.

This information has been compiled from a study conducted by the Estonian Ministry of the Environment. The aim of the study was to describe and identify current monitoring practise in aquaculture in the Baltic Sea region. More precisely, activities and permits for fish farming in Denmark, Estonia, Finland, Germany and Sweden for looked at and analysed in order to understand the ways how monitoring as such is carried out.

In addition, the final report by AquaBioTech Group and EUCC "Developing BAT/BEP with respect to pollution by nutrients and hazardous substances for sustainable aquaculture operations in the Baltic Sea region" was taken into account, especially the proposals and recommendations on monitoring. Therefore, the following takes into account and included also, to some extent, the proposals from that report.

2. General recommendations on monitoring

2.1. Monitoring should be carried out by setting up location specific monitoring program or requirements.

2.2. Principles and/or specific requirements for monitoring should take into account regional, national and, where relevant, EU legislation.

2.3. Monitoring that is to be carried out, should be based on a permit or other type of authorisation given by competent national authorities.

2.4. Where applicable, permits or authorizations should take into account also the results of environmental impact assessments done for planned aquaculture projects.

2.5. Monitoring of environmental impacts associated with all aquaculture production sites should be carried out regularly at appropriate intervals, not less than once in 6 years, in order to assess the environmental impact of the aquaculture.

2.6. Specific monitoring requirements should be reviewed regularly/from time to time, but not less than once within 3 year period.

2.7. When reviewing specific monitoring requirements, relevant changes in the environment should be considered for each aquaculture farm individually.

2.8. Monitoring should consist of measurements and/or visual observations taken from across transects running in the direction of the two most predominant flows and/or modelling activities or remote sensing where applicable.

2.9. When choosing appropriate methods for monitoring, data representativeness, data reliability and cost for acquiring the relevant data should be taken account.

2.10. Monitoring of aquaculture farms should take into account the peak production or the time when the impacts are expected to be greatest.

2.11. When collecting or compiling the data, negative or positive impacts from other sources should be avoided and/or excluded.

2.12. The collected data should be comparable with national water quality and impact assessment indicators, such as the ones in river basin management plans, marine strategy monitoring program or other relevant programs.

3. Recommendations for taking samples

Commented [A1]:
General comments to the proposal for BAT/ BEP monitoring for aquaculture.
Denmark would like to thank Estonia for the first proposal on this rather difficult task.
In this respect, the forthcoming revised proposal for monitoring must reflect clearly whether the proposal for BAT/BEP monitoring on aquaculture are considered recommendations or binding measures.
The diversity of the Danish fish farming production is large. Monitoring is very different on marine farms (large rainbow trout/Salmon), traditional pond farms with water intake from a stream (prim. small trout), large modern farms with cleaning facility's based on groundwater intake and large saltwater/freshwater RAS facilities that makes high value species as kingfish, eel, pikeperch and salmon.
As such, Denmark finds it difficult to evaluate the proposal for monitoring in regards to the different kinds of aquaculture production and herby possible consequences. The current proposal might fit one part of the sector, but definitely not all due to the diversity in aquaculture.
In light of the above-mentioned details, Denmark would like to take a general scrutiny reservation and hopes that a revised proposal can be drafted and further discussed at a later session.

Commented [A2]: Can you elaborate of which types of licences and produckti0n was taken into account from the different contrys?

Commented [A3]: Is this only for marine farming, not for freshwater farming?
Some of the parameters are nor relevant in fresh water.

Commented [A4]: Denmark has incorporated different strategies for monitoring specific sectors taking different approches.
Some are regulated by emission controle and BAT based on emissinon pr ton rainbow trout produced, others is based on specific farm possibility´s and others ar again met with sector demands.

Commented [A5]: Is that to be regarded at national regulation?

Commented [A6]: It is uncertain if the Danish supervision system at the moment can support this in order to acces the environmental impact

Commented [A7]: Could you elaborate on this?

Commented [A8]: As mentioned in the general comment it is difficult to comment on this taking into account the diversity of the sector.
In spite of this, the goal is to get the best data for the singel farm setting up the best possibel monitoring points.
Denmark can support this

Commented [A9]: The cost is always an issue. Especially monitoring om medicin and Chemicals. This is a problem

Commented [A10]: Add: - and any production free periods.

Commented [A11]: The idea is good but practically very difficult and in some cases very expensive (monitoring, sampling and tracking medicin and chemicals)

3.1. Water quality parameters should be measured at regular intervals and, where practicable, also continuously/automatically.
3.2. Exact sampling points/areas should be established in the permit or authorisation, taking into account the type of the aquaculture operation.
3.3. When aquaculture activity takes place in net cages, then water samples should be taken under cages, up-current and down-current from cages (preferably 25-50 m) and if need, at more distance places (100 m from cages down current, for instance to check the possible extent of the impact). Distances mentioned are indicative and should be adjusted depending on the characteristics of the location (current speed, water depth etc.).
3.4. Water quality samples should be collected at different depths, at the surface, intermediate and near the bottom if applicable.
3.5. Sampling points of specific parameters to be measured should take into account the extent of impact or the mixing zone.
3.6. Relevant parameters for water sampling should be at least for instance nitrogen compounds, phosphorus compounds, biochemical oxygen demand, suspended solids, dissolved oxygen, temperature, salinity, pH, conductivity, carbon content.
3.7. Sediment quality measurements near aquaculture monitoring sites should be conducted at least biannually coinciding with peak feeding. Visual observations could be conducted more frequently.
3.8. Relevant parameters for sediment quality sampling should be sulphide content, redox potential, nitrogen content, phosphorus content.
3.9. In case of marine aquaculture facilities impact on bottom habitats and species should be monitored and assessed in every 2-3 years.
3.10. If veterinary medicines, antifouling agents, cleaning and disinfection agents are used, relevant monitoring should be designed to assess the impacts of those activities on water quality and sediments.

4. Recommendations for recording

4.1. Where applicable data on water intake, stocking, feeding, nutrient losses, mortality, waste collection, veterinary medicines, antifouling, cleaning (including sludge removal), disinfection, harvesting should be recorded.
4.2. Records may be kept on paper or preferably in an electronic format.
4.3. Records have to be maintained for a certain period according to international standards or national legislation, but not less than for the period the permit or authorisation has been granted.
4.4. Record keeping systems should not be a duplicate from other system to avoid excessive administrative burden.
4.5. All collected non-confidential data should be made available for all relevant authorities.

5. Recommendations for supervision

5.1. Aquaculture monitoring and recording requirements should be described in relevant legislation and permits or authorisations should have a reference to relevant legislation or the requirements should be written down into the permit or authorisation.
5.2. Results of monitoring activities should be verified by national environmental inspection authorities.
5.3. Supervision activities by various national authorities should be coordinated to avoid unnecessary burden to aquaculture operators.
5.4. Aquaculture operators should report annually monitoring results, impacts and recorded data.

Commented [A12]: Must be „sediment samples". Probably analyses of water samples in most areas will not give any results.

Commented [A13]: This is unnecessary complicated. It is better to take the sample alongside the cage in the direction of the current. The dissolved nutrients will follow the water current, not be located under the cage.

Commented [A14]: These distances are not relevant for water samples, but for sediments.
For water samples the distances need to be depending on the local conditions. But a distance of 200 m up to 5 km might be applicable

Commented [A15]: Only if it is relevant. Due to dilution may be water sampling whont show anything depending on productionsize, stream, dept, water exchange etc. Modelling can predict if there schould be any expectably measurably change in the water quality in the water column.

Commented [A16R15]: I totally agree. Se also my next comment.

Commented [A17]: Sampeling like this in conection to singel polluter is almost impossible in the marine invironment. Emission during the day and current velocity will make tha data very questionable. Denmark does not take these kind of sampels

Commented [A18]: Only if relevant – se comments above

Commented [A19]: Many of these are not relevant in fresh waters or in hydropower magazines with low nutrient level.

Commented [A20]: All parameters mentioned are relevant – what about medicin/chemicals?

Commented [A21]: Frequency of measurement should reflect the production. If the production is seasonal sampling taking every year before production start can be recommended, because that can document any thane in the sediment over the years.

Commented [A22]: How is it proposed to evaluate the visual observation

Commented [A23]: The same coment as for water sampling. All of these are not relevant in fresh water.

Commented [A24]: Due to the proposition on specific details according to different types of farms this proposal is seen as a quit substantial burden. Requirements are usualy described in more broard terms in danish regulation.

Commented [A25]: What is ? national environmental inspection authorities.
Results of monitoring and the monitoring methods schold be accepted/verified by the relevant autorities.

Commented [A26]: Does this meen that the fishfarmer himself are to take the sampels and then have verified by national environmental inspection authorities. Usualy sampels are taken by 3. party