AdriAquaNet

Enhancing Innovation and Sustainability in Adriatic Aquaculture

Deliverable 2.2.8. RECOMMENDATION

Udine and Trieste, 30.06.2022

PART 1

Project number:	**10045161**
Project Acronym:	**AdriAquaNet**
Project Title:	**Enhancing Innovation and Sustainability in Adriatic Aquaculture**
Start of the project:	**01.01.2019**
Duration:	**42 months**
WP/activity:	**2.2**
Deliverable name:	**Recommendations**
WP leader:	**PP2**
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Delivery date:	**30.06.2022**
Status:	**Final**

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Introduction

This document presents a series of recommendations for enhancing the sustainability of Adriatic aquaculture.

The target groups of these recommendations are:

Policy makers at all levels of government

The seamless adoption of these innovations and any other necessary improvement, refinement and further development need to be supported by the public policy makers at all levels of government, in order to design and implement actions that ensure favorable conditions of cooperation between relevant actors of the innovation endeavor, such as the R&I sector (Research and higher education institutions) and the users (SMEs) at both sides of the Adriatic Sea basin.

SMEs and professionals active in the aquaculture value chain

They may find it useful to know what technologies are available and who are the reference persons who can support them in implementing these innovations.

Researchers and scientists addressing manyfold issues of aquaculture sustainability by a multi-disciplinary approach

They may find it useful to understand what are the most urgent innovation needs of the aquaculture business, in order to transfer knowledge and ideas from their scientific domains to the applied sciences.

A. European policy framework

This document reflects the collective effort of the AdriAquaNet project partnership to tackle concrete issues relevant for the aquaculture value chain, in line with the Common Fisheries Policy (CFP). It is clear that the AdriAquaNet objectives perfectly overlap with those of CFP, which are to increase productivity, to stabilise the markets, to provide a source of healthy food and to ensure reasonable prices for consumers.

PART 2

Recommendations for Aquaculture in the Adriatic Sea

Aquaculture is one of the most complex activities in agriculture, involving hundreds of fish species, numerous technologies and infrastructures, diverse environments, and subject to complex regulations that often cover very different areas.

The development of aquaculture in the Adriatic will increasingly have to follow the principles of environmental, social and economic sustainability, which on the one hand must ensure the responsible use of natural resources and the minimization of environmental impact, and on the other hand must be technologically appropriate, economically viable and socially acceptable.

The recent EU Commission document (COM / 2021/236 final "Strategic guidelines for a more sustainable and competitive EU aquaculture in the period 2021 - 2030"), which contains the strategic guidelines for EU aquaculture, indicates that the development of European EU aquaculture: (i) be competitive and resilient; (ii) ensure the supply of healthy and nutritious food; (iii) reduce the EU's dependence on fish imports; (iv) create economic opportunities and jobs; (v) aim to improve animal health and welfare; and (vi) become a global reference in sustainability.

European production is insufficient to meet the demand for fishery products, and competition from third-country aquaculture producers is increasing, partly because there is not an adequate level playing field, both in terms of regulations governing the production chain and market policy.

The current scenario must take into account the changes triggered by the health crisis caused by the pandemic COVID -19 and exacerbated by the impact of the conflict in Ukraine, which have led to a surge in production costs, especially in the areas of energy, fish feed and logistics. The economic situation, worsened by the effects of climate change (exceptional weather events, prolonged drought, ...), has severely affected the sector and increased the average production costs of the sector by more than 50%, with the cost of some production factors more than doubling and reaching unsustainable levels.

Other challenges facing European aquaculture, in addition to the aforementioned effects of climate change and the increasing intensity of competition, are the clear and unambiguous planning of areas for aquaculture (definition of allocated areas for aquaculture), in order to ensure both an ever greater circulation of natural resources and food safety in the broadest sense as the hygienic safety of products (food safety) and the food supply security. The fish farming activity requires a production planning of many months and in some cases years: in the latter period the schedule is in many cases skipped and it will take much too long to return to a so-called normality.

Croatia, Italy and the European Union need fishery products, but in order to achieve this, it is necessary that production, management and all other stakeholders that revolve around the world of aquaculture dialog and work together.

Actions and strategies need to be promoted and supported to make businesses competitive and to promote the consumption of EU aquaculture products: assess current capacity and potential, promote fish supply chain restructuring, optimize costs through innovation, research and also economic support, and most importantly, ensure the competitiveness of European fish products through new and effective market strategies.

In terms of socio-economic sustainability, the protection of micro, small and medium enterprises, which are strongly integrated into the local communities of inland and coastal areas and form the basis of the production structure of aquaculture in the countries bordering the Adriatic Sea, is of great importance. In this sense, we reiterate the importance of the involvement and active participation (at EU, national and regional/local levels) of the professional associations in the planning, discussion and application of the rules applicable to the sector, including the regulations for the specific structural funds, such as the European Maritime, Fisheries and Aquaculture Fund (EMFAF).

To ensure much better communication and promotion of aquaculture, it is necessary to inform and educate consumers (e.g., through labeling in food service), support the use of aquaculture products in mass catering (canteens, schools, nursing homes, hospitals), and achieve ever greater social acceptance of aquaculture with clear and accurate information. In order to improve knowledge and innovation in aquaculture, research needs to be more closely linked to production activities to solve the critical issues and bottlenecks related to sustainability, but also to performance, in order to ensure products with a low environmental footprint that are at the same time competitive and able to satisfy the growing demand for fish products.

Regarding the last aspect, it is important that aquaculture producers and other actors in the fish supply chain meet the new needs of consumers who are looking for special products for children and young people, fish burgers, but also niche products (carpaccio, smoked products, caviar) with longer shelf life and modern, appealing and environmentally friendly packaging.

Finally, we must not forget the lessons and changes triggered by the health crisis caused first by the pandemic COVID -19 and then exacerbated by the economic consequences of (not only) the conflict in Ukraine. The use of specifically allocated resources (EMFAF) is essential to restart, but at the same time it is necessary that all the strategies proposed by the European Commission (Green Deal, Farm to Fork, Biodiversity) are recalibrated based on the changed socio-economic frame of reference, otherwise the development of aquaculture would be thwarted and its survival seriously challenged.

A. CONTRIBUTION TO EUSAIR

This document reflects the collective effort of the AdriAquaNet project partnership to tackle concrete issues relevant for the aquaculture value chain, in line with the EUSAIR pillar of Blue Growth. To contribute to this pillar, AdriAquaNet has progressively achieved the EUSAIR objectives 1 and 2, such as "*To promote research, innovation and business opportunities in blue economy sectors, by facilitating the brain circulation between research and business communities and increasing their networking and clustering capacity*" and *"To adapt to sustainable seafood production and consumption, by developing common standards and approaches for strengthening these two sectors and providing a level playing field in the macro-region"*.

B. CONTRIBUTION TO HORIZONTAL PRINCIPLES

Please provide a description of the project contribution to the horizontal principles of equality between men and women, non-discrimination and sustainable development.

The project engaged technical and administrative staff based on personal characteristics, complying with the equal opportunities and without discriminations, such as gender, race, nationality, ethnic origin, religion or belief, disability, age or sexual orientation. The employment relationship was based on the principle of equal opportunity and fair treatment, including type of contract, wages and benefits, working conditions and terms of employment, access to training, promotion, and termination of employment as for any other Italian or Croatian staff hired. The staff and external services involved were formed without any kind if discriminations based on personal characteristics, genre, age, belief, race, nationality, ethnic, religion and belief, sexual orientation, etc.

C. COMMUNICATION ACTIVITIES

Please refer to the Final Communication Report template and provide a summary on the main achievements trying also to identify which were the most successful communication tools in reaching general public/decision makers/other target groups.

This document is available on the project's website, section Docs&Tools, WP2 - COMMUNICATION AND DISSEMINATION.

D. **NATURA 2000**

Please describe, if it is the case, measures foreseen and implemented by the project:

a) In case the project involved Natura 2000 sites, describe what measure the project envisaged and implemented to avoid any negative impact:

No Natura 2000 sites are included in the areas where the project activities have been carried out; therefore, no measures have been envisaged and implemented during the project in order to avoid negative impacts.

b) In case the project had a positive effect on Natura 2000 sites, please describe which measure the project has foreseen and implemented in order to reach a direct or indirect positive impact: No Natura 2000 sites are included in the areas where the project activities have been carried out; therefore, no measures have been envisaged and implemented during the project in order to avoid negative impacts.

E. TYPES OF ACTIONS ADDRESSED (as defined in the Cooperation Programme)

These are our primary objective's types of actions, that we addressed by the Project:

Specific Objectives	***Types of action***	***the most relevant one within the SO addressed by your project***
1.1 Enhance the framework conditions for innovation in the relevant sectors of the blue economy within the cooperation area	*Joint projects and actions aimed at creating platforms, networks and at supporting exchange of good practices in order to enhance the knowledge transfer and capitalization of achieved results in the field of blue economy*	***X***
	Actions aimed at cluster cooperation, joint pilot initiatives in order to boost the creation of marketable innovative processes and products, in the field of blue economy	***X***

F. TYPES OF OUTPUTS PRODUCED

Specify the types of outputs generated by your activity that are reported here and provide a brief description

Output typology	Description
Trainings	N.A.
Monitoring systems	N.A.
SMEs clusters	N.A.
New networks	N.A.
Platforms	N.A.
Adaptation plan	N.A.
Building renovation	N.A.
Others (please specify)	Opinion paper

G. TYPOLOGY OF IMPACTS

Please indicate what type of impact(s) your project has had. You can choose more than one answer. For each tangible impact selected, please provide a concrete example from your project, where possible supported by quantitative information.

TANGIBLE IMPACTS

Tangible impacts	**Example/ quantitative information**
Improved access to services	N.A.
Cost savings	N.A.
Time savings	N.A.
Reduced energy consumption	See Deliverables 3.2.1 and 3.2.2
Reduced environmental impact	See Deliverable 3.1.1 and 3.1.2 See Deliverables 3.2.3
(Man-made, natural) risk reduction	N.A.
Business development	See Deliverables 5.3.1 and 5.3.2
Job creation	
Improved competitiveness	See Deliverables 5.1.1 and 5.1.2., See Deliverables 5.2.1, 5.2.2 and 5.2.3
Other tangible impacts (specify)	N.A.

INTANGIBLE IMPACTS

Intangible impacts	**Example/quantitative information**
Building institutional capacity	Increased research capacity of institution, networking and increased possibilities for future cross-border collaboration

Raising awareness	The project has stimulated the attention of fish farmers and producers regarding the wide opportunities of adopting innovations in order to promote competitiveness and sustainability (see deliverables 3.3.1, 4.4.1 and 5.4.1, all on knowledge transfer to the business sector).
Changing attitudes and behaviour	Closing the gap between research and industry, by knowledge and technology transfer.
Influencing policies	The communication activities have engaged and informed policy makers (see Deliverable 2.4.3).
Improving social cohesion	N.A.
Leveraging synergies	The project led to the strengthening of relations between Italian and Croatian research groups, as well as between universities or centres of excellence and fish farmers. This collaboration may be exploited in the future for the drafting and implementation of new research projects aimed at improving aquaculture farming systems and waste/energy management in fish farms.