

## The organic aquaculture sector in Italy: a Delphi evaluation of the market potentialities

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### Abstract

*The paper draws out the possibilities of development and increase of organic farmed fish in Italy, evaluating both technical and economic aspects, for breeding, market, political, regulatory and environmental issues. The survey has been conducted using a well-known foresight methodology, the Delphi technique, with a panel of national experts. The analysis offers interesting insights and useful suggestions addressed to the organic aquaculture sector. Authors chose Delphi methodology according to the paper's objective: the study is in fact aimed at exploring the evolution dynamics (positive or absent) for a less-developed market like the one of the Italian organic fish. This method allows to create a forecast by collecting and evaluating experts' opinions about the organic fish market; these experts are divided in homogeneous groups and selected as privileged observers of the phenomenon. Expert panel suggestions are worthy of consideration as a contribution to improve and to subsidize organic aquaculture, that may be further sustained by scientific research and technologic innovation.*

### Introduction

It is a relatively common and shared opinion that aquaculture will have an important role in satisfying a steadily increasing demand of fish, since quantities potentially caught in the wild have nearly reached their absolute limit. Aquaculture seems therefore to promise abundant resources for the production of food and may also play a key role in reducing the current exceeding pressure on overburdened wild fisheries.

The paper draws out the possibilities of development and increase of organic farmed fish in Italy, evaluating both technical and economic aspects, for breeding, market, political, regulatory and environmental issues. The survey has been conducted using a foresight methodology as the Delphi technique, in three rounds with a panel of national experts.

### Material and methods

The Delphi method has an exploratory approach towards a subject and for its nature it can be ascribed to the category of semi-quantitative foresight methods. Into this wide methodological framework, Delphi technique is placed in the sub-category of methods based on information coming from rational judgements and viewpoints of experts and commentators (Popper, 2008). It is mainly used for surveying the potential of a well-defined market or demand.

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Information are collected through an iterative procedure. Three rounds were carried out with the aim of collecting judgements and viewpoints; it was developed an appropriate questionnaire for each round. The first questionnaire is used to define boundaries of the field of study and some general characters; the second one explores in depth the central theme drawing information and elements from the 1<sup>st</sup> round questionnaire, following the analysis of the answers; the last questionnaire should allow to complete the forecast whose examination should offer suggestions and indications to outline strategies for this sector.

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Contemporarily the experts panel necessary for the survey has been composed. It included 5 categories for a total experts number equal to 20; this is the precise composition: producers, fish chain operators, technologist, policymakers and market scholars.

Regarding producers group, it should be said that some of them had to forcibly be removed because they have recently given up on this production, mainly due to the scarce economic returns obtained.

It was not made any attempt to reach a consensus, conversely it has been respected any case of polarization, because it requires more investigation being in constant evolution and it is not possible to give a clear definition of it. Diverging issues can be studied in the future by the use of different techniques and methodologies.

Survey coverage has been at national level, choosing witnesses working in several areas of Italy.

The first questionnaire included six broad open questions requiring narrative response about: 1) hurdles/strengths of the organic fish production process; 2) market potentialities of organic aquaculture products; 3) consumers' behaviour towards organic fish; 4) firms' marketing strategies 5) hurdles/strengths of the regulation framework; 6) the role of the Italian Institutions in organic aquaculture value promotion. The obtained responses have been registered and analyzed and the results will represent a useful feedback in order to prepare the questionnaire for the second round. This will be different since the first one and it includes a set of closed questions.

At the end of the second round, the Authors will evaluate the need of a third round of the survey.

## Results

In Italy, in spite of economic crisis and the drop in spending in food sector in general (ISMEA), in recent years production and consumption of organic products have shown a rapid growth. ISMEA emphasizes that the expansion of organic sector is confirmed by the increasing of certified operators: 49,709 in 2012 among producers, processors and distributors, an increase of 3% on annual basis; there has also been a growth of organic sales shops (BioBank), for a total amount of 1,270 in 2013 (more than 5% compared to 2012).

According to Nomisma data, in 2012 the weight of organic food consumption was 1.45% of the total food consumption expenditure while the total organic food expenditure stood at €2 billion (+6.7% compared to 2011).

Moreover, the performance of Italian export of organic products in 2011 shows a positive trend: more than € 3 billion that represent more than one third of Italian organic turnover (ISMEA).

In 2009, the whole production stood around 53,500 tonnes, mainly concentrated in some European countries (Germany, Great Britain, France and Switzerland). This quantity represents about 0.1% of the global aquaculture production and about 0.26% at European level (IFOAM 2010). Species that are most commonly bred through organic processes are salmon, trout, crayfish, sea bass and sea bream. In Italy this market is basically nonexistent: in 2012 there were 21 organic aquaculture companies mainly located in the north central part of the country (SINAB, 2012). Furthermore, the import/export organic fish products proved to be irrelevant or nonexistent.

The Italian organic aquaculture sector, pointed out by the results from the first round of the Delphi methodology, is still confuse and not so advanced and, moreover, full of difficulties and unsolved hedges; for more detailed information on them, Authors push back to the edited paper.

Below is a synthetic framework of the results:

- **productive process.** The principal hedges are linked to: the reproduction phases of some species; the technical management of the farm; the application of organic production basics and requirements); the organic fry and feed supply issues; production economic competitiveness achievement and maintenance
- **regulation and legislation.** Still recent and to be refined; Regulation (EC) No. 710/2009 shows some technical difficulties and contrasts: conversion rules have to take in account the extreme diversification of the sector, in terms of breeding species, and link them to the entire biomass and not to the animal age; organic fry use is considered a strong constrain due to the lack and inconsistency of availability in domestic market;

- **firm profitability.** The overload of bureaucracy in authorization issues added to the process difficulties strongly weighted on the productive costs; animal density is particularly felt as a problem and it is linked to low profitability;
- **market opportunities.** There are opposite opinions among interviewed: some consider there are no or scarce chances for market development due to the high prices in the consumer's market for both fresh and processed organic fish, due to the mark-up in the final phases of the supply chain. Moreover the situation is affected by problems in the post-capture management (differences in capture and processes tools; commitment of different transport platform for organic products; low diffusion of specialized and fresh fish equipped shops. Some other consider that organic fish may have good market opportunities because it fights the consumer's opinion on farmed fish (fat, unsafe, etc.) and may be perceived as substituted product of captured fish, especially in a long period view, where the decreasing wild fish stock will cause an increase of its price, leaving market possibilities to organic fish product closer to it than the farmed one. Nevertheless producers assert the quality of the Italian conventional reared products and so consumers don't feel the usual organic products appeal and buy them only according their sensibility for environment and animal welfare;
- **marketing strategies.** About marketing strategies that have to be implemented we have to underline the convenience for producers to choose direct sales channels, to adopt price policy, to enforce accurate and complete communication plan to inform and make consumers aware about organic fish environmental and ethic value, and about its special characteristics and brand awareness. Further strategies may be represented by chain agreements to perform "ready to eat" products and to foster competitiveness through innovations. The distribution net represents a nodal point: it has to be competitive, to contribute to organic fish valorisation and sometime it consists of a small number of operators;
- **Institutions.** A basic role is attributed to Public institutions (PI); PI have: to improve organic fish knowledge level at a starting phase, and, then, according to new PCP mandate, promote aquaculture; to focus national policies on diffusion of organic aquaculture and, on the other side, address regional policies to drive local development and strengthening of the sector. PI may work on several level: downsize bureaucracy for producers, improve quality check to protect consumers, control external audit authorities' amount and quality, fulfil new actions for organic aquaculture sector development by conversion of FEP subsidies towards organic aquaculture, foster cooperation among producers, promote organic fish image and its use in school dining hall.

## Discussion

Even if organic sector represent a market segment of limited size, it is possible to say that it is no more a niche. The reasons for this expansion lie either in a better organization of supply, and in the growing attention of consumers to issues linked to welfare and food safety.

Within that general frame, the production of food through organic aquaculture seems to be a very important tool in order to supply a market segment which consists of safe and certified products, since the main purposes of organic practices are namely the improvement of food quality and of its safety, by implementing environmental friendly processes.

It is important to reflect on the fact that some interviewed experts emphasize the importance to promote scientific research and studies focused on organic aquaculture in order to favour the sector development from a technical point of view and the consumers' knowledge. Furthermore, reflecting on the survey's results, the experts appear quite worried for EC Reg. 710/2009 application: in fact it could cause higher costs for the producers and trade expenses. The difficulty of placing the products on the market is related to packaging and the compliance with organic certification standards along the supply chain.

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