

CASE STUDY : MUSSELS

Working document

Context/Background

Mussel farming is a well-established aquaculture sector in some European countries, but has registered a downward production trend since the beginning of the 2000's while it is still expanding in other parts of the world (esp. in Asian countries, Chile, New-Zealand). The volume share of European production progressively decreased from 43% to 26% over the 2000-2014 period; in the meantime the share of new comers like Chile rose substantially from 2% up to 13% (FAO Fishstat). Although different factors on the supply side may hamper recovery and further development of the European mussel farming in the future, on the demand side the outlooks of growth remain high. Actually, this type of production is well positioned to meet the increasing consumer demand for low price, affordable fresh seafood, and also to fit with the social demand for low-input and more labour intensive aquaculture, contributing significantly to employment in coastal areas.

One of the challenges facing the mussel farming sector is to reduce the factors of profitability decrease due to environmental concerns, water quality degradation and/or unsustainable techniques/cultural practices. This can be partly achieved thanks to technological adaptation, to the implementation of better cultural practices or to the creation of new production sites, with the aim of recovering productivity, upgrading quality and reducing exposure to mortality risks. Another challenge is to keep competitive while consolidating the market power of producers within the value chain, relying on more efficient regulation and production systems, sales organisation or valorisation approaches (certification, quality and geographical origin labels, ecolabelling...).

Case study mussels :

The "Salmonids" case study is part of the SUCCESS project, funded by the EU. The following partners are involved in this case study:

- IFREMER (France)
- UBO (France)
- University of Cantabria (Spain)
- ATEITH (Greece)



SUCCESS is a H2020 Research and Innovation Project (2015-2018)

Bottlenecks

The different bottlenecks for the European mussel farming which have been identified at the beginning of the SUCCESS project differ according to the country partners:

- The Netherlands: lack of availability of seeds and related high costs for mussel farmers, low productivity of some farming sites, storms and other climatic events
- Germany: low availability of seeds (partly due to regulatory constraints), climatic factors (storms...), competition with other users for limited space in the Wadden Sea
- France: environmental factors in a broad sense (water quality degradation, epizootic events, mussel competitors and predators...), conflict uses, difficult access to new areas for mussel farming (especially off-shore)
- Italy: insufficient allocation of dedicated areas for mussel farming in general and of safe areas for breeding, unsuitable EU regulation related to organic farming, scattering of mussel producers and lack of representative associations
- Greece: various bottlenecks linked to the current farming techniques and management of production, lack of scientific support for the identification of suitable areas for mussel aquaculture, environmental and climatic factors (i.e. red tides), low price of mussels at the farming stage
- Spain: environmental and climatic factors (red tides...), allocation system of rafts (closed), fragmentation of the production sector and related asymmetry in negotiating power with owners of depuration facilities, increasing competitiveness from Chilean mussel imports (as concerns canning industry outlets).

From this preliminary overview, the main bottlenecks appear to be of “**environmental**” nature as well as of **regulatory** nature (access to seed, access to new farming sites, EU organic labelling requirements...). Insufficient economic valorisation of mussels (due to insufficient negotiating power or other factors) at the production stage could also be considered as a bottleneck in some countries.

Links between Mussel CS and WPs

Consolidating the sustainability and economic competitiveness of the European mussel industry would require addressing a variety of issues and exploring technical/organisational / valorisation/ initiatives or innovations which can fulfil this objective. This will preliminarily rely on descriptive tasks to provide knowledge on the structure of the mussel farming sectors and on the organisation of related value chains. The contribution of the different country partners is expected to provide a basis for comparative assessment (especially for task3.1, task3.2, task3.3a and task4.1). Beyond, further investigation on “room for competitiveness improvement” (task 3.3) and “price transmission analysis” (task4.2) will probably be carried out by fewer partners, depending on data availability and level of involvement in mussel CS.

WP 1: *Effects of global drivers, policies and regulations on growth, jobs and innovation in European fisheries and aquaculture sectors.*

Although global drivers are investigated mainly independently to case studies in WP1, the implication of Mussel CS could provide more specific elements on aquaculture supply and trade analysis (Task 1.1). In this aim, the CS will focus on the analysis of the evolution of European mussel production, external trade, and global demand, in order to provide an overview of the current state of competitiveness on mussel markets (at intra and extra-EU levels) and future outlooks. This input will be required for the analysis of the challenges facing the mussel farming industry (**link with task3.2**) and for the trade and value chain analysis (**link with task4.2**).

WP 2: *Consumer preferences, market acceptance and social awareness towards seafood.*

In parallel to WP2 subtasks (independent of case studies), the mussel CS will pay attention to the analysis of the European consumption of mussels. Consumption modes and habits, consumer expectations concerning new products, labelling and certification schemes will be described mainly from a literature review. Where panel consumer data are available, the factors determining the consumption of fresh or processed mussels will be scrutinised, as well as the breakdown of distribution channels. This input will also be required for the analysis of the challenges facing the mussel farming industry (**link with task3.2**) and for the trade and value chain analysis (**link with WP4**).

WP3: *Competitiveness and sustainability of European fisheries and aquaculture sectors*

Task3.1. The description of the regulation systems in mussel farming covers both the European framework for sanitary and environmental rules and specific national legislations as regards the allocation regime of concessions or licenses and the implementation of management measures. The CS will examine how this regulatory context could have impacted the structure of mussel farming sectors and the organisation of first hand sales, and how it may influence the economic sustainability of mussel farming in the different participant countries (all partners).

Task3.2. The characterisation of production systems in the different participant countries is another step which will contribute to the assessment of aquaculture primary sectors competitiveness (task3.4). To achieve this objective, the mussel CS will provide data on the structure of mussel farming production, enterprises and employment and information about first sales organisation in the different partner countries (link with task4.1). This description of the mussel farming sectors, completed by a short analysis of the main trends occurred during the last 10-15 years on the supply and demand side will help identifying the main issues at stake for mussel farming by country (all partners).

Task3.3. Mussel CS will explore different ways for improving the competitiveness of mussel farmers.

In a first step, an inventory of recent and relevant initiatives/innovations aiming at improving competitiveness in mussel farming will be carried out (all partners involved). This subtask (3.3a) will cover different categories of initiatives or innovations, as for example:

- New products, new production techniques, species diversification
- Management systems/tools for improving productivity
- Organisational/institutional innovations
- Quality labels, ecolabels, PGI (protected geographical indication)...
- Alternative valorisation strategies, e.g. short distribution channels...

In a second step, some partners will be further involved by focusing on specific initiatives (3.3b). As regards mussel farming, different subcases for the analysis of **"room for improvement"** have been considered (but still need to be confirmed for some partners):

- Greece, ATEITH: Development of new products (unvalved mussels with extended lifespan) for targeting both traditional markets in consuming areas (i.e. Thessaloniki) and other areas with high potential due to tourism (i.e. Crete). Short experiment and taste tests will be conducted in order to develop a product with better/extended life span and taste (links with WP2?).
- Greece, ATEITH: Development of a management tool (MMT) for mussel aquaculture in Greece in response to quality degradation (decrease in mussel meat weight). This tool is expected to improve management efficiency and compliance for the mussel aquaculture in Greece.
- **Italy, NISEA: Focus on the setting up of PDO /organic labelling for mussel? To be confirmed**
- France, IFREMER: Valorisation of quality and environmental attributes of mussel production in the Norman-Breton Gulf through voluntary labelling approach (PDO, organic label) and through regulatory tools (the "structural schemes" for shellfish farming which set up the farming and management rules for ensuring best farming practices).

- **Spain, UC: Focus on the improvement of producers' incomes (e.g. increasing their negotiating power towards "depurators" by settling up their own depuration facilities -individual or cooperative-, shortening distribution channels...). To be confirmed**

Although the "rooms for improvement" are not yet totally defined at this stage, different fields of interest are emerging. The issues to be addressed are related either to the efficiency of farming regulation/management systems or to the protection and valorisation of European mussel productions in their diversity of production modes and geographical origins. This preliminary list is however likely to evolve in order to address more market or value chain-oriented issues from WP4 outcomes.

Task3.4. Other key outcomes of this CS will be the assessment of the economic competitiveness and sustainability of the European mussel farming industry, through a set of quantitative and qualitative indicators, according to a multi-criteria approach. This assessment will be the continuation of the work initiated in task3.2. It is expected to valorise existing structural and economic data (from national surveys, European DCF...), and to broaden the economic assessment to other types of indicators, to be defined on a collective way within WP3. Although this assessment is mainly primary sector-oriented, it also refers to the level of valorisation on domestic or export markets and to the organisation and level of integration within the value chain (**link with WP4**).

WP 4: Trade and Value Chain

The involvement of Mussel CS contributors to WP4 needs to be further documented.

Task4.1. Description of the seafood value chain.

The Mussel CS will provide a description of the value chains for each country participants. The description will be more or less detailed according to the level of involvement of the partners but should at least presents one or several diagrams (with some figures) for explaining the organisation of the value chain and reviewing the different agents and operators participating to the Mussel VC at national level. Further analysis would rely on the identification and understanding of the potential causes of bottlenecks and conflicts in the distribution of incomes and transmission of values along the value chain.

Task 4.2. Analysis of price transmission and market power.

Quantitative analysis to go further in the assessment of the economic sustainability of the value chain necessitates providing monthly data series in different countries.

- Horizontal integration (to test the existence of one or different markets): Values-quantities of imports-exports and retail prices of different species/commodities
- Vertical integration (to test market power): Values-quantities or prices (imports, ex-farm, wholesale, retail & exports) of different species/commodities

The CS will contribute to these analyses by providing the needed data, subject to their availability. A preliminary review about available data shows that ex-farm monthly data are often missing for mussels (as in France, Italy, Greece). At the other side of the value-chain the access to retail data (in quantities and prices) might be restrictive too (retail data not available in Italy, Greece...).

Task 4.3 & Task4.4.

To be completed by partners (especially Spain, France, Italy, Greece)

- France: The list of mussel producers under PDO *Baie du Mont St Michel* might be provided, but very few (if any) enterprises are present in the Amadeus database
- Greece : "I doubt that there is more than 2-3 Greek mussel aquaculture companies in the Amadeus database"
- **Other partners?**

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