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Alternative seafood marketing systems foster transformative processes in Mediterranean fisheries

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ABSTRACT

Local fisheries have often limited influence on the pricing dynamics due to their low capacity of production and because they must compete with aquaculture products or imported seafood. As a response, new marketing and labelling initiatives, such as direct sale and certification of origin schemes, have emerged. In Catalonia and the Balearic Islands, over the last 15 years, these initiatives have been thriving in the interstices of the traditional marketing channels, which start at the auction as the first sale system and largely determine the ex-vessel prices. These initiatives represent a pragmatic effort to cope with the diminishing fisheries resources while adding value to the catches and helping to improve the sale prices. They are also a way to acquire larger market flexibility to face global challenges. We investigated emerging marketing and labelling initiatives by means of one discussion session, semi-structured interviews with fishers, fishmongers and other actors involved in the production, first sale and distribution of seafood. In this paper, we draw from 4 years of fieldwork in Catalonia and the Balearic Islands to investigate the history and evolution of alternative seafood marketing arrangements and why some have succeeded and others failed. The research provides an illustrative example of how fishers adapt and resist global market forces and calls into question the monopolistic structures grounded in the existing relationships between fisheries associations and middlepersons. The results of the fieldwork also highlighted the problem of adjusting catches to demand, and the conflicts of interest between the fisheries sectors, enterprises and fisheries associations.

1. Introduction

The introduction of large quantities of fish imports by the global seafood trade poses several challenges to local markets that use traditional marketing systems, which are ill-adapted to new scenarios [1]. Local fishers are losing control of the local market to large industrial chains. Albeit this is affecting fisheries in different parts of the world, the production from local fish stocks in European countries bordering the Mediterranean Sea is much lower than the demand, making local fishers unable to influence the ex-vessel price of their product under the prevailing marketing arrangements. Additionally, local fishers must face decreasing profitability due to declining wild fish stocks [2,3] and cannot transfer increasing production costs to ex-vessel prices due to the high-volume of seafood imports that dominate the market and determine the sale prices.

Over the last 50 years, the globalization of seafood production has resulted in the annual global consumption per capita more than doubling [4]. The increase in living standards, notably in mid and high-income countries, is one of the main factors increasing the food consumption of products of animal origin in general and fish consumption in particular [5,6]. Therefore, the domestic seafood consumption does not account for the domestic seafood production in many nations, e.g., the EU relies significantly on imports to meet the national demands for seafood products [7]. European countries consume almost 12.45 million tonnes of seafood each year – yet the domestic production is only approximately 5.40 million tonnes; therefore, as much as 55% of seafood consumption must be met by imports [8]. However, these general figures mask an important heterogeneity in the fish production and fish consumption patterns in Europe. For instance, household consumption of fresh fish in Spain is by far the largest in the EU [8] and fresh fish is much more accessible in local markets than in other countries. Likewise, fresh fish are part of the most traditional cooking recipes [9]. Nevertheless, fresh fish consumption has declined every year since 2014 [8]. Although fresh fish currently represents 44.4% of the total fish

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products consumed in households, its importance has decreased by 16% in only 9 years (2008–2016) [10], while the consumption of canned food and frozen seafood increased by ca. 10% over the same period [11]. In 2016, Spain ranked as the fourth largest importer of seafood in the world [12]. However, seafood from aquaculture has been growing year after year [11]. Concretely, in Catalonia, approximately only 22% of the seafood consumption is provided by fisheries from Catalonia [13]. Commercial fishery catches in the Spanish Mediterranean are channelled through the compulsory daily auction run by the fisheries association (*Cofradía*) of each fishing port, regulating the arrival time of vessels and the order of sale, usually to wholesalers, who serve as the main traditional distribution channel to fish retailers and restaurants.

In the Mediterranean, the historical experiences of local management are rooted in their own local fishing institutions. In the case of Spain, keeping the same ancient designation taken from the religious medieval organizations or guilds, these institutions are the *Cofradías,* which in former times ensured the access to resources to its members in recognition of subjection to the political powers (Church and King). This function was, to a certain extent, maintained historically throughout different political regimes [14] until they were constituted as public law corporations in 1943. At present, the *Cofradías* have a social and economic role in controlling the access to the resources (according to the territorial limits of fishing ports, schedules and time of fishing) and organizing the first sales via Dutch auctions [15].

Through the auction system, the ex-vessel prices are set, accounting for the level of competition between buyers, based on the supply-demand relation [16], in a distribution channel ultimately interacting with imports and fish farm products [7]. Add to this the important demand oscillation throughout the year, which reaches an important peak during the tourism season, increasing the prices up to 20%. In addition to the limited capacity of local fishers to influence prices, the decreasing fishery resources due to chronically overexploited stocks in the Mediterranean [17] and the increase of imports must be added. As a result, Mediterranean fisheries show low fishing economic performance, which is the main reason for the important decrease in the fleet size and the lack of intergenerational replacement observed in recent decades [18].

As a response, several new marketing initiatives have emerged locally to cope with these threats. These initiatives, which are promoted by fishers' cooperatives, environmental companies, individual fishers or collectively by the small-scale fisheries sector, range from direct marketing arrangements similar to those described in the USA and Canada as Community Supported Fisheries (CSF) [1,19,20] to the so-called alternative food networks [21], among others. Due to the novelty of these initiatives in Mediterranean fisheries, a knowledge gap exists regarding the types of promoters (fisheries associations (Cofradías), private companies, individual fishers or companies, fisheries cooperatives or producer organizations undertaking marketing initiatives), methods, motivations and final objectives of these marketing systems. The supply chains from production to consumption have been little studied in general [1].

To contribute to addressing this knowledge gap, this extended ethnographic fieldwork explores the seafood marketing initiatives that were thriving in the interstices of the traditional marketing channels in Catalonia between 2007 and 2019, with information on the marketing systems from the Balearic Islands juxtaposed for comparison.

The aim of this work is to investigate the different strategies that attempt to cope with diminishing fish stocks and to improve the economic performance of individual fishing units. The research also examined how emerging strategies help to acquire larger marketing flexibility to face the fisheries' current challenges, which are due to decreasing marine living resources and a lack of generational replacement.

2. Material and methods

2.1. Data

The work draws on ethnographic fieldwork and interviews to collect qualitative data in the context of two large research programmes developed between 2017 and 2020.[1] The mix-methods approach to assess the socioeconomic sustainability of fishing communities in Catalonia included semi-structured face to face interviews, participant observation and discussion sessions with stakeholders. This study draws on data extracted from 24 semi-structured interviews and 9 in-depth interviews addressing issues such as social innovation and entrepreneurship initiatives (marketing and labelling initiatives). The interviews were conducted in the provinces of Girona and Barcelona between 2017 and 2020 after identifying, at an early stage, the alternative marketing initiatives from Catalonia by browsing through online platforms. The data gathered online were incorporated in a database classifying the information by the province of the initiative, name of the initiative, motivation, holder of the initiative, brief description, fish species marketed, geographic area of distribution, promotion activities, main problems encountered in the development of the initiatives, and contact. This portfolio was constantly updated as new initiatives were detected and others failed and with the more exhaustive information collected from the interviews. The inventory of marketing initiatives (Table 1) enabled the decision to focus on the ethnographic data collection in the provinces of Girona and Barcelona, where most of the new alternative initiatives in Catalonia are concentrated (Fig. 1).

The data on the Balearic Islands (Fig. 2) were collected through a discussion session in the frame of a meeting held at the Roses Fisheries Association (*Cofradía* from northern Catalonia) on the 13th of November 2018 with 10 fishers from the Balearic Islands in an exchange visit organized by the Fisheries Local Action Group (FLAG) of the province of Girona.[2] The aim of the session was to exchange insights and experiences regarding marketing initiatives, certification schemes and co-management plans.

The semi-structured interview participants included fishers already involved in some new marketing initiative and/or in some initiative in a project and those just beginning to become involved. Note that some fishers were involved in more than one initiative according to the target species marketed and considering that some initiatives are focused on single-species. In-depth interviews were conducted with the initiative holders and/or promoters. The interviews covered a large spectrum of socioeconomic questions referring to the marketing initiatives (see Annexes). All the interviews lasted between 1 and 2 h, and with the consent of interviewee, they were recorded, transcribed and coded. The data collection process was aligned to the code of ethics of the American Anthropological Association (https://www.americananthro.org), and all the information was duly anonymized.[3]

2.2. Analysis

The qualitative data regarding the origins of the initiatives, their main goals and motives have been analysed, and the different social

[1] Note that already in 2015 in the frame of a research project on small-scale fishing at the Natural Park of Cap de Creus (province of Girona) the first alternative initiatives were detected.

[2] Fisheries Local Action Groups (FLAGs), are partnerships between the fishery actors and other local private and public stakeholders. EU-funded, they design and implement a local development strategy to address their areás needs, be they economic, social and/or environmental (see https://webgate.ec.europa.eu/fpfis/cms/farnet2/on-the-ground/flag-factsheets-list_en).

[3] Code of Ethics of the American Anthropological Association (approved 1998) https://s3.amazonaws.com/rdcms-aaa/files/production/public/FileDownloads/pdfs/issues/policy-advocacy/upload/ethicscode.pdf

Table 1
Marketing initiatives between 2007 and 2019 (SSF: small-scale fishing; OTB: Bottom trawl; PS: Purse seine).

Direct sale CSF/SCC	Promoter (entity)	SSF, SSF + OTB/PS, OTB, PS	Auction/No Auction/From the vessel to the middleperson	End-user	Product
Direct sale	Environmental enterprise	SSF, SSF+OTB/PS	Auction	Consumer groups Household (door-to-door) Household (door to door) through a fishmonger[a]	Closed fish baskets
CSF/SCC	Small-scale fisher enterprise	SSF	Auction	Consumer groups Environmental Enterprise (in charge of distribution) Schools	Closed fish baskets
CSF/SCC	Familial fishers enterprise	SSF, OTB,PS	Auction/From the vessel to the middleperson	Consumer groups Household (door-to-door) Retailers Restaurants	Closed fish baskets Fish baskets per customer demand
Direct sale	Environmental enterprise	SSF	Auction	Household (point of sale)	Closed fish baskets
CSF/SCC	Fisheries association (Cofradía)	SSF	No Auction	Consumer groups	Closed fish baskets
CSF/SCC	Familial fisher enterprise	OTB	Auction	Household (door-to-door)	Closed shrimp baskets
Direct sale	Fisheries association + distribution enterprise	SSF, OTB, PS	Auction	Household (door-to-door)[a] Wholesalers Retailers Supermarket	Fish baskets per customer demand Processed products
CSF/SCC	Small-scale fisher enterprise	SSF	From the vessel to the middleperson	Restaurants	Fish per customer demand
CSF/SCC	Fisheries cooperative	SSF	Auction	Household (door-to-door) Restaurants	Fish per customer demand
Direct sale	Individual small-scale fisher as self-employed	SSF	From the vessel to the middleperson	Enterprise of distribution	Shellfish per customer demand
CSF/SCC	Fisheries association	SSF, OTB	Auction	Household (door-to-door) Restaurants Wholesaler	Fish per customer demand Processed products
CSF/SCC	Fisheries association	SSF, OTB	Auction	Household (door-to-door)	Closed fish baskets
Direct sale	Fisheries association	SSF	No Auction	Household (door-to-door)	Fish per customer demand
Direct sale	Agricultural Cooperative	SSF, OTB, PS	Auction	Household through agroshop	Fish per customer demand
CSF/SCC	Fish Producers Organization (FPO)	SSF, OTB, PS	Auction	Household (door-to-door) Wholesalers Retailers Restaurants Supermarkets	
Direct sale	Fisheries association	SSF	No Auction	Household (point of sale) Retailers Restaurants	Fish per customer demand
CSF/SCC Direct sale	Fish Producers Organization (FPO)	SSF, OTB	Auction/No Auction	Household (door-to-door)[a] Household (point of sale) Wholesalers Retailers	Fish per customer demand

[a] Distribution ways started in March 2020 with the lockdown decreted due to COVID 19.

actors and institutions involved in the distribution chains, tracing the different routes from the vessel to the consumer, have been identified (Fig. 3). The values and non-market principles underlying the producer-consumer relationship, as expressed by the interviewees when describing the initiatives, were used as the main codification criterion of the interviews (e.g., "authenticity", "socio-sustainable", "fairness", "trust") using grounded theory [22,23]. The primary data have been triangulated with the information compiled from the online initiatives' websites, as well as by tracking the initiatives' social media (Twitter and Facebook), news articles, and secondary complementary sources, which helped to correctly frame the scope of the marketing initiative (e.g., legislation). According to this information and taking as reference the descriptions provided by Bolton [24] in the case of the USA and Canada and FARNET (The European Fisheries Areas Network) in the case of Europe [20], the initiatives have been classified as SCC (Short Supply Circuit)/CSF (community supported fisheries) or direct sale. The literature on alternative seafood marketing arrangements originally arose in the US and Canada in the early 2000 s, where the initiatives were primarily based on the Community Supported Agriculture model [25]. The main goals of these initiatives were to react to producers' and consumers' concerns about the environmental impacts, social, economic, as well as cultural consequences on rural communities that globalization and industrialization could produce [24–31]. These initiatives, originally linked to social movements, provided an arena for producer and consumer activism, with the aim of re-embedding food markets in the social fabric of communities and to tackle the environmental impacts that large agrifood value chains produce [32].

Finally, the economic drivers, such as prices, have also been analysed to better understand what these initiatives represent economically for both producers and consumers; however, an in-depth socioeconomic analysis has not been performed as it is out of the scope of this research.

3. Results

3.1. Marketing seafood initiatives between 2007 and 2019

In 2007, the first Fish Producers Organization (FPO) was established in the Province of Tarragona, with the FPO becoming the middleperson ("buyer") at the auction, along with regular fish buyers. Afterwards, in 2008, in the province of Girona, a Fisheries association (*Cofradía*) associated itself with a distribution company to distribute the seafood products they purchased at the auction. Additionally, between 2010 and 2012, in the context of the multiplication of Alternative Food Networks in Catalonia [33] (resulting from the 2008 financial crisis), several seafood short supply chains and different direct sale initiatives started to emerge as the main counteraction measure to large agro-food chains

Fig. 1. Marketing initiatives in Catalonia. ● CSF/SCC ● Direct.

[34–36]. These bottom-up initiatives took advantage of the responses of food-security movements to the economic and ecological crisis of that moment. A mix of 15 individual and collective initiative types converged at the same time along the Catalan territory in the course of the 2010s, which either became consolidated or failed. On the other hand, it was the conflicts of interest between the fisheries and the middlepersons arising in 2014 that boosted direct sale arrangements in the Balearic Islands (Mallorca), where the fishers organized themselves as an FPO (Table 1). The conflict dated back to the early 2000s and was motivated by the downward prices agreed among retailers before the actual auction. This unfair practice directly impacted fish prices and triggered tensions between the fishers and retailers. It resulted ultimately in the fishers taking actions to obtain more bargaining power viz. constituting an FPO.

These different marketing initiatives that arose between 2007 and 2019 organized the sale of seafood according to different marketing arrangements at the interstices of the Dutch auction but under a legal umbrella that enables them different possibilities and helps them fulfil the national requirements of the fish buyers' registry and procure the compulsory note of first sale. The Dutch Auction system is the traditional system of first sale in Spain's Mediterranean fisheries. Since 2001 and under government permission, the sale without auction is allowed when performed at a recognized fish market or allowed establishment (Article 70 of Law 3/2001 of 26 March 2001 of State Sea Fisheries). Fisheries associations (*Cofradías*) are able to perform sales directly from the fishing vessel to the consumer without an auction according the Art. 58.8 of Council Regulation (EC) N° 1224/2009 and Royal Decree 418/2015 that enable the sale of a maximum of 50€ per day/consumer or 1.5 kg per product. This quantity can be exceeded if the sale is for a single product. Finally, sales from a fishing vessel to a middleperson (which is a commercial relation between two entities) are allowed according the Catalan Law 12/2013 of the 2nd of August on measures to improve the functioning of the food chain. The transaction cannot be more than 2500€, or 30% of the total product of one unit of production.

Despite the relatively large possibilities afforded by these legal options, the auction price is always taken as reference, usually the daily average auction price, to establish the ex-vessel price, for example, in those cases where the product is sold without passing through the auction, whether the sale has been performed directly from the vessel to the middleperson or the middleperson is a fisher enterprise (the vessel) or enterprise of fishers (even an FPO) that buys their own product. In any case, the transaction costs are not avoided (note that fisheries associations (*Cofradías*) receive a percentage of each sale as a benefit to the organization). Likewise, the fisheries associations (*Cofradías*) maintain their role in controlling the social aspects of access to resources to which all enrolled fishers are subjected.

3.1.1. Community supported fisheries (CSF) or short supply chains

Community Supported Fisheries (CSFs) or Short Supply Chains in Catalonia (n = 10, 55%) are initiatives driven by fishers, who associate themselves to perform direct sales to consumers. The ideas of proximity, authenticity, cultural heritage, environmental values, the social values

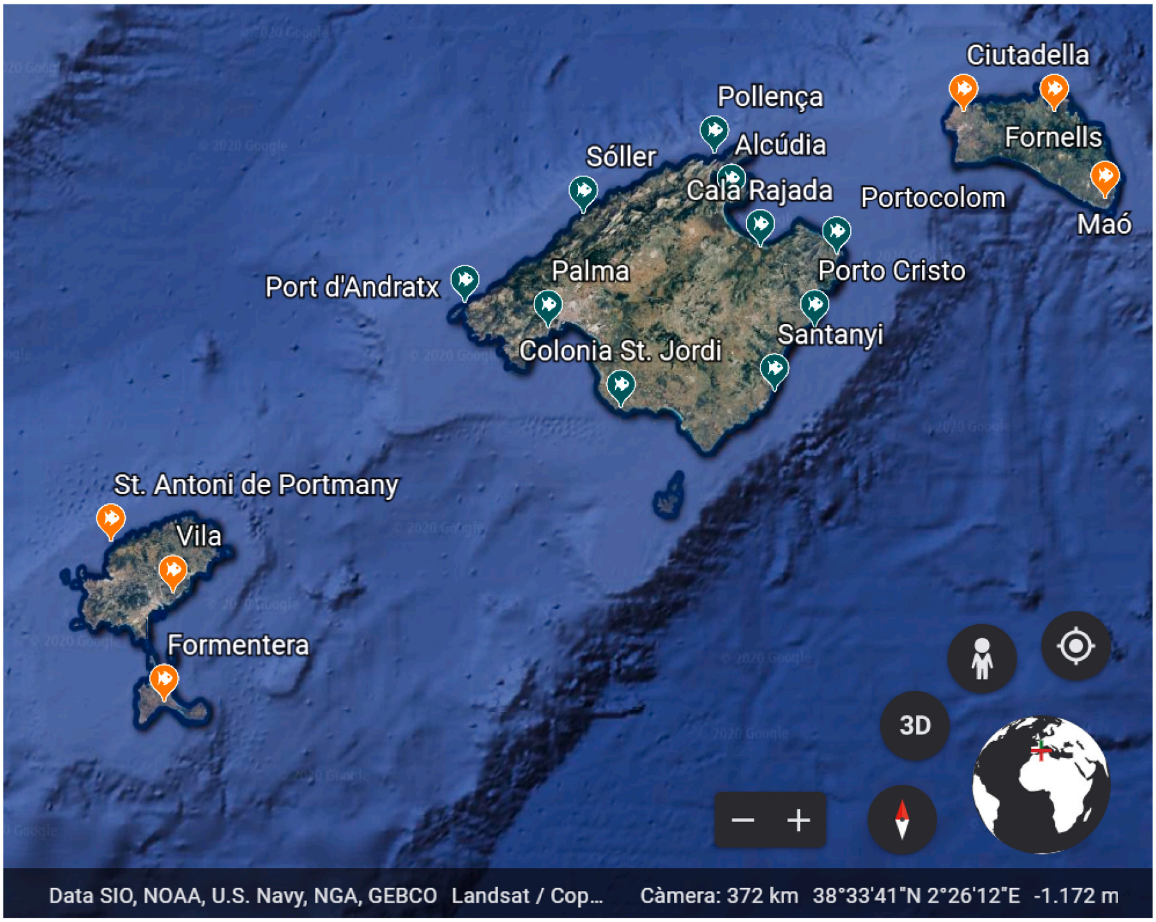

Fig. 2. Marketing initiatives in the Balearic Islands. Direct sale CSF/SCC and Direct sale.

associated with the fishing activity, fair price for the producers, to ensure generational replacement and to improve product competitiveness not only with regard to the global market challenges but also locally are all axioms that summarize the purposes of these initiatives. Some of the CSFs are "legitimated" by management plans, such as the co-management plan established in 2012 for Sand eel (*Gymnammodytes cicerelus*) [37] but also the deep-water shrimp (*Aristeus antennatus*) management plan in Palamós (province of Girona) and the management of the European eel (*Anguilla anguilla*) in the Ter river. Although short supply circuits are a marketing practice often associated with small-scale fishing, some bottom trawl fishers and purse-seiners ($n = 5$) are also involved. Several legal entities, i.e., from enterprise fisheries co-operatives or Fish Producers Organizations (FPOs)[4] to the fisheries association itself (*Cofradías*), give shape to these collective fishery organizations composed of a fisher's family, kin groups, the entire fisheries association and/or the fisher's partnerships. Whereas a cooperative designs a company formed by persons who join together on a voluntary basis to carry out business activities aimed at meeting their economic and social needs and aspirations whose properties and benefits are shared by all partners, the FPOs are entities in which the producers can associate with the goal of constituting a mechanism for the stabilization of the markets through adjustments between supply and demand and guarantee the yield of producers.

The fishers, through these organizations, become middlepersons themselves by purchasing their own products at the auction. Alternatively, they can close a contract agreement with the fisheries association under administrative permission to obtain the product directly from the vessels (of their own property or from others) that take participate in the project at a negotiated price. This is, taking the auction price as the reference or mean price. Only an intermediary step between producers and consumers intervenes, in this case, the same fisheries marketing entity. Therefore, the fisher is always placed at the heart of the transaction, aiming at controlling the marketing. Despite the price of sale being established according to the auction average sale price, the perception of traditional buyers or middlemen is that these market channels are organized "off the system" (apart from the auction) and the prices are not transparent and create unfair competition. Indeed, this is not a new situation. The first failed alternative marketing arrangement in Catalonia, the so-called "Giropesca", already raised strong opposition from middlepersons to the point of boycotting the initiative. "Giropesca" was an attempt to associate five fisheries associations from the Girona province that intended to unify the auction systems into only one and to provide a unique certification scheme and traceability system to be more competitive [38].

The production-consumption connection for the case of CSFs or SCC is achieved by delivering fish baskets that directly reach the consumers, who pick up the product at an agreed location or receive it at home. Therefore, the delivery allows the tracing of different types of routes, while strengthening a maritime-urban alliance, directly from the vessel

[4] See REGULATION (EU) No 1379/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 on the common organisation of the markets in fishery and aquaculture products, amending Council Regulations (EC) No 1184/2006 and (EC) No 1224/2009 and repealing Council Regulation (EC) No 104/2000.

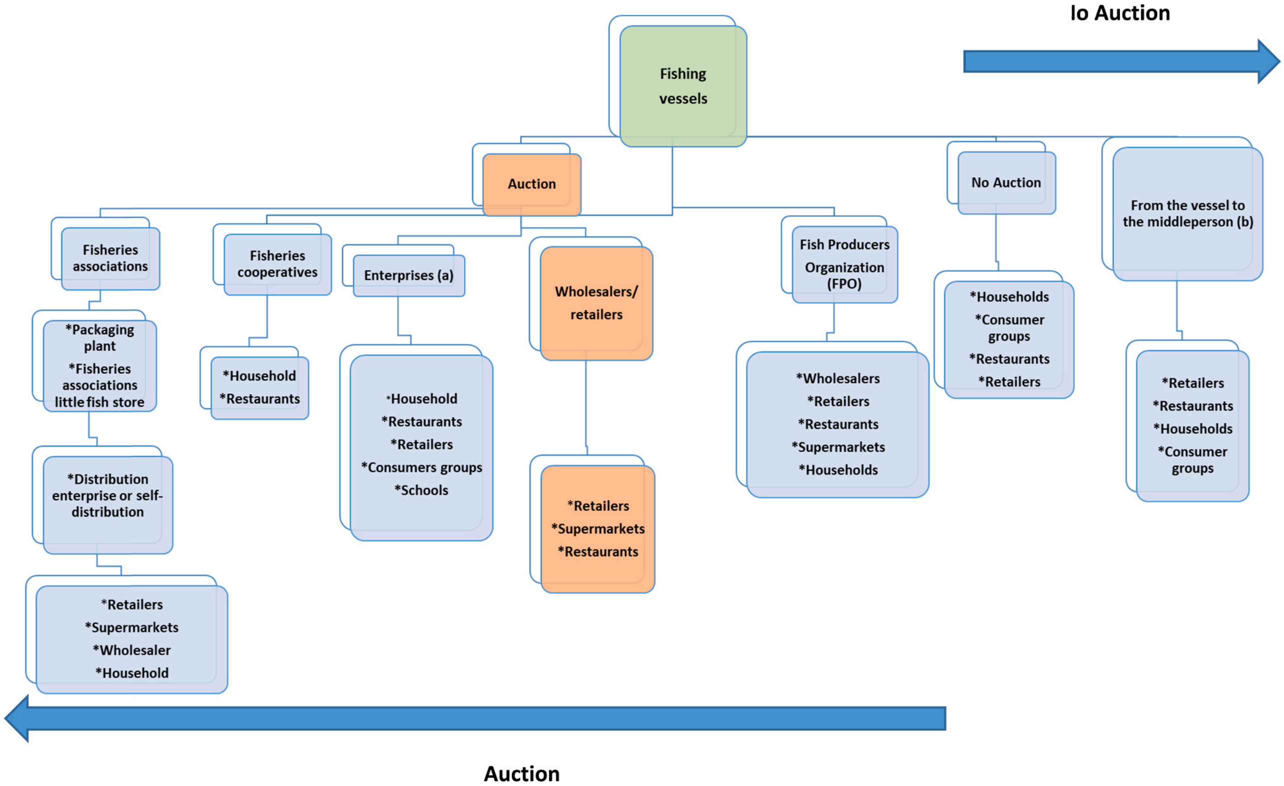

Fig. 3. Routes of the marketing arrangements. The traditional route is in orange. Note that (a) indicates "Enterprises", which can be environmental enterprises, companies of fisheries with family links, or fisheries associated with companies, including some fisheries associations, which purchase the products through auctions and are usually in charge of the distribution of the product, where (b) "from the vessels to the middlepersons" refers to middlepersons, such as fishery companies with family links, or fisheries associated as companies or distribution enterprises that purchase the product directly from the vessel.

to the consumer. The fish baskets are composed of seasonal fish, even underutilized species, and are delivered to agro-ecological consumer groups constituted by 30–40 families cooperatively organized to purchase the organic food basket on a weekly basis. Catalonia has a long history on cooperative movements that date back from the 19th century with different episodes along the time. Although it was not until the 2008 multidimensional crise that urban food provisioning networks appear through cooperative initiatives (often informally organized). These networks connect small-scale producers with agro-ecological consumer groups [33].

Although, they represent very few consumers, only between 10 and 40 families per CSF (n = 4), they are the individuals that are most interested in establishing meaningful socioeconomic and environmental values through the food system. Consumers value the socioecological relationships established along the exchange network by linking production and consumption directly as a two-way environmental commitment process involved in a social relation of mutual knowledge between the fisher and end-user. One producer exemplified this with the following statement:

> *"[we sell through the cooperative] To get more value from doing these things right, so as to have a group of consumers who value consuming a sustainably caught product, right? It's a way of closing the circle" (.) "Because both I and my colleagues were well-known people in the fishing world (.) we told consumers where we were established, who we were and that our doors were open to come and see us" (Fisher from a CSF, province of Barcelona, 2017).*

As explained above, another type of route addresses a particular demand segment that values receiving fish baskets at home, through the door-to-door system (n = 6). This option covers more consumers; approximately between 200 and 400 consumers per year request fish baskets directly from the fishers through their online marketplace or by phone. Unlike the delivery to consumer groups agreed through face-to-face meetings between the fisheries organization and the families involved in the consumer group, the door-to-door system usually responds to individual online orders. The frequency oscillates between once per year to weekly, and in some cases, their requests failed to complete, because the consumer did not find the product they were looking for or the price was too high. Finally, the restaurants can also be supplied by CSFs (n = 6). Restaurants searching for "fish of quality" also highlight the direct connection to producers focused on the mutual knowledge as the core aspect of a "value" production system. In the following words of one fisher participating in a CSF:

> *"And what they look for is not really traceability, they look for the fisherman, they look for that person, they look for that profession, they look for that territory, they look for that culture and that is what we have to try to offer with our product, through our web page, our faces,.so that people can be eating in a restaurant and just know that this fish has been caught by the boat H. and that the H. belongs to JM, from L'Estartit, who fishes in this Bay and has caught it with this fishing gear and during this season and JM has brought it to this establishment" (Fisher from a CSF, province of Girona, 2018).*

Overall, CSF implies a commitment involving both the producer and the consumer to give value to the activity, the fishers and the fish in a complex interrelated relationship covering all the food system. Authenticity, heritage, proximity and territory are notions that re-localize the product distinguished from the large food chains, as illustrated by the following quote:

> *"I would never want to offer this in a distribution channel, because it is false. You have to try to reach the final consumer, to move him. and to say: Well, I have caught it for you, I go to find it for you, I go. to fish it for you! And that he feels that, that I reach him, and. while he eats it, he says:.*

'Oh, here it is. I will not find this in the market, no matter how hard I look for it, I will not find it !!'" (Fisher holder of a CSF, province of Girona, 2019)

Only in three cases (n = 3) is the product served also to retailers (fishmongers), although this is the less common route. In one other case (n = 1), fishers introduced fish at schools aiming to provide fish consumption education and to search for other more stable potential distribution channels options.

The certification schemes accompanying these initiatives expedited by the same fisheries association or CSF, label and territorially locate the product with the aim to guarantee its traceability, mainly by identifying the community of fishers and the place of fishing ("pesca brava", "Cap de Creus", "peix de la Barceloneta", "Gamba de Palamós", "Angula del Ter"), or alternatively, the fishing gears and the sustainable fishing usually associated with the SSF ("Peix nostrum"). The divulgation of certification schemes has come to give publicity to a single species (e.g., *Aristeus antennatus*) of a specific fishing port (Palamós), thus causing consumers to associate it with quality, to the point that restaurants use this label to promote this product in their menus, even when its sourcing cannot be guaranteed.

All these marketing initiatives try to be combined with recreational activities to give cultural and social value to the product and the activity of fishing. Activities such as workshops, fishing tourism, visits to the fishing port and speeches to divulgate the cultural heritage of fishing are often offered by the same CSF. The objective is not only to disseminate the activity but also to dignify the profession and to discover an economic diversification option to balance the shrinkage of the fishing effort, as expressed in the following excerpt:

"We have always said that we want that the products that are created remain linked to the fishers' world: itineraries, courses, talks, fishing tourism. That they remain linked to the fisher's world. We feel that in the long run it is very easy for the fisher to disappear and these activities continue without him. This is what we believe that we have to avoid happening, and we have to make these activities revert to the fisher and be a complement to his economy. It could also end up being the case that a fisher takes someone for a sea trip, but doesn't do work, doesn't fish! … Our idea is that we have to try to fish less but fish better and explain it better. So, the ideal would be that in the long run we fish much less hours but what we earn fishing be useful,. [complemented] with fishing tourism and "alternative" sales, to have a decent salary, if not nobody will want to devote themselves to fishing. At the moment there is a very important problem of generational change. That is to say, there are no new generations who want to pursue a fishing career, because it is not attractive, because there is no fixed salary." (fisher of a CSF, province of Barcelona, 2018).

The interviewees observe that the emotional bonds wrought by experiencing one day of fishing through fishing tourism activities strengthen the knowledge link established between the producer and consumer embodied in the product. At the same time, it is a way to turn around to the fishing as livelihood by providing a new insight into the profession by incorporating cultural fishing promotion activities as part of the fishing work.

3.1.2. Direct sale

Direct sales (n = 8) involving individual fishers or collectively as a fisheries association (*Cofradía*) usually perform sales by avoiding any type of middleperson or via one middleperson other than the fisher. The main driver of these initiatives is to promote the local product of proximity, which is a guarantee of quality, taking advantage of the arrangement potential of online marketplaces and social networks (e.g., products can be posted on a web site, through an Instagram and/or Facebook account, and ordered through these same media means or simply by phone or WhatsApp). The direct sale method enables the spectrum of consumers to broaden, to improve prices and profitability. Although the fishers remain at the core of the marketing system, they differ from the CSF in that the initiative does not answer to any type of socioeconomic and environmental project but is a strategy of marketing that, in some cases, is motivated by the logistic circumstances stemming from the absence of an auction. In particular, it refers to small coastal villages hosting a few small-scale fishers, such as in the Balearic Islands (Menorca, Eivissa and Formentera) or in the province of Girona (Cadaqués, L'Estartit).

Nevertheless, direct sales can also be offered by middlepersons or environmental enterprises that, under a sustainability criterion, establish the connection between the producer and consumer via agro-ecological food consumer groups or door to door (n = 2) to individual households by delivering fish baskets of seasonal fish and underutilized fish. In these cases, a project involving the middleperson and consumers committed to an exchange network based on trust that certifies that the product comes from a sustainable production system, preferably from small-scale fisheries. This trust relationship is grounded partly on the knowledge that the middleperson has about the fishing activity and the seafood. Activities of training in preparing and cooking fish, as well as recipes are also offered as part of the service. Whereas these environmental enterprises advocate alternative ways of producing and consuming and promote sustainability through responsible consumption, direct sale represents for individual fishers the possibility to diversify the marketing activities. This works especially well for specific "premium species" (e.g., sea urchins) that are highly valued by the local market. Similar to the CSF, an agreement established between the fisheries association, Catalan government and the individual fisher guarantees the price negotiation, taking the auction price as reference. In the case of the Balearic Islands (Eivissa and Formentera), the seller enters into a binding compromise to acquire all the vessel's catch. In contrast, environmentalist enterprises purchase the product from the auction, as is traditional. Direct sales can also be on demand (n = 3); in this case, it is not a "closed basket", and consumers can decide what they want to acquire, although they are always subjected to the season and catch availability. For instance, this is the case of an agricultural cooperative in the province of Tarragona that performs direct sales on demand through the agro shop of the cooperative, which purchases the fish at auction.

3.1.3. Diversity of prices to end-user

The great diversity of seafood product prices cannot enable the establishment of a common pattern between the types of initiatives nor distinguish them according to socioeconomic consumer profiles. It is left to each organization to determine the final price, thus resulting in a great variety of possibilities within the same marketing mechanism. The fish baskets have a fixed price according to a pre-payment scheme established by each consumer group's self-management system. The fish can be served clean and filleted, which increases the prices, to which transportation and boxes are added, as well as a supplement for the workforce, depending on whether the fish has had to be prepared in a workroom. One of the reasons that customers lost interest in the original fish baskets was due to the time it takes to clean and prepare the fish. The quantity distributed can lower the prices by approximately 1–4 € per fish basket. Nevertheless, those more environmentally committed consumer groups prefer to purchase the whole fish, neither cleaned nor prepared, as a way to keep it in a fresher state. The prices usually oscillate between 10 and 28 € per fish basket of 2 or 2.5 kg of fish (approximately 10.50 €/kg), or 30–34 € per fish basket per 1.6 kg or 1.8 kg (between approximately 8.50 and 10.50 €/kg), calculating a marginal profit of a minimum of 2–3 €/kg, according to species and purchase price, accorded with the fishers, even if it had been purchased at the auction. The relatively small differences in prices also depend on the type of fish, for example, whether it is an underutilized fish or one that is more market valued. When the prices are arranged without passing through the auction, the final price increases sponsored by the ethical criterion of offering a fair price. It is important to note that the middlepersons respected the ethical price in past times, under a social tacit understanding that foreshadowed the corporative functioning of the overall system. However, currently, the notion is being lost, as large industrial chain middlepersons not directly involved in the fishing world are increasingly participating in the auctions. This concern is vividly illustrated by the following excerpt:

> *"Before, there was a bit of a code of ethics, the buyer, despite wanting to buy the fish at the lowest possible price, had a certain code of ethics, and understood what the fair price was. That is, to follow the offer and the demand logic, yes, but.naturally, at the moment. for example, now there are supermarkets that.-I do not say that it is negative, it goes well for other things-, but that they send a buyer who.is told to buy at the cheapest price that you find can and the difference, goes to your salary, all what is saved here goes for salary bonus as incentive, right? The objective is to buy lower and lower. Of course, this person. This is not sustainable for us, for our vessels" (fisher of a CSF, province of Barcelona, 2018)*

The fair price for producers is what is undermined as a result, but apparently, this does not really lessen the price for consumers nor offer an alternative to traditional fishmongers whose products are sold at similar prices or with little difference in relation to direct sales, unlike the, direct sales arranged for "premium seafood" sold directly to restaurants at higher prices, increasing the value of the product up to 2€ over the mean price at the auction, without specially affecting the purchase price for the customer.

> *"You pay 3 euros for a plate of Sand eel at the restaurant, and there you pay it. Of course, if a consumer asks me for 100 g of Sand eel and it this costs me 20€/Kg + VAT + the fishmonger's profit; 100 g will cost to the consumer 10€ and the restaurant charges less. This is a good example for the fisherman, a bad example for the variety of fish and the knowledge of fish, because it is limited to one type of sale that is the sale to the restaurants (directly), and I do not know what brings more because it does not favor all fishermen. It is limited to a few" (Fishmonger, 2018).*

This system is perceived as producing inequalities between fishers practising different fisheries, since not all species have the same "price premium" nor can their fishers take part in a CSF organizing direct sales to restaurants. Note that the great profits of selling directly to restaurants depend on the species and the restaurant. The restaurants that usually purchase high premium species (e.g., European eel *Anguilla anguilla*) are not accessible to all customers. Although fishers still obtain greater profits selling directly to restaurants, the margins of these restaurants continue to create a gap between the producers' profits and the consumers' expenditure. Nevertheless, for many years, in small places without auctions and with few fishers, despite taking auction prices as reference, the prices, which are usually fixed along all the fishing season, are negotiated with individuals with purchasing power. In these cases, the trend is to progressively become more specialized in a few high market valued and very demanded species, e.g., Spiny lobster (*Palinurus elephas)*.

4. Discussion: weakness and strengthens of the initiatives, between cooperation and entrepreneurship

The Dutch auction system has dominated as the first sale system in Mediterranean Spain for a long time. Although this is the traditional first sale system, the Fish Producers Organization (FPO) was introduced in 1987 by the European Economic Community (ECC) but was relatively unsuccessful until recent times [15], given that there were strong associations in other areas of Spain. In Catalonia, the socio-political costs that would result from reducing the relevance of the *Cofradías,* which are traditionally rooted in the social fabric of fishing communities, it has been pointed out by Alegret [39] as the main reason for the relative resistance to constitute Fish Producers Organizations.

Despite the global increase in seafood demand based on the increased consumer spending capacity and social and demographic characteristics in Spain [40], the lifestyle and cultural changes condition consumption patterns. the new demand preferences encompassed with the diversity of purchase possibilities within the increasing spectrum of current seafood market options have reduced the control of local wild seafood producers (fishers) over fish consumption. Not only has there been a reduction in fresh fish consumption but 50.6% of the fish is acquired in superstores and supermarkets, with an increase of e-commerce of 17.5% [41]. That is, the traditional route from fisher to auction to wholesaler to retailer [fish shop] to consumer (restaurant or household) is losing importance and fishers have to find new routes to deliver their product to consumers.

The present-day market-society complex relationship has laid bare the weakness of a corporative system protection that under socio-ethical criteria could restrain the auction "supply and demand" logic to prevent greater inequalities between producers while ensuring the minimum economic conditions for maintaining the fishers' livelihoods. The interviewees stated that the "fisheries world" revolved around a web of acquaintances from different sectors of the value chain, sharing an implicit compromise to balance the interests of everyone reflected in auction system.

Socio-ethical codes, such as the cooperative social rules resulting from a fisher (or fisheries association) intermediaries alliance relied on mutual knowledge and balanced competition within an acceptable moral frame of the transaction that ensured a fair price for producers. Since the loss of the fisheries associations' bargaining power, the value of the traditional seafood marketing system has been questioned.

The unbalanced price competition is clearly affecting small size auctions with less volume, which face difficulties (threatening the viability of the fisheries associations that at the same time depend on the income these auctions generate). These circumstances may also explain the relevance of direct sale and/or CSF/SCC in small fishing ports.

Furthermore, the scarcity of wild fish made the availability of seafood product at the market much more unpredictable. Paradoxically, the persons interviewed express that this situation indicated the need to become "self-managed" or more "entrepreneur" in the sense of becoming disentangled from the fisheries association marketing system, with the goal to enhance fishers' marketing participation, enabling the possibility of adopting new marketing systems more aligned with present-day conditionings and improve economic performance. The traditional (Dutch) auction model is felt as devaluing the fishers' profession and seafood resources. The auction system is probably much more fit to the mid-sized vessels (trawlers, purse seiners) that dominate in many Cofradías.

Nevertheless, beyond the price being an important condition of economic performance, it is the cultural knowledge of seafood products, their species and variety that is taken into consideration. This is, although seafood products have been generalized in consumer demand, the introduction of local fresh seafood into households' menus is something specially bonded to culture and eating habits. The differences in the fish basket prices between organizations analysed in this study do not indicate a differential between socioeconomic consumer profiles, while what really establishes a difference are the culture and the habits. Although, in this study, this idea could be only pointed out as hypothesis, the results of several consumption studies highlight similar arguments. Witkin et al. [42] pointed out how the consumers of CSFs in the UK "preferred historically popular species" whereas the underutilized ones received less support. In Bulgaria, despite increasing seafood production and imports, the lack of tradition in eating fish is underlined as the main driver of fish consumption, regardless of the price [43]. Overall, the studies on European consumption patterns stress that having a stronger or weaker habit of eating fish depends on a person's food experiences and education over their lifetime [44,45]. Although Spain is considered one of the countries that consume more fish, the perception of fish as an inconvenient product is much more important. This affects the frequency of consumption [44], the species consumed and the type of fish (whether it is already prepared for cooking or needs to be prepared). Connected with this premise, the lack of a "culture of the fish" that is intergenerationally transmitted, as is often highlighted by interviewees, is another important point added to the lack of knowledge in selecting and preparing fish. This can boost the change of consumption from fresh fish to processed fish products, which are perceived as quicker and easier to prepare.

The supply based on what the ecosystem is able to provide even if the consumers are unfamiliar with the species, is a risk assumed by environmentalist enterprises that perform direct sales as environmental conservation projects. Hence, different cooking workshops and courses are offered by these marketing arrangements. The failures of two CSFs (n = 4 failed) were due not only to the difficulty of adjusting to the scarce demand; in one case, there were not enough customers and in the other case, the excessive demand of school delivery overcame the capacity of the SSF (schools demanded a fixed weekly quantity of fish and that could not possibly take into account the natural oscillation of fisheries' catches availability). The failure of the CSF was also related to the impossibility to meet the demand of those consumers that preferred the fish prepared and cleaned, ready for cooking, which would have implied investment in a skilled workforce and fulfilling the sanitary requirements of the workplace. As stated by McClenachan et al. [29], food skills impact food choices by limiting the foods that individuals are able to prepare. In contrast, those more successful initiatives showed better flexibility in diversifying the distribution channel by addressing the diversity of the consumers' demands and needs. That is, by offering several possibilities and adapting to consumers' lifestyles and values, such as environmental protection, health, tradition, among others, these companies were able to meet the market segmentation. Likewise, those provisioning systems offering sales through online platforms have been experiencing exponential growth in recent years. The CSF initiatives whose product did not distinguish between fleet segments (SSF, OTB and PS) have proven to be more resilient, while the short supply chains promoted exclusively by an SSF were found to have more difficulties in maintaining the marketing channels than becoming more stabilized when they sell directly to restaurants or enterprises of distribution.

Nevertheless, CSFs that are aware of lifestyle changes do not compete with fishmongers but try to occupy a market niche of fresh food of proximity by restoring relational bonds that already existed in the Mediterranean that are deeply rooted in a culture of fishing and fish. CSFs can meet the progressively increasing great consumer segment that is looking to meet their own aspirations, desires and commitments through food as a meaningful focal point.

At the same time, CSFs can establish themselves as an opportunity for fishers to be more economically resilient while at the same time enhancing the ecosystem's health by boosting fish target diversification [30], as is being promoted through the alternative food networks in Tuscany, the Solidarity Purchase Groups, GAS (Gruppi di Acquisto Solidale) [21]. Diversification implies consumer diversity or addressing different consumer segments, which could help counter the economic and ecologic traps of specialization. Several scholars warn of the possibility of falling into the economic attractiveness of specialization, targeting highly valued and demanded species, which can reproduce the same problems of conventional value chains. That is, aligning the fishing effort with demand, impinging the overexploitation and, in turn, boosting complex dependency relations by, for example, producing a fisher co-dependence to meet and sustain the market demand [29,30,45–47].

In our study, products in line with specialization are the object of co-management strategies, such as in the sand eel and deep-water shrimp fisheries, also offered through CSF or online marketplace platforms of the fisheries association that balances conservation goals with economic performance to uncover an alternative outlet therefore integrating into the landscape of diversification of the distribution channels. The certification schemes linking the products with the tradition and local culture of a fishing community and fishing port help build maritime clusters of supply chains. That is, by interlinking social, environmental, economic and governance systems [48], which can be embodied in a fisheries lobby, therefore, increasing the internal competition for the local market. Labels used to root the products within the frame of one territory (whether fishing port or fishers' village) make consumers identify one single product custodian of quality, environmental good practices and proximity with one fishing port, therefore establishing scale paradoxes in which socioeconomic and ecosystems conservation criterion clash. The trajectories of the new emerging marketing initiatives have to be understood in their territorial specific context, into the local institutional framework in which they are inserted, their goals and the capacities of the fisheries to the elastic demand of consumers must be absorbed.

The emerging initiatives have revealed the inequities in the "struggle for prices" with the traditional system. Traditional fisheries associations run the auction where all the fishers' vessels sell their catch following an order of arriving, giving priority to the local small-scale fishers who sell the catch first, and second, the local trawl fishers. Afterwards, it is the turn of the catch of non-local vessels (again, following the order determined by a draw) [16]. Simultaneously, each fisheries association has its own time of sale that can be different from the time of sale of neighbour fishing ports. The system is unfavourable for those selling last or those small fisheries association without auctions that have to sell in a fishing port other than theirs. Otherwise, according to Fluvià et al. [16], the competition sponsored by downward Dutch auction system falls more on the sellers than the buyers since the buyers know each other and often promote pre-agreed start prices and act as if they were a single buyer, especially if they are few, as occurs in small auctions.

Hence, some fisheries associations have succumbed to being assimilated by monopolistic large market chains, eliminating the auction and selling all catches completely to one unique marketing operator (wholesale), whereas other resist by implementing new marketing initiatives (fish baskets, online marketplace platforms) promoted by fishers or the fisheries associations themselves, or dismantling the fisheries associations to become FPOs or, otherwise, adapting to the system by establishing clusters of value chain promoting a set of alternative and non-market values (through labels) of the product. Values are often lost within larger seafood supply chains but predicated in present-day market-base principles.

As an example of what is ongoing in the Mediterranean and other parts of Europe, our analysis of the wide spectrum of possibilities of seafood marketing systems emerging in Catalonia and Balearic Islands shows how fishery governance systems have to take into account all the socioeconomic and ecologic cycle involving the food system to be effective.

The seafood value chains may produce impacts on ecosystems [49], inasmuch consumers' elections are drivers of fishing strategies [48], as buyers exerting pressures on product requirements (quality, price, environment conservation, health, tradition). Fisheries policy and management have focused on commercial fish stocks, production, and efficiency undermining ecological and social aims. As already stated by some authors, considering fisheries and seafood as part of food system [50,51] instead of just commodity [50] or be seen as natural resources [51] would be an important step to effect change in that direction. Seafood systems, which are complex and flexible, have to be embedded in adaptive co-management plans. Incorporation of food systems into the fisheries governance, specifically co-management systems, would imply to give more visibility to the fishing activity, making the fishing gears and production systems, impacts and sustainable fishing practices known. Consumers usually have little information about production systems, for instance, fishing gears and their impacts of both the small-scale fishing and the mid-size vessels (trawlers and purse seiners).

Sustainability is usually certified through trust relationships established in direct marketing arrangements that connect producers with consumers, although this does not certify that the product is really sustainable or socially fair supporting fishers' livelihoods (owner and crew). The equitable work relations and fair workers' incomes (e.g., crew, seafood processors) are usually not incorporated as part of sustainable fishing plans nor embodied by means of certification schemes in seafood products consumers purchase.

5. Conclusions

From our study, we highlight that the specificities of the seafood market systems and governance institutions require specific attention to be able to place these emerging alternative initiatives, which do not follow single structures nor are they promoted by the same entities. Although the line that distinguishes one type of sale from another is very thin, the goals and purposes are in the end what establishes the difference. Since consumption demands may influence production systems, more attention has to be paid to the food system's complex relations involving both producers and consumers. Therefore, consumption choices to ensure sustainability and fair seafood production and supply can be decisive. In our opinion, the fishery sector's social rules should be properly readjusted to balance cooperation and competition to ensure the fisheries' "moral economy" defined by Pinkerton [52] as (1) a fair price competition for raw fish; (2) fair allocation of fishing opportunities (in the Mediterranean setting, promoting co-management systems); and (3) a fair division of benefits (which we understand as fair and decent working conditions). Setting a minimum fair ex-vessel price at the starting point of the sale (through Dutch auctions or other kinds of sales) would redress the negative perception the fishers have regarding price competition for catches. In the contemporary world context, economic crises, diseases, pandemics, and environmental concerns are drivers that may place consumers' rights to decide what and how to eat at the core of food systems. Therefore, certification schemes can produce more impact in future years together with the increasing diversification of marketing chains to address the market segmentation, especially favouring small-scale fishing, which are probably the fisheries most affected by the market system.

Certification of fish products has to be set up clearly not only to ensure traceability but also to certify that environment and workers' rights (including fair price and working relations) are respected. The online platforms (and TIC in general: mobile apps, phone) are potential direct sale systems to be expanded that could tighten the maritime-urban distance and solve the fishing provisioning to consumers with difficulties of accessing fresh fish. Co-management plans should incorporate the complex food systems as cross-sectorial systems to close the socioeconomic and ecologic fisheries cycle and to ensure sustainability in its more multidimensional approach (environmental, economic and social).

CRediT authorship contribution statement

Sílvia Gómez: Conceptualization, Investigation, Methodology, Data curation, Formal analysis, Writing - original draft, Writing - review and editing, Funding acquisition, Project administration. **Francesc Maynou**: Writing - review and editing, Funding acquisition, Project administration. All authors have read and agreed to the published version of the manuscript.

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Declaration of interest statement

The authors declare no conflicts of interest.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.marpol.2021.104432.

References

[1] J.J. Pascual-Fernandez, C. Pita, H. Josupeit, A. Said, J. Garcia Rodrigues, Markets, distribution and value chains in small-scale fisheries: a special focus on Europe, in: R. Chuenpagdee, S. Jentoft (Eds.), Transdisciplinarity for Small-Scale Fisheries Governance, MARE Publication Series 21, Springer, Switzerland, 2018, pp. 141–162.
[2] R. Froese, H. Winker, G. Coro, N. Demirel, A.C. Tsikliras, D. Dimarchopoulou, G. Scarcella, M. Quaas, M. Matz-Lück, Status and rebuilding of European fisheries, Mar. Policy 93 (2018) 159–170, https://doi.org/10.1016/j.marpol.2018.04.018.
[3] F. Colloca, M. Cardinale, F. Maynou, M. Giannoulaki, G. Scarcella, K. Jenko, J. M. Bellido, F. Fiorentino, Rebuilding Mediterranean fisheries: a new paradigm for ecological sustainability, Fish Fish. 14 (2013) 89–109.
[4] FAO (Food and Agriculture Organization of the United Nations), The State of World Fisheries and Aquaculture. Contributing to Food Security and Nutrition for All, FAO, Rome, 2016, p. 200.
[5] C. Béné, M. Barange, R. Subasinghe, P. Pinstrup-Andersen, G. Merino, G.I. Hemre, M. Williams, Feeding 9 billion by 2050–Putting fish back on the menu, Food Secur 7 (2) (2015) 261–274, https://doi.org/10.1007/s12571-015-0427-z.
[6] FAO, The state of world fisheries and aquaculture 2014, FAO, Rome, 2014, pp. 243.
[7] J. Guillén, F. Natale, N. Carvalho, J. Casey, J. Hofherr, J.-N. Druon, G. Fiore, M. Gibin, A. Zanzi, J. Th Martinsohn, Global seafood consumption footprint, Ambio 48 (2019) 111–122, https://doi.org/10.1007/s13280-018-1060-9.
[8] EUMOFA (European Market Observatory for Fisheries and Aquaculture Products), The EU Fish Market. www.eumofa.eu, 2017 (Accessed 18 December 2019).
[9] B. Basurco, J.E. Carballo, A. Lem, Seafood in Mediterranean countries, in: C. Lacirignola (Dir.) (Ed.), MediTERRA. Logistics and Agri-Food Trade in Medietrranean Countries, CIHEAM, Presses de Sciences Po, Paris, 2014, pp. 173–203.
[10] Informe anual de la industria alimentaria española. Ministerio de Agricultura, Pesca y Alimentación, periodo 2015–2016. www.mapa.gob.es (Accessed 03 January 2020).
[11] Informe anual sobre el consumo de alimentos, Ministerio de Agricultura, Pesca y Alimentación, 2017 www.mapa.gob.es (Accessed 20 November 2019).
[12] T. Dinçer, An overview of the seafood consumption and processing sector in some Mediterranean countries, MedFAR 1 (2018) 23–30.
[13] Catalunya. Generalitat de, Informe de la Indústria, la distribució i el consum agroalimentaris a Catalunya. Departament d'Agricultura, Ramaderia, Pesca i Alimentació, Desembre (2019).
[14] R. Franquesa, Las cofradías en España. Papel económico y cambios estructurales, Quaderns Blaus (15), Catedra d'Estudis Marítims, Palamós, 2005.
[15] S. Raicevich, J.-L. Alegret, K. Frangoudes, O. Giovanardi, T. Fortibuoni, Community-based management of the Mediterranean coastal fisheries: historical reminiscence or the root for new fisheries governance? Reg. Stud. Mar. Sci. 21 (2018) 86–93.
[16] M. Fluvià, A. Garriga, R.R. Torrent, E. Rodríguez-Carámbula, A. Saló, Buyer and seller behavior in fish markets organized as Dutch auctions: evidence from a wholesale fish market in Southern Europe, Fish. Res. 127– 128 (2012) 18–25, https://doi.org/10.1016/j.fishres.2012.04.010.
[17] P. Vasilakopoulos, C.D. Maravelias, G. Tserpes, The alarming decline of Mediterranean fish stocks, Curr. Biol. 24 (2014) 1643–1648.
[18] F. Maynou, Evolution of fishing capacity in a Mediterranean fishery in the first two decades of the 21st c, Ocean Coast. Manag. 192 (2020), 105190, https://doi.org/10.1016/j.ocecoaman.2020.105190.
[19] F. Salladarré, P. Guillotreau, G. Debucquet, G. Lazuech, Some good reasons for buying fish exclusively from community- supported fisheries: the case of Yeu Island in France, Ecol. Econ. 153 (2018) 172–180, https://doi.org/10.1016/j.ecolecon.2018.07.017.
[20] Farnet, FARNET Guide #8: Marketing the local catch, 2014. https://webgate.ec.europa.eu/fpfis/cms/farnet2/library/guide/farnet-guides-1–10_en (Accessed 20 June 2019).
[21] P. Prosperia, J. Kirwanb, D. Mayeb, F. Bartolinia, D. Vergaminia, G. Brunoria, Adaptation strategies of small-scale fisheries within changing market and regulatory conditions in the EU, Mar. Policy 100 (2019) 316–323, https://doi.org/10.1016/j.marpol.2018.12.006.
[22] B. Glaser, A. Strauss, The Discovery of Grounded Theory: Strategies for Qualitative Research, Aldine Transaction, Piscataway, 1967.
[23] N.K. Denzin, Y.S. Lincoln (Eds.), Collecting and Interpreting Qualitative Materials, Sage, London, 2003.
[24] A.E. Bolton, B.A. Dubik, J.S. Stoll, X. Basurto, Describing the diversity of community supported fishery programs in North America, Mar. Policy 66 (2016) 21–29, https://doi.org/10.1016/j.marpol.2016.01.007.
[25] L.M. Campbell, N. Boucquey, J. Stoll, H. Coppola, M.D. Smith, From vegetable box to seafood cooler: applying the community-supported agriculture model to

fisheries, Soc. Nat. Resour. 27 (2013) 88–106, https://doi.org/10.1080/08941920.2013.842276.
[26] A. Brinson, M.-Y. Lee, B. Rountree, Direct marketing strategies: the rise of community supported fishery programs, Mar. Policy 35 (2011) 542–548, https://doi.org/10.1016/j.marpol.2011.01.014.
[27] C.P. DesRivières, R. Chuenpagdee, C. Mather, Reconnecting people, place, and nature: examining alternative food networks in Newfoundland's fisheries, Agric. Food Secur 6 (2017) 33, https://doi.org/10.1186/s40066-017-0112-x.
[28] S.C. Godwina, F.T. Francisa, B.R. Howarda, L. Malpica-Cruza, A.L. Witter, Towards the economic viability of local seafood programs: key features for the financial performance of community supported fisheries, Mar. Policy 81 (2017) 375–380, https://doi.org/10.1016/j.marpol.2017.04.009.
[29] L. McClenachan, B.P. Neal, D. Al-Abdulrazzak, T. Witkin, K. Fisher, J.N. Kittinger, Do community supported fisheries (CSFs) improve sustainability? Fish. Res. 157 (2014) 62–69, https://doi.org/10.1016/j.fishres.2014.03.016.
[30] J.S. Stoll, B.A. Dubik, L.M. Campbell, Local seafood: rethinking the direct marketing paradigm, E&S 20 (2015) art40, https://doi.org/10.5751/ES-07686-200240.
[31] B. Tolley, M. Hall-Arber, Tipping the scale away from privatization and toward community-based fisheries: policy and market alternatives in New England, Mar. Policy 61 (2015) 401–409, https://doi.org/10.1016/j.marpol.2014.11.010.
[32] A. Tregear, Progressing knowledge in alternative and local food networks: critical reflections and a research agenda, J. Rural Stud. 27 (2011) 419–430, https://doi.org/10.1016/j.jrurstud.2011.06.003.
[33] S. Gómez Mestres, M.E. Lien, Recovering food commons in post industrial Europe: cooperation networks in organic food provisioning in Catalonia and Norway, J. Agric. Environ. Ethics 30 (2017) 625–643, https://doi.org/10.1007/s10806-017-9691-6.
[34] FCCUC, Els grups i les cooperatives de consum ecològic a Catalunya. Diagnòstic de la situació i promoció del cooperativisme, 2010 www.https://xarxanet.org/sites/default/files/Diagnosi_grups_de_consum_Catalunya.pdf (Accessed 18 May 2015).
[35] M. Badal, R. Binimelis, G. Gamboa, M. Heras, G. Tendero, Arran de terra: indicadors participatius de sobirania alimentària a Catalunya. Associació Entrepobles i Institut d'Economia Ecològica i Ecologia Política, Associació Entrepobles and Institut d'Economia Ecològica i Ecologia Política, El Tinter, Barcelona, 2011.
[36] R. Espel, Cooperatives de Consum Agroecològic de Plataforma El Paper de Les Tecnologies de La Informació I La Comunicació En El Consum Cooperatiu de Productes Agroecològics, UOC, 2018.
[37] J. Lleonart, M. Demestre, P. Martín, J. Rodón, S. Sainz-Trápaga, P. Sánchez, I. Segarra, S. Tudela, 2014. The co-management of the sand eel fishery of Catalonia (NW Mediterranean): the story of a process. In: Lleonart J., Maynou F. (eds), The Ecosystem Approach to Fisheries in the Mediterranean and Black Seas, Sci. Mar. 78S1: 87–93. doi: http://dx.doi.org/10.3989/scimar.04027.25A.
[38] J.L.L. Alegret, A. Garrido, Historia del puerto pesquero de Palamós: migraciones, asociacionismo y desarrollo, Areas Rev. Int. Cienc. Soc. 27 (2008) 27–40.
[39] J.L.L. Alegret, Ancient institutions confronting change: the Catalan fishermen's cofradías, in: K. Crean, D. Symes, D (Eds.), Fisheries Management in Crisis, Oxford, 1996, pp. 92–96.
[40] J. Manrique, H.H. Jensen, Spanish household demand for seafood, J. Agric. Econ. 52 (3) (2001) 23–37.
[41] G. Ocaña, ¿Cómo vamos en consumo de pescado? Distrib. Y. Consumo 4 (2018) 31–41.
[42] T. Witkin, S.T.M. Dissanayake, L. McClenachan, Opportunities and barriers for fisheries diversification: consumer choice in New England, Fish. Res. 168 (2015) 56–62, https://doi.org/10.1016/j.fishres.2015.03.019.
[43] M. Stancheva, A survey of fish consumption in Bulgaria. International symposium on animal science (isas). 22nd – 23rd November 2018, Faculty of Agriculture, Belgrade-Zemun, Serbia.
[44] D. Carlucci, G. Nocella, B. De Devitiis, R. Viscecchia, F. Bimbo, G. Nardone, Consumer purchasing behaviour towards fish and seafood products. patterns and insights from a sample of international studies, Appetite 84 (2015) 212–227, https://doi.org/10.1016/j.appet.2014.10.008.
[45] A. Trichopoulou, A. Naska, T. Costacou, Disparities in food habits across Europe, Proc. Nutr. Soc. 61 (2002) 553–558, https://doi.org/10.1079/PNS2002188.
[46] W.J. Boonstraa, M. Valmana, E. Björkvika, A sea of many colours - how relevant is Blue Growth for capture fisheries in the Global North, and vice versa? Mar. Policy 87 (2018) 340–349, https://doi.org/10.1016/j.marpol.2017.09.007.
[47] S. Jentoft, B.P. Finstad, B.P, Building fisheries institutions through collective action in Norway, Marit. Stud. 17 (2017) 13–25, https://doi.org/10.1007/s40152-018-0088-6.
[48] G. Malorgio, L. Mulazzani, P. Pugliese, C. Rota, C. Zanasi, M. Zuccaro, The role of small-scale fisheries in Mediterranean coastal communities. an analytical framework for their development, N. Medit. 2 (2017) 19–26.
[49] B. Tolley, M. Hall-Arber, Tipping the scale a way from privatization and toward community-based fisheries: policy and market alternatives in New England, Mar. Policy 61 (2015) 401–409, https://doi.org/10.1016/j.marpol.2014.11.010.
[50] C.H. Nelson, K. Lowitt, M. Nagy, D. Bavington, Future research approaches to encourage small-scale fisheries in the local food movement, J. Agric. Food Syst. Commun. Dev. 3 (2013) 177–181, https://doi.org/10.5304/jafscd.2013.034.020.
[51] J. Olson, P.M. Clay, P. Pinto da Silva, Putting the seafood in sustainable food systems, Mar. Policy 43 (2014) 104–111, https://doi.org/10.1016/j.marpol.2013.05.001.
[52] E. Pinkerton, The role of moral economy in two British Columbia fisheries: confronting neoliberal policies, Mar. Policy 61 (2015) 410–419, https://doi.org/10.1016/j.marpol.2015.04.0090308-597X.