



Strengthening cross-regional DIH collaboration in aquaculture innovation support services (AquaHubs)

**Policy recommendations to policymakers
regarding aquaculture tech innovation support**

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1 Introduction

This document constitutes the outcome of Task 3.3. Policy recommendations for policymakers and stakeholders are part of WP3: Project outcome dissemination and replication. This document completes the milestone [M12]: Policy recommendations for national and regional policymakers and stakeholders prepared and disseminated

Based on the insights and experience gained about the needs, capacities and opportunities of aquaculture technology and innovation stakeholders, a set of policy guidelines were prepared and disseminated among national and regional policymakers and innovation ecosystems in the three countries of project partners. In this document, we first briefly explore the context of current aquaculture-related policy recommendations in each participating country of the AquaHubs project. Then, the new policy recommendations are prepared based on the experiences gained in the AquaHubs project.

2 Context of the current policy recommendations for aquaculture

The European Commission wants to help develop the EU aquaculture sector by:

- ensures the supply of nutritious, healthy and tasty food with a low environmental and climate footprint,
- creates economic opportunities and jobs, and
- becomes a global reference for sustainability and quality.

Its policy aims specifically to (European Commission 2021):

- building resilience and competitiveness
- ensuring the participation of the sector in the green transition
- ensuring social acceptance and consumer information on EU aquaculture activities and products
- increasing knowledge and innovation in the EU aquaculture sector

Nevertheless, the aquaculture sector is still far from reaching its full potential in terms of growth and meeting the increasing demand for more sustainable seafood. Out of these policy above objectives, following EC's pursuits resembled most closely the work conducted in the AquaHubs project:

- For ensuring social acceptance and information to the consumer, EC considered data and monitoring as essential topics:
"Collecting accurate data is necessary to ensure the appropriate planning

of aquaculture activities. Accurate data are also necessary to assess and monitor the EU's aquaculture sector's social, economic and environmental performance. Transparency and data reporting are also important for maintaining the trust of the consumer and other stakeholders in the sector. There are many reporting obligations on the sector under different EU and national legislation. However, the data collected are mostly socioeconomic data on marine aquaculture or animal health, and limited data are reported on environmental indicators specific to aquaculture. Therefore, it will be necessary to coordinate better reporting obligations and streamline reporting procedures between different services. It will also be necessary to provide more structured guidance to the EU Member States on how to obtain and report data. Data reporting should also apply to environmental indicators and cover aquaculture production beyond marine aquaculture.” (European Commission 2021)

- For increasing knowledge and innovation, European Commission (2021) stated the following:

Decisive action for aquaculture is required to ensure that research and innovation: (i) respond faster to the current and future challenges and opportunities of the sector; (ii) avoid duplication of efforts; and (iii) create synergies. In particular, further efforts are needed in the following areas:

- *Creating a framework for cooperation that brings together public authorities, industry, researchers, and educators at national and regional/local levels. This framework should include the development of innovation clusters for sustainable aquaculture.*
- *Fostering the development and matching of research and innovation strengths across the Member States and regions. This should include smart-specialisation strategies to build full value chains across the EU.*
- *Fostering effective dissemination of research and innovation results to industry end-users and the general public, as well as their exploitation, including by means of the close monitoring of the establishment and implementation of solid dissemination and exploitation plans of EU-funded projects.*
- *Promoting complementarity and synergies between research projects.*
- *Facilitating access to EU funds for research and innovation in the aquaculture sector, by providing a clear overview of the available EU*

funding.

In the remainder of this section, we will briefly explore how current aquaculture policy objectives have been planned to be achieved in the participating countries of the AquaHubs-project.

2.1 Lithuania

As a response to the EC's strategic guidelines, Lithuania (2021) summarizes its planned actions as follows:

Simplify administrative procedures:

- *An analysis of administrative burden on Lithuanian aquaculture revealed that administrative procedures are not a factor that is limiting sector development and competitiveness, and therefore they do not require additional simplification or action.*

Enhance competitiveness:

- *An increased competitiveness is planned by fostering the integration of fish processing facilities into aquaculture units, using newly developed processing technologies, and enabling the supply of new products to the market.*
- *Development of product marketing will be improved by supporting the promotion of both traditional and novel aquaculture products at international and local exhibitions, as well as using other advertising mechanisms.*
- *The plan proposes to focus on the production of species with high international demand, such as trout, sturgeon, catfish, tilapia and crustaceans alongside traditional pond aquaculture production.*
- *The environmental conditions and existing infrastructure for recirculating aquaculture system (RAS) development are favourable in almost all of Lithuania. It is foreseen to use best practices and to develop large-scale (1,000-1,500 tonne) RAS units.*

Coordinated spatial planning:

- *The current capacity of pond aquaculture is underexploited, a significant part of the pond area is not used and thus the further development of spatial planning for aquaculture is not a priority.*

Level playing field:

- *The creation of an aquaculture information service, enhancing the*

knowledge and practical skills of practitioners, and the sharing of best practices amongst the aquaculture sector.

- *Improved accessibility and dissemination of scientific, technological and market information and promoting the cooperation between managing authorities, scientific institutions, producer organization and other stakeholders.*

The Plan identifies a number of examples of best practise covering different species, production systems and scales, including:

- *Sustainability: 52% of total pond area and 33% of total production is certified as organic.*
- *Organization and management: More than 95% of total production is produced by enterprises belonging to national producer organizations.*

2.2 Finland

As a response to the EC's strategic guidelines, Finland (2021) seeks to:

Simplify administrative procedures:

- *Review the permit processes in cooperation with the administration and stakeholders. The objective is to lighten the administrative burden caused by the environmental permit system and related procedures. The permit system will be developed to be straightforward yet not compromise the level of environmental protection provided.*

Coordinated spatial planning:

- *Finland has adopted an aquaculture spatial plan that identifies the most suitable and productive areas for aquaculture production in marine areas. This plan will be integrated into the national marine spatial plan, and will be supported by the permitting system.*
- *Environmental monitoring obligations: For the water quality monitoring, the aim is to find the most appropriate methods for investigating and assessing the environmental impacts of fish farming.*

Enhance competitiveness:

- *A multiannual innovation and development programme is being promoted to support the growth of sustainable aquaculture, which will be put into practice following the principles of learning and network-based development.*

- *Construction of a network of technical expertise and innovation in aquaculture, within which the sector can develop to a high international standard, facilitated by multi-stakeholder cooperation.*
- *Aim to develop strong Public Private Partnership (PPP) –models and platforms to research and industry.*

Level playing field:

- *The plan recognises a need for better communication to the public about the sector’s responsibilities to ensure environmental sustainability and its important contribution to achieving nutrient reduction targets set for the Baltic Sea.*
- *Voluntary certification of responsible production methods.*

Best practices:

- *Continuous dialog; between industry, environmental NGO’s, research and administration in order to reconcile environmental and industrial policies.*

2.3 Croatia

As a response to the EC’s strategic guidelines, Croatia (2021) summarizes its planned actions as follows:

Simplify administrative procedures

- *The analysis showed a high rate of successful resolution of requests for the issuance of benefits as a result of efforts to vertically and horizontally connect and harmonize administrative bodies and procedures that precede the procedure within the Ministry of Agriculture-Fisheries Administration. It is estimated that the average duration of the procedure for obtaining the concession for marine farming in Croatia does not represent a significant administrative burden, and is within acceptable timeframes.*

Securing sustainable development and growth of aquaculture through coordinated spatial planning

- *Croatia will continue to apply the proven good practice in the field of marine farming planning with the aim of applying the same practice in all local self-government units. In order to achieve equal results in the field of freshwater breeding planning, the Republic of Croatia will*

determine the criteria for locating this activity in space. It is not possible to predict the number and quantity of new aquaculture areas, nor the number of spatial plans. However, potential areas for freshwater aquaculture are expected to be included in the spatial planning documentation, which will greatly facilitate the process of opening new farms.

Enhancing the competitiveness of EU aquaculture

- There is a possibility of financing development and innovation projects through the instruments of the new Common Fisheries Policy*
- The opportunity is provided by the establishment of continuous and organized information and education of businessmen and regional and local self-government through better organization of competent institutions for the establishment of the CFP*
- Networks of educational institutions within the Republic of Croatia will be established as with institutions within the EU with the aim of establishing robust and complete educational programs*
- It is necessary to apply breeding technologies that will ensure the sustainability of aquaculture that provides environmental and nature protection services NATURA 2000 within the area, as well as technologies that reduce water consumption and / or have less organic load on watercourses, and implement measures to reduce the possibility of escape in breeding*
- In terms of technologies and forms of cultivation that contribute to the protection of nature and the environment, further opportunities for the development of freshwater aquaculture are possible through the establishment of a recirculation breeding system (RAS) and the development of organic and organic farming. The main reasons for the development of such systems are: energy conservation, reduced water consumption, reduced land use, and the possibility of creating various optimal characteristics in the breeding area, which shortens the breeding cycle and emphasises the possibility of using non-specific sites.*

Promoting a level playing field for EU operators by exploiting their competitive advantages

- The problem is the fact that there are no registered organisations of producers in mariculture nor well-established ways of communicating with consumers to inform the public about the benefits of mariculture products and improve the perception and acceptance of these products by consumers.*

- *The results of research, studies and scientific works mainly boil down to the fact that public perception of aquaculture depends on the level of public awareness of this activity and that to improve the public image of aquaculture, it is necessary to ensure active action of the same industry in synergy with national, regional and local administration that supports and monitors its development.*
- *An essential tool in this process is undoubtedly the development of product labelling and certification systems as well as the production of information materials on products and the aquaculture activity itself.*
- *Considering the research results, it is clear that it is necessary to carry out information and marketing activities on the domestic market to increase the consumption of products originating from breeding.*

Best practices

- *1) Determining the location for offshore farming based on ICZM*
- *2) Procedures for assessing the impact of offshore farming interventions on the environment and nature*
- *3) The entire procedure for issuing a concession for breeding at sea, including all actions that precede the issuance of the concession itself*

3 Policy recommendations were prepared in the AquaHubs -project

3.1 Promote availability and transparency of aquaculture data

Although European Commission already recognises collecting accurate data as necessary to ensure the appropriate planning of aquaculture activities, there are still significant shortcomings in gathering, analysing and sharing aquaculture-related data. As one example of such shortcomings, the Finnish IE revealed that:

- there is room for improvement in using digital technologies in gathering data
- data is currently scattered across many systems with an insufficient level of interoperability and data sharing

Hence, we propose actions to be taken toward sharing aquaculture-related data and making it publicly available. The more data is available, the more opportunities emerge for improving aquaculture-related services. As many stakeholders provide and utilise such data, ecosystem-related services need to be strengthened to support data sharing in the aquaculture community.

3.2 Support Innovation Experiments

Positive experiences from the AquaHubs project suggest that Innovation Experiments are a natural way to accelerate the use of digital technologies in the aquaculture sector and to increase collaboration on a regional, national and international level. These activities need to be strengthened even further by creating more funding opportunities.

3.3 Increase communication within the aquaculture network

Aquaculture stakeholder networks are complex and fragmented. This challenge could be alleviated by focusing on systematic communication to disseminate information more effectively and commit all stakeholders to common goals.

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