Social and Economic Aspects of Mediterranean Small-Scale Fisheries: a snapshot of three fishing communities

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Executive Summary

This socio-economic snapshot of Mediterranean fisheries highlights the heterogeneous realities that exist across the Mediterranean, and the need to have tailored investigations which are aligned to fit the different contexts that shape the economic dynamics of SSF. The collection of data on the fisheries sector, especially the small-scale segment, often suffers from an insufficient capacity to collect and process socio-economic data which is of a complex nature. Fisheries are complex systems with different visible and underlying components that compose the sector. The socio-economics of a sector go beyond the mere economic-related calculations, but are indeed made up of very intricate relationships between producers and markets, kinship

relations, trading patterns, stocks and consumer patterns, as well as community norms and values which determine how SSF function. On top of these are non-controllable natural fluctuations related to fish stocks, with significant climate change related impacts. All of these factors, which refer to biological, operational and wider market concerns, as well as possible economic consequences, require that management and governance of SSF are adapted accordingly.

Through this research, the aim is not only to provide new knowledge about the SSF in these areas, but to also provide a new measuring instrument which can be upscaled and replicated for SSF in the Mediterranean and beyond. The socio-economic study and the indicators quantified here present innovative statistics that could be of use beneficial to obtain a better picture of the socioeconomic context of SSF, so they support the conservation and management of fisheries, as they provide detailed descriptors of the human element in fisheries beyond the demographic variables, including economic revenues and costs, work dedication, livelihood expectations that determine the very future of the SSF in the Mediterranean.

CHAPTER 01

Introduction

SOCIAL AND ECONOMIC ASPECTS OF MEDITERRANEAN SMALL-SCALE FISHERIES: A SNAPSHOT OF THREE FISHING COMMUNITIES

Introduction

Small-scale fisheries play an important role in providing income and employment to a large number of fishers and their families. In the Mediterranean Sea, small-scale fisheries represent over 84% of the total fishing fleet and employ nearly 62% of the total workforce on board fishing vessels (FAO 2020). Here, SSF are considered as small fishing vessels up to 12 m, and polyvalent using a wide range of fishing gears adapted to seasonality (Battaglia et al 2010). They are normally small-to-medium enterprises (SMEs), investing relatively low capital, and mostly are family-owned, with the owners directly involved in the fishing activity (Guyader et al 2013).

The investment of small-scale fisheries is determined by the fisher's dependency on the fishing activity, and how it contributes to their livelihood, and also the future perspectives they hold on their position in the fishery. In some cases, fisheries comprise the full-time employment for vessel owners, while for others fishing offers a supplementary income to their main jobs. The diversity that constitutes the fishing sector requires in-depth understanding, especially to inform decisions and policies for fisheries. Social and economic sciences provide an important baseline to understand the various angles of fisheries socio-economic systems, including the economic behaviour and performance of the fleet, the socio-economic wellbeing of the fishing sector, the role of gender, as well as the role of human, social, and economic capital in determining one's position in the sector. Small-scale fisheries bring an interestingly complex scenario which requires tailored attention that digs into the depth of such heterogeneity.

In an endeavour to provide such detailed investigative tools for heterogeneous fishing communities, the LIFE team has implemented a socio-economic survey to test such an approach and provide a snapshot of the socio-economic situation in three fishing communities in the Mediterranean namely Malta, Pantelleria in Italy and Cabo de Gata in Spain. The study, conducted between 2019 and 2020, looked into the socio-economic conditions of a number of fishers including their livelihood, way of life, and perception of the fishing sector. Data were collected in terms of demography, structure of enterprises, income generation, fishing related costs, household income and dependency from fishing, access to resources (quotas) and markets, the role of women, literacy rates, crew engagement, working hours (including distribution across pre and postharvest activities), and current and future trajectory of the fishing enterprise, among others.

This socio-economic exercise also seeks to inform existing data collection frameworks, including the EU Data Collection - Multi-annual Plan (DC-MAP), by providing a wider view of data through which the monitoring of the socio-economic evolution of SSF, and the impact assessment of conservation measures could be enhanced. Currently social data

about fisheries is collected every three years, and encompasses mostly demographic data (Table 1), which although important, is not sufficient to explain the finer detail needed for countries to conduct in-depth analysis of the situation in their countries.

While this socio-economic study has pointed out fundamental elements about the socio-economic realities of SSF, future studies can also look into the level of vulnerability and viability, such as economic issues related to uncertain income and no savings, problems related to debt and lack of market power, due to the dependence on fishers on local middlemen who often dictate the price, and the lack of alternative sources of income.

Type of Dataset	Variables collected
Biological	Annual data for 'sex-ratio', 'maturity' and 'fecundity' for stocks; data on stocks in marine regions under regional fisheries management organisations (RFMOs); and for species monitored under protection programmes
Fishing vessel activity (for biological data)	Annual data for 'Gear groups', 'Gear Type', 'Target assemblage', 'length of boat' and mesh size or selectivity,
Social	Data collected every three years for 'Gender', 'Age', 'Education', 'Employment type', 'Nationality'
Economic	'Income', 'labour costs', 'energy costs', 'capital value', 'repair and maintenance costs', 'other costs', 'subsidies', 'investments', 'financial position', 'employment'
Fishing vessel activity for economics	'Fleet', 'fishing effort', 'days at sea', 'production value', 'landed value', 'value per species'
Ecosystem and biological impact	Impact by fisheries on ecosystems and species such as 'non-commercial species' and 'marine habitats

Table 1: Data collection as collected under DC-MAPSource: Said and Trouillet 2020. https://link.springer.com/article/10.1007/s40152-020-00178-y/tables/1

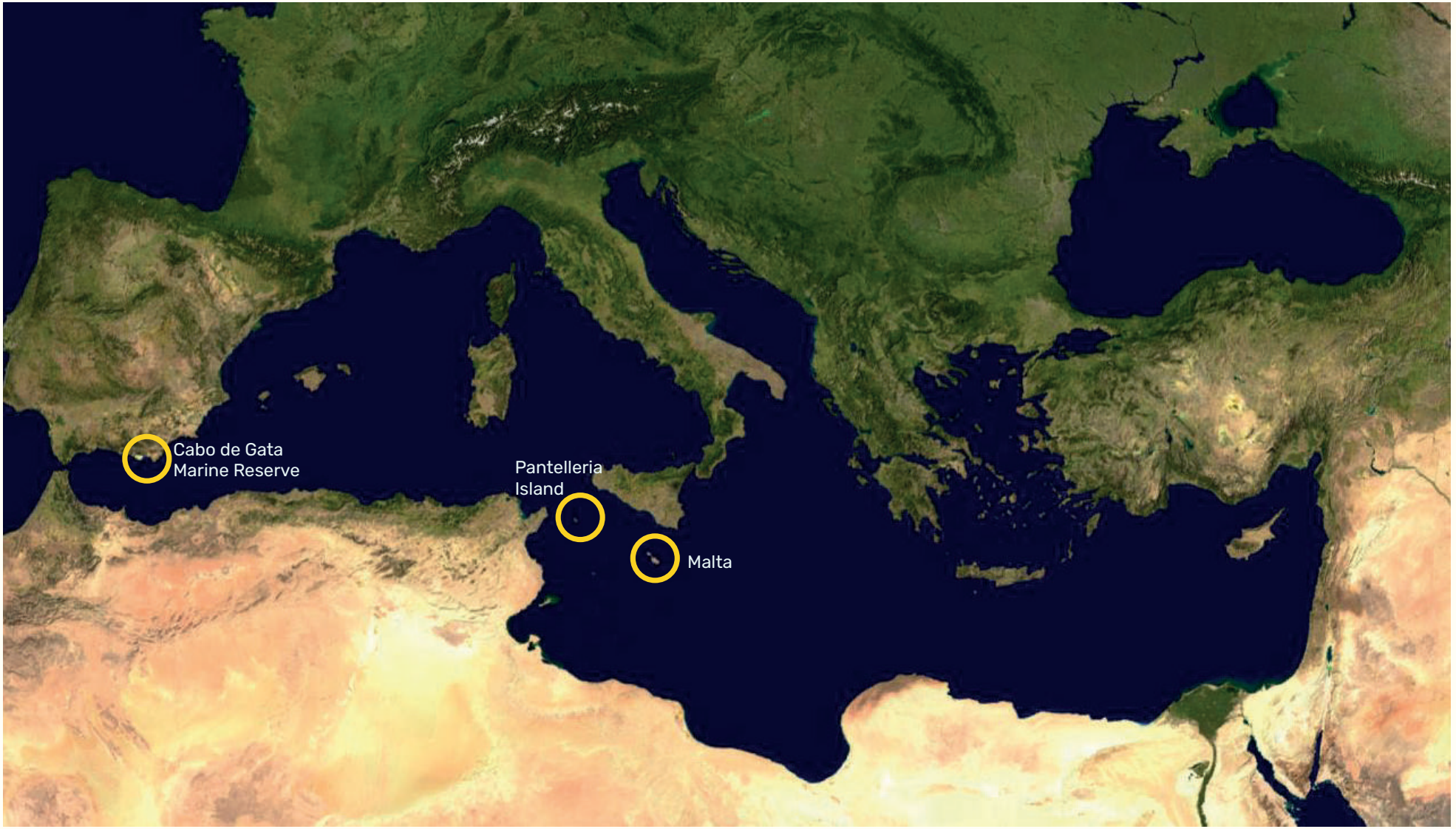
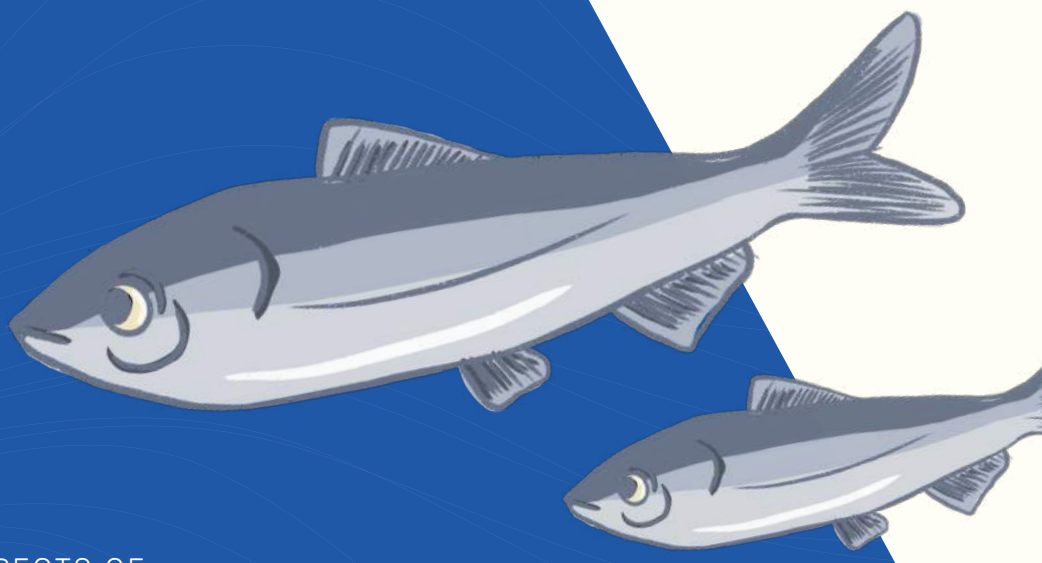


Figure 1: Location of the three study areas, geographical scope and coverage of the study

CHAPTER 02

The Context and Objectives of the Study



2.1. The small-scale fishery sector

Small-scale fisheries remain major players in a number of Mediterranean countries, owing to the multiple benefits they provide to communities in terms of jobs, revenue and provision of fish. According to the recent statistics compiled in the FAO (2020), Mediterranean SSF are responsible for:

- 71 400 vessels (83 percent of the total fleet)
- 127 000 people (57 percent of total employment)
- USD 1.04 billion (29 percent of total revenue)
- 175 000 tonnes (15 percent of total catch)

Despite being leaders in terms of vessels and employment, SSF share of total catch (15%) and revenue (29%) indicates a lack of evenness in the distribution of economic benefits from Mediterranean fisheries. The average annual remuneration of SSF in the Med is USD4868, which is less than half earned by the industrial counterpart fishers (FAO 2020). The lack of profitability has been also reported by the European Scientific, Technical and Economic Committee for Fisheries as a situation that affects all European SSF not just those hailing from the Mediterranean (STECF 2019). While such datasets provide a generic overview of the larger-scale situation, a closer look at the profitability and concomitant viability of the small-scale sector is necessary to comprehend the finer detail at the local and port level, which is the main scope of this study.

2.2. The purpose of the study

The main objective of the study is to enlighten the socio-economic aspects that characterize the small-scale fishery sector in Mediterranean areas. The focus is anchored on the study of regional and sub-regional areas to provide a snapshot of analysis useful for decision-making related to concerns of SSF

in the specific areas studied. Through this study, we provide a widened perspective on what are understudied SSF characteristics through multiple questions which are replicable and would thus enable upscaling of the study elsewhere. Through such an investigative mechanism, we believe that SSF realities can be mobilized to the forefront and provide policymakers with a more informed approach to better align to the context-based scenarios of different fishing communities.

Widened Perspective

Provide baseline information about the social and economic attributes that characterize the sector in the particular sites studied.

Replicable Methods

Identify and investigate research questions and variables that encompass a wider perspective of the socio-economic conditions of small-scale, with the aim of developing a methodology which can be upscaled and replicated.

Informing Policy

Provide policy makers with a fine-scale analysis of the sector to assist in the development of sector specific policies and regulations.

CHAPTER 03

Methodology

SOCIAL AND ECONOMIC ASPECTS OF MEDITERRANEAN SMALL-SCALE FISHERIES: A SNAPSHOT OF THREE FISHING COMMUNITIES

Phase 1: Review of existing literature

The team has performed a desk-based review of the socio-economic status of Mediterranean SSF through analysis of scientific papers, reports and grey literature, to identify available evidence and data gaps. This exercise served as a basis for the design and compilation of the questionnaire tool, which was used as the main data collection mechanism for the face-to-face interviews conducted in the 3 case study areas:

1) Italy: Pantelleria Island, Sicily
2) Malta: Marsaxlokk, St Paul's Bay, Mgarr Gozo
3) Spain: Marine Reserve of Cabo de Gata

Existing published data, including national reports and statistics were used to determine the sample size of the questionnaires to be conducted in the different ports. The questionnaire variables were determined by the state-of-the-art literature on the topic, as gathered from relevant scientific papers published in peer-reviewed scientific journals.

Phase 2: Small-scale fishers interviews in three sites studies

A structured questionnaire has been designed in order to gather relevant socio-economic information. The questionnaire (Annex 1) was composed by closed-ended and open-ended questions, to collect both quantitative and qualitative data. These were conducted in the fishing ports to get a snapshot of the socio-economic realities around the different study areas coastline. The questionnaires were administered through face-to-face interviews with fishers, using convenience sampling. This mode of sampling is considered to be a type of non-probability sampling that requires the collection of data from members of the population that are available. This method was the most ideal given that interviewers did not have access to a list of fishers' contact details, predomi-

nantly due to GDPR matters, thus derailing the possibility of implementing a fully stratified sampling system. Nonetheless, interviewers strived to conduct a representative sample of active vessels belonging to small-scale fisheries operating in the coastal waters. The sample is representative of the local fleet taking into account the respective fishing port, the type of fishing gear and also the exploited resource and the target species. The samples, however, do not provide a generic picture of the socio-economic situation of the entire fishing sector of the respective countries, but are focused on the representation of fishers hailing from the fishing ports investigated. In the case of Malta, the sample represents a 50% of the total small-scale fleet in the respective ports. In the case of Pantelleria the sample, even if a small one, represents 70-80% of the total number of fishers inhabiting the island. In the case of Spain, the area studied is the Marine Reserve of Cabo de Gata, where a total of 32 small scale fishers' fish, 31% of which were interviewed for this study.

The themes addressed by the questionnaire encompass the following, which tried to cover deeper information variables that all together allow the authors of the Report to capture a more complete picture of the socioeconomic context of the studied small-scale fishing communities:

1. Demography,
2. Boat ownership and characteristics,
3. Structure of enterprise and crew,
4. Fishing as a source of living (including average turnover and costs of fishing enterprises),
5. Knowledge of EU Fisheries Funds,
6. Fisher's vision and the perception of future prospects.

CHAPTER 04

Malta (Maltese Islands)

SOCIAL AND ECONOMIC ASPECTS OF MEDITERRANEAN SMALL-SCALE FISHERIES: A SNAPSHOT OF THREE FISHING COMMUNITIES

4.1. Introduction of the study area: Marsaxlokk, St Paul's Bay, Mgarr Gozo Malta

The fishing sector in Malta is composed of over 800 vessels, 90% of which are of a small-scale nature, with fisher's engaging in artisanal fishing activities including long-lines, trammel nets, pots and traps, and other fishing gears.

Figure 2: Location of the Maltese islands in the Mediterranean.

As indicated in the table 2, over half of the fleet is composed of vessels of less than 6 metres in length, and most of the vessels registered across the fleet belong to the part-time segment (n=463). Altogether small-scale fishers' contribution to the national GDP is around 0.2%. Due to this insignificant direct contribution to the national economy, the small-scale fisheries sector is less important economically than it is socially. It is important socially and culturally for (i) the supply of local and fresh fish to the national population, and traditional Maltese restaurants; (ii) the reproduction of the social fabric

that solidifies community networks and stability; and (iii) the creation of an emblematic cultural representation of fishing sought by tourists, especially in the main fishing villages where traditional craftsmanship of vessel-and-gear making is still alive and vibrant (Said 2017). Fishing, in the Maltese islands, has always formed an important socio-economic component for a number of coastal communities, and along with agriculture in the past it played a central role in rural household economies. With the increase of job opportunities in manufacturing and tertiary industries, dependency on fishing started decreasing. Today, fishing is done on a commercial basis either as a full-time or part-time job. In general, full-time vessels encompass fishers whose main income is earned from fishing whilst part-time vessels include fishers who engage in commercial fishing for a supplementary income.

Length of vessel	MFA	MFB
0-5.99 metres	111	295
6-11.99 metres	204	168
12metres+	62	0

Table 2: Full-time (MFA) and part-time (MFB) vessels registered in Malta.

4.2. Results

4.2.1. Demography, Boat Ownership and Characteristics

41 questionnaires were administered in Malta and Gozo's major fishing ports, specifically Marsaxlokk in the Southern part of the island (n=19), St Paul's Bay towards the North (n=17,) and in Mgarr Gozo (n=5).

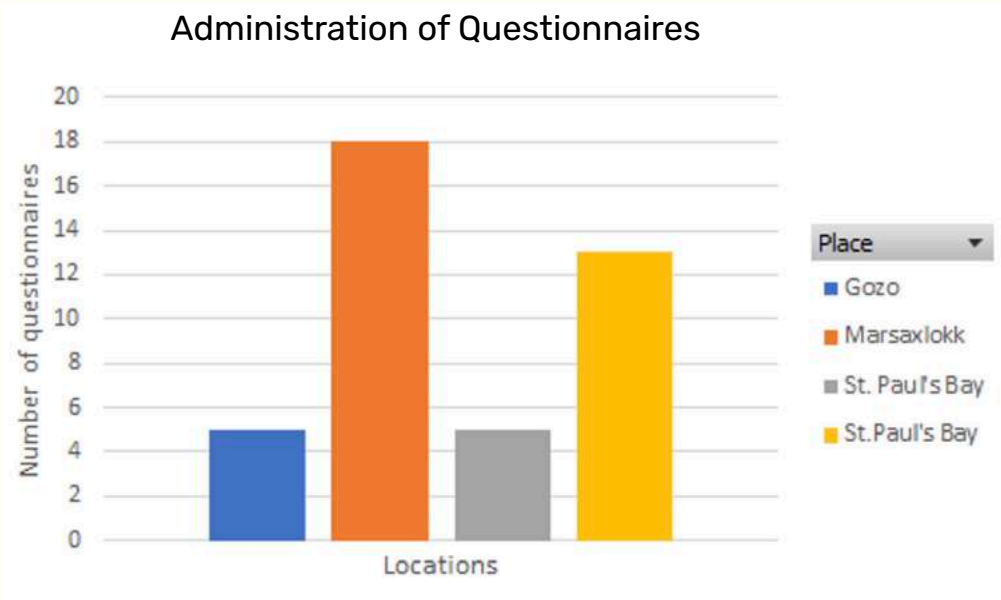


Figure 3: Administration of questionnaires in the Maltese study area (our elaboration).

The sample is composed of only men, generally deriving from the fact that women represent less than 5% of the fishing sector in Malta. In terms of age cohorts interviewed in this study, the composition is as follows: 2% of fishers are under the age of 35, 9% are between 35 and 45 years, 35% belong to the 45-55 age group, 31% to the 55-65 age group, and the remaining 24% belong to the over-65 group. This distribution also indicates the ageing population of the fishing sector, and the lack of recruitment of the younger generation. It is interesting to note that although women do not feature in the official demographics related to vessel ownership, their role is central to the operations and activities onshore, including retail and paperwork.

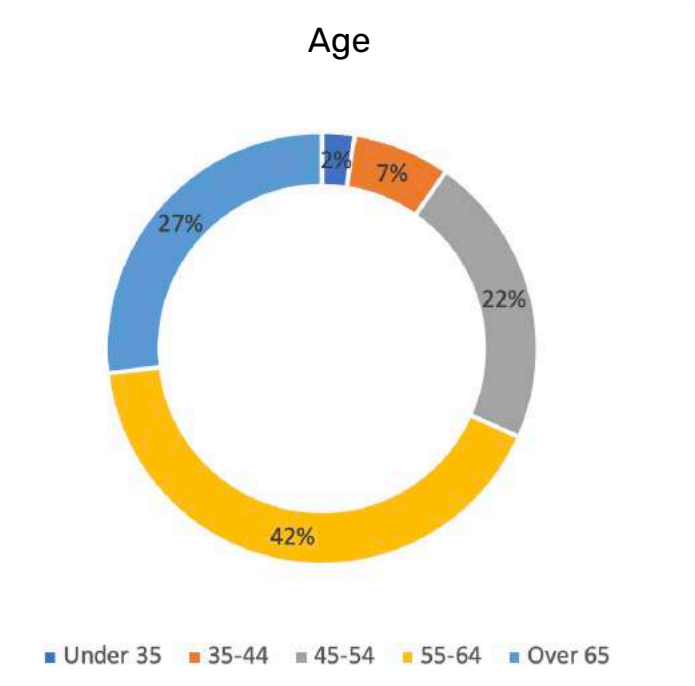


Figure 4: Age of the boat owner in the Maltese study area (our elaboration)

The survey also aims to analyse the educational level of the interviewees. As can be seen from the following graph (Figure 5), 40% of the latter stated that they had only completed primary school, compared to a wide majority of 81% who instead completed the secondary level of education. Only 2% of fishers said they had completed university.

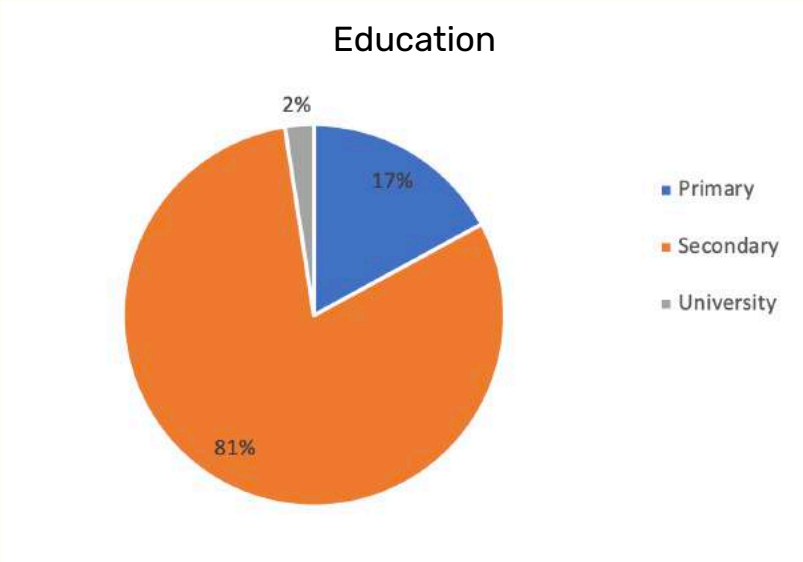


Figure 5: Education levels of the small-scale fishers interviewed in Maltese study area (our elaboration)

On the other hand, most of the interviewed fishers (98%), hail from families which have been engaged in the sector for generations, thus making it a natural transition for them to take over the family business. The fact that fishing has been a major activity for many families due to the self-sufficient households, there are still trends of families where fishers have a part-time vessel to catch some fish for the family and trade the rest. It is however interesting to note that despite the ageing nature of the sector, it can still be attractive to those who do not have ancestral links in the fishery (2%).

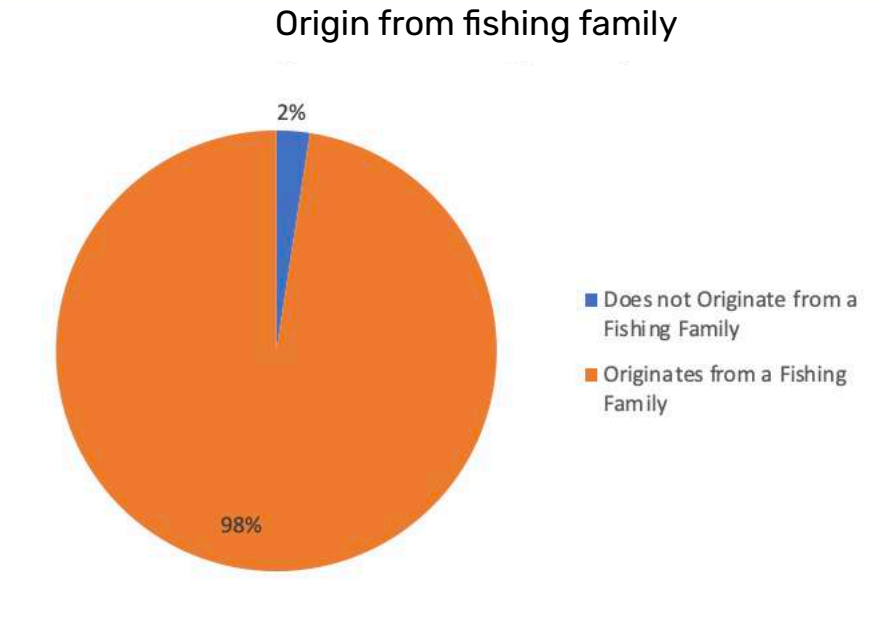


Figure 6: Origin of the small-scale fishers interviewed in Maltese study area (our elaboration)

The characteristics of the vessels owned by the fishers interviewed here indicates two important factors (i) 91% of the fishers own a vessel which is smaller than 12 metres, which is considered small-scale and artisanal, and (ii) multiple ownership by 26% of the sampled population. The latter own two vessels to conduct coastal fisheries (trammel nets, gill nets, long-lines), especially in winter, with the smaller vessel, and sail offshore for pelagic fish (swordfish and dolphinfish). Equally important is the fact that nearly half of the vessels are older than 40 years, with only 2% of the fishers own a vessel which has been operational for the past 10 years. This

further indicates that the fishing sector is composed of many enterprises, the operations of which were conducted by the same vessels owned by the ancestors. Some of the fishers explained that their wooden boats require annual maintenance, and it would be more economically efficient to shift to fibre-glass boats. However, their attachment to the family vessels passed to them through their forefathers, and the fact that such wooden traditional vessels are no longer built, has been the main reason for maintaining their use. This characteristic shows that both social and cultural elements can influence and determine the 'progressive' investment associated with fisheries, notably the preference of wooden over more efficient fibre-glass vessels.

In terms of fishing activity, all the boats considered possess multiple licenses for trammel nets, longlines, gillnets, and bottom longlines. Fishing with small-scale artisanal fishing gear is both versatile and dynamic as fishers shift the gear even on a daily basis. A fisher could be deploying a bottom-long line to target demersal species and in the process might come across a nice shoal of small pelagics such as mackerel. This would entice the fisher to try and target mackerel the next fishing day. This is very typical of the polyvalence strategy employed by fishers who aim at increasing their economic returns through such adaptive measures. This also serves as a safety net for low catch days which fishers experience.

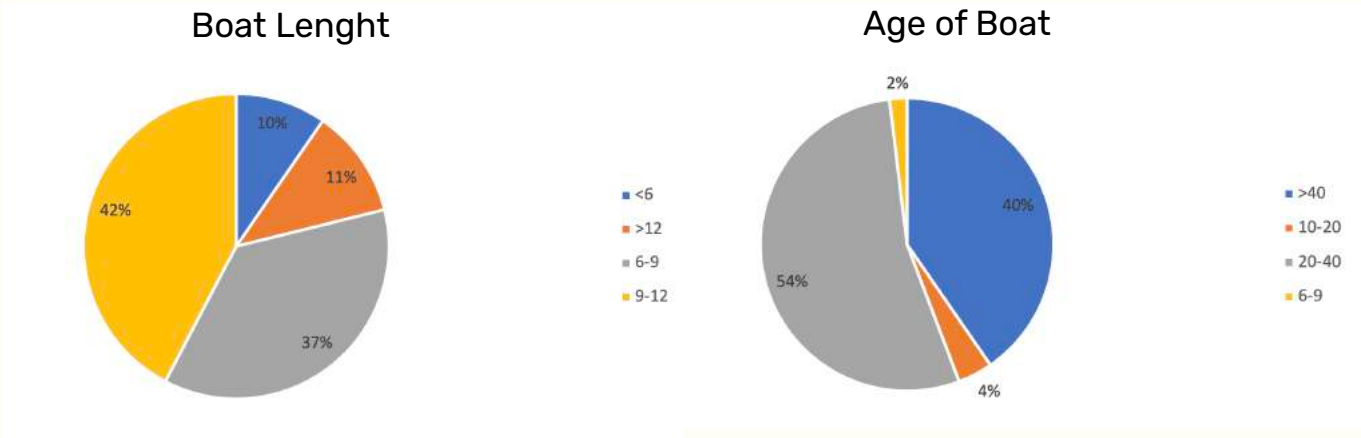


Figure 7: Boat length and Age of the boat of the small-scale fishers interviewed in Maltese study area (our elaboration)

Bluefin tuna and swordfish are two of the most profitable fisheries in Malta. Both are regulated by a national total allowable catch known as quota, however, while tuna is assigned to a number of fishers through individual transferable quotas; swordfish remains on an open-access to those who hold a swordfish permit. Only 2 of those interviewed have a BFT quota (one has 4 tonnes and the other 1 tonne), while all except 5 hold a swordfish license, and are allowed to land bluefin tuna as bycatch, when this is open by the government.

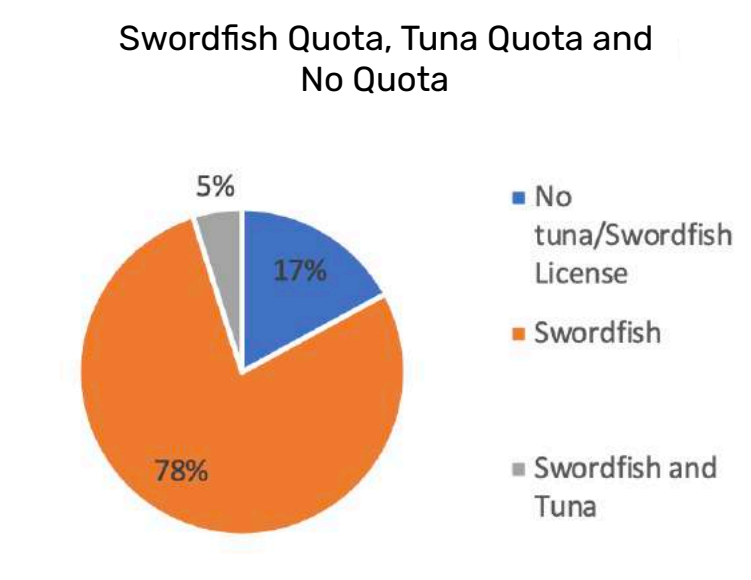


Figure 8: Percentage of small-scale fishers interviewed in Maltese study area that have access to Swordfish or tuna quota (our elaboration)

4.2.2. Structure of the fishing enterprise and its crew members

Almost all the fishers interviewed stated that their business is owned and operated as a family business. 44% of them stated that they are not the sole owner and that they share the business with a partner. For 9 operators, this is their spouse. Co-ownership with the spouse is not a matter of operations of the vessel, but mostly as a result of matrimonial law where family businesses are automatically owned by the spouse of the owner. In terms of fishing and vessel operation, some fishers work 'on their own' while others operate the vessel through deckhands. The latter compose 59% of the interviewed sample, and the number of crew engaged depends on

the type of fishery, however, it normally ranges from 1 crew member to a maximum of 4. It is interesting to note that the crew engaged on Maltese boats is quite international, composed of Maltese (48%), Indonesian (7%), Egyptian (2%), Philippines (2%) and Tunisian (2%). All of the crew members are males, most of them hold up to secondary education (73%), and hailing from different age cohorts, with the predominant groups being those between 16 and 35, and 51-65 years.

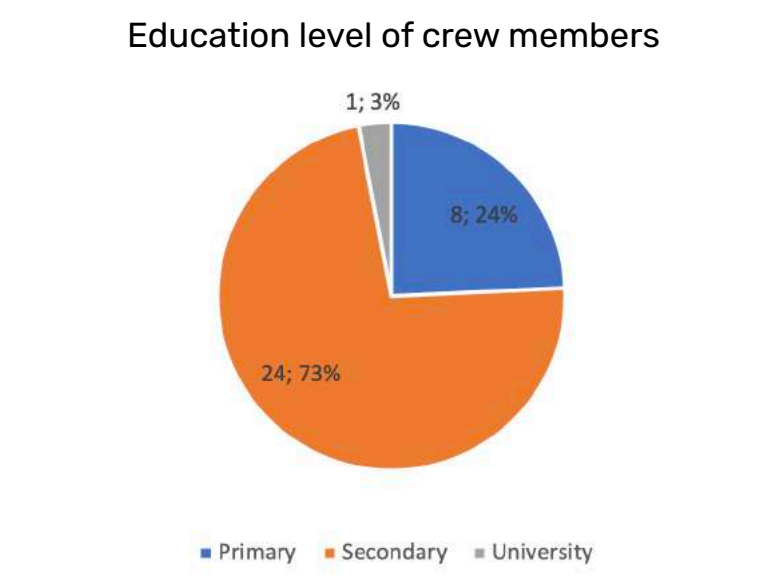


Figure 9: Education level of crew members of the small-scale fishing boats in Maltese study area (our elaboration)

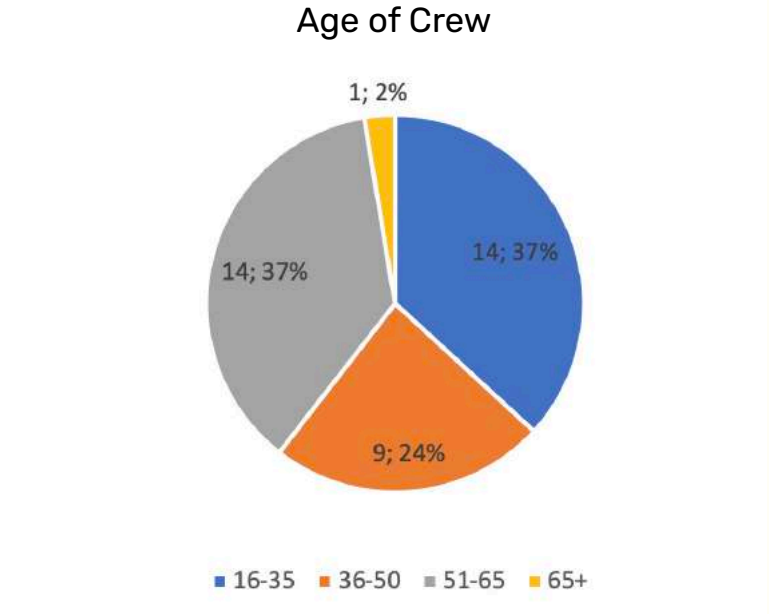


Figure 10: Age of the crew of the small-scale fishing boats in Maltese study area (our elaboration)

The interviewees stated that their crew members are mainly family who assist in the fishing activity especially in high seasons. For dolphinfish, for example each vessel requires between 2 and 4 fishers as the fishery involves the need to deploy and haul a net in a synchronized way that only experienced fishers can do. In actual fact, 42% of the fisher's recruit workforce from the family pool (cousins, siblings) who they know are sufficiently adapted to partake in the fishery. Those engaging foreigners (12%) and local workforce do so either as they do not have a pool of recruits in the family to assist, or have trained their crewmembers in a way that ensures that the job gets done right. In addition, some of these workers are hired under seasonal contracts and others have a full-time engagement. In all cases, the remuneration provides for the disbursement of some shares of the company capital and, as for the duties performed by the crew, these are mainly fishing, repairing the boat, and selling fish.

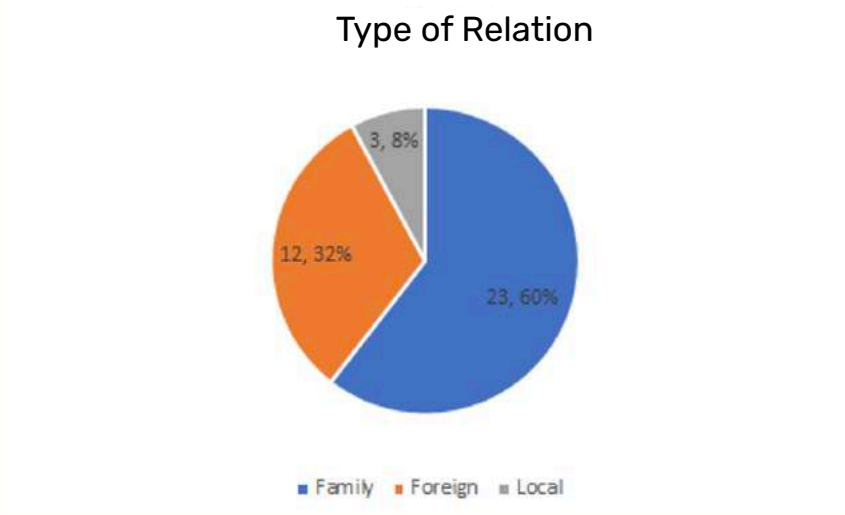


Figure 11: Type of relation of the crew with the small-scale fishing boat owner in Maltese study area (our elaboration)

The work done in preparation of the fishing activity incorporates different pre-harvesting and post-harvesting activities which in this study were classified as follows: maintenance and repair, selling fish, preparing the boat, fishing activities, etc. Based on what emerged from the interviews carried out with fishers (Figure 12), it transpired that hours dedicated for the different activities differed amongst fishers, however most of the activities took most of the fishers less than 10 hours per week. Most of the hours invested are in repair and maintenance of fishing gear, and in fish sales, whereas

boat preparation and paperwork carry less man hours. On bad weather days, most fishers utilize the time to mend the gear and prepare new ones. This activity includes buying the material for the gear, and the actual hours spent mending net holes or sorting long-lines to be ready for the next trip. On the other hand, fish sales require fishers to go to the fish market in the morning at 3am, hence taking approximately 4 hours daily for the whole process. If fishers sell directly to consumers, they need to dedicate time to contact and deliver the fish, explaining why this activity occupies an important part of the post-harvesting efforts allocated by the fishers and their families. Paperwork is many-a-time done during the landing or selling activity; hence fishers do not need to dedicate a lot of specific time for paperwork, albeit for the necessary profit-and-loss forms which they put together for their monthly accounts. This work is also done by the women who are responsible for onshore activities.

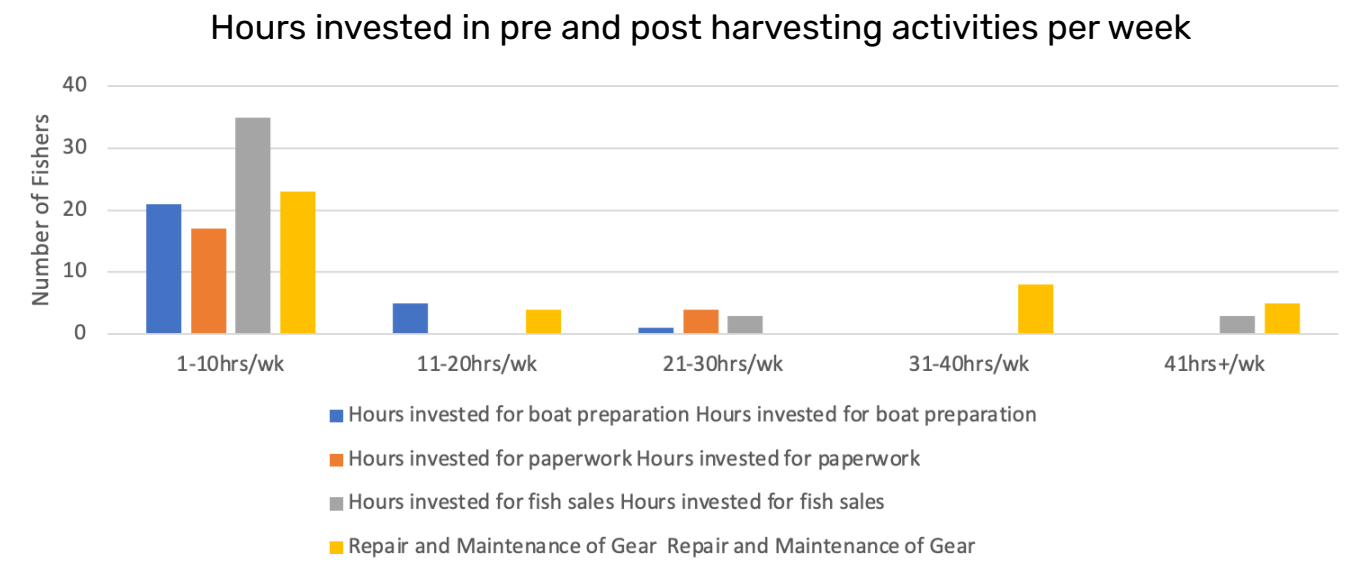


Figure 12: Hours invested by fishers in pre- and post-harvesting activities every week

4.2.3 Fishing as a source of living

As previously mentioned, 100% of the fishers interviewed stated that their boat is used exclusively for fishing activities, but 37% of them are also engaged in other income activities or are on state pension. In most cases, fishing is the main source of income and the fishing days stated amount to a total of 150-300 days of activity, however, for those who consider

fishing on a part-time basis, fishing provides less income than the primary job. Other sources of income include working as government officials as operators, in retail, renting property, security, technician and watchman. During the conversation, some of the fishers explained that although they would prefer to have fishing as the main livelihood, it has become difficult unless you are ready to invest in bigger boats and quotas. Moreover, they explained that full-time employment with a fixed salary provides financial security for the household. Many of these fishers in fact net around €5000 or less per year from fishing. One of the salient points of the survey carried out concerns the average annual turnover obtained from the activity examined. Almost 50% of fishers stated that they obtain revenues between €5,000 and €10,000 a year, while the remaining half of them stated that they obtained average revenues just above €5,000 a year and between €10,000 and €20,000.

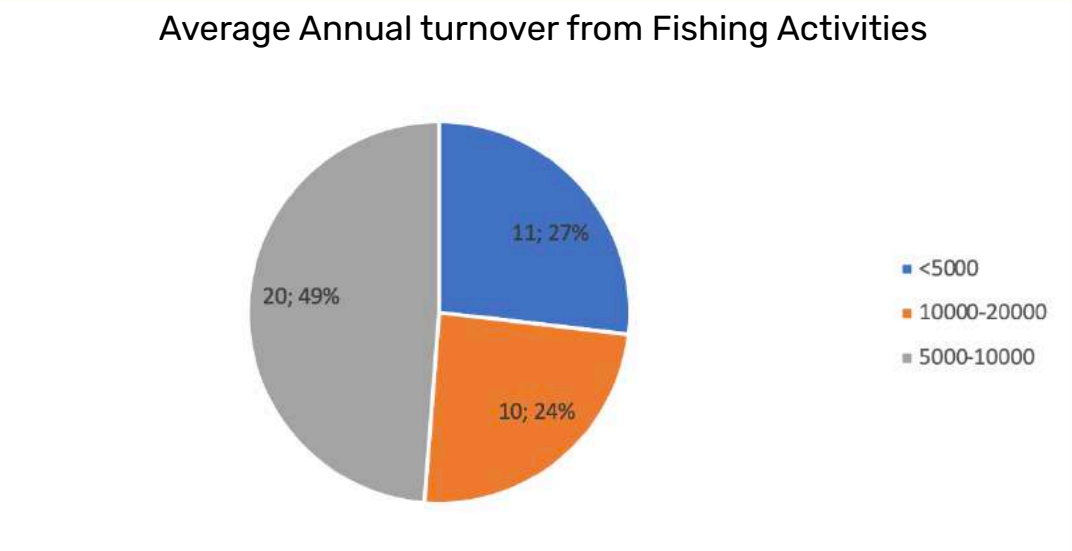


Figure 13: Average annual turnover from fishing activities in the Maltese Study Area (our elaboration)

In fact, some of the fishers explain that the primary job was also important to allow them to keep fishing, meaning that some fishers were also doing some fishing activity at a loss. This element indicates a very important persisting trait in the small-scale sector, where fishers are unable to loosen the ties completely from fishing. This is of course possible if fishers are able to dedicate income from their primary non-fishing job as a safety net just in case the fishing season goes bad, and thus

to cover costs incurred in this regard. Fishing brings a lot of costs with it: around 30% of the expenses incurred are attributable to the work done, while about 15% is spent on fuel and the remaining percentage concerns maintenance costs for the boat, administrative costs, and any other expenses. According to the fisher's declarations, only 70% of them are able to cover all the expenses related to fishing with the revenues gained, while the remaining 30% states that the average annual turnover is insufficient to meet the necessary expenses. The percentages also highlight the increase (reported by 36% of fishers) and decrease (remaining 40%) in profits over the last 10 years, indicating that the fishing sector is undergoing a slight decline.

The revenues offered by carrying out this activity, net of the costs incurred for the production factors, are generally not enough even to meet the needs of families. Only 13 out of 41 fishers state that they are able to fully cover the family unit's expenses when it is a medium-size group made up of a maximum of 3 people. The remainder of them state that they need other income to meet family expenses and that they have resorted to bank loans to meet the necessary investments, such as purchasing a house. The support of the spouse for households is important, with 73% of the interviewed sample claiming that their spouse is also engaged in employment.

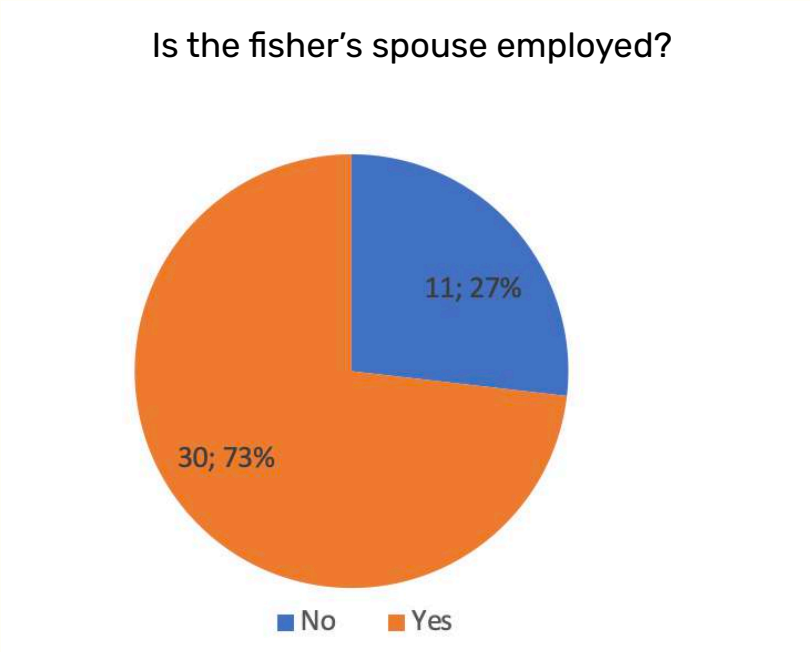


Figure 14: Employment of fisher's spouses in the Maltese study area (our elaboration)

All the fishers interviewed are said to invest annually in boats. They refer to maintenance, repair, and modernisation. Specifically, all 41 fishers stated that they carry out investments on maintenance and repair and 31 fishers stated that they invest in modern machinery. Other investments included new depth finders, new pumps, painting of vessel, boat wood restoration and engine investments. Investments for most fishers happen once a year, although some also receive government assistance for investments.

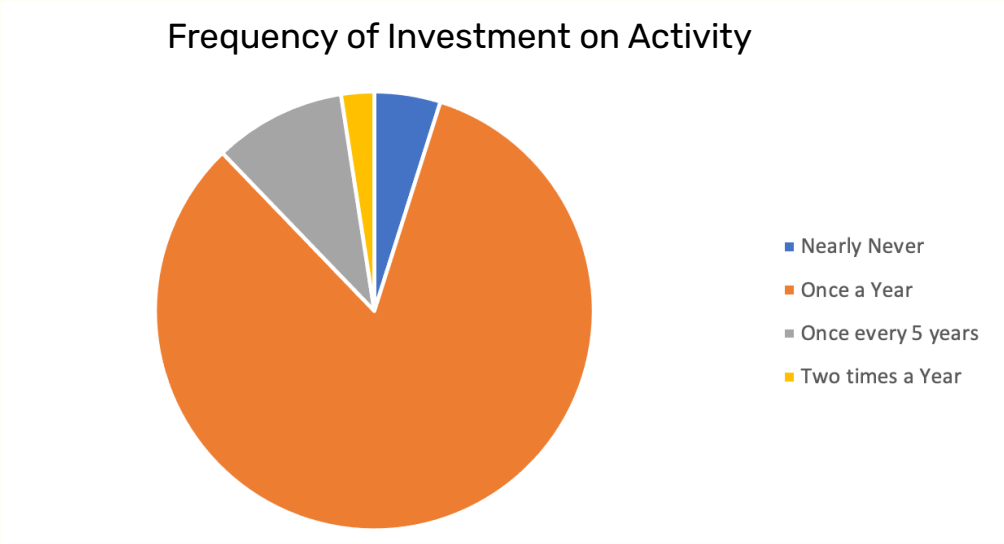


Figure 15: Frequency of Investment on the fishing activity in the Maltese study area (our elaboration)

4.2.4 EU and national funding schemes

The socio-economic analysis carried out revealed a lack of knowledge of the European maritime and fishing systems, as well as of the measures supported by the European Maritime and Fisheries Fund's 2014-2020 programme. A number of fishers who own wooden boats benefit from national funds to maintain and fix the wood structures of their vessels. When asked about being beneficiaries of EU assistance most fishers replied yes, however, this could have been mistaken with national funding. This is because most of the fishers did not refer to specific schemes available by the EU when asked the type of benefit they received. Moreover, when asked about the type of assistance they would benefit from through EU

funding they proposed a number of suggestions which are not covered by Union Priorities.

4.2.5 Future of the fishing enterprise

The future of the small-scale sector depends on the willingness of existing fishers to remain in the sector, and to pass the enterprise to the next generation of fishers. When asked if fishers would consider quitting fishing and take another job, 70% stated that they will not quit the sector, although a proportion of them already have another land-based job. Only 24% stated that they will consider leaving the sector. Those who do not consider leaving the fishing sector expressed that they do not know what other opportunities to find which can give them the same level of job satisfaction. Moreover, during the conversation fishers explained that the 'being your own boss' way of life is difficult to change. Although some have experimented around by trying other jobs, they still returned to the sea at least as part-time fishers.

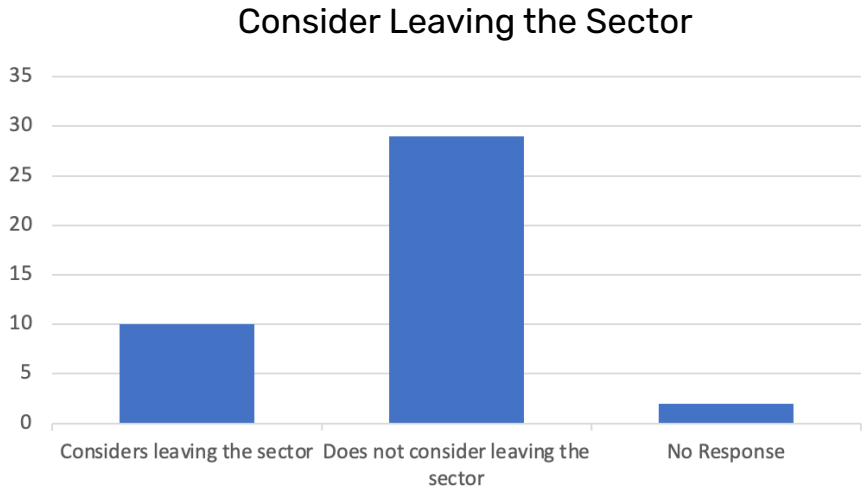


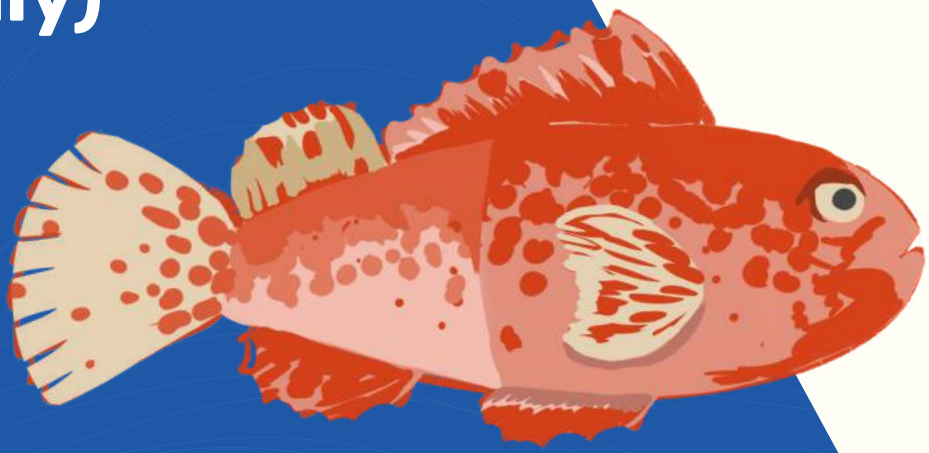
Figure 16: Percentage of small-scale fishers in the Maltese study area considering leaving the sector (our elaboration)

Of those indicating that they would consider leaving the sector are fishers from different age cohorts, with the youngest being 45 years and the eldest 75. When asked about the continuation of their enterprise through their families, 63% of interviewees said they have children, the majority of whom are not employed in the fishing business. This proves to be very important. In fact, when asked "would you advise young peo-

ple to take up this profession?" almost all the fishermen answered NO, giving as an explanation: the difficulty in carrying out the activity; the fact that the earnings are not adequate for the efforts and expenses that necessarily must be faced; a lack of support for the sector; the distance from family, and the hard work that it involves. The solution to tackle these problems, as stated by the fishers themselves, concerns improving and implementing targeted policy programmes to support the sector analysed.

CHAPTER 05

Pantelleria island (Sicily, Italy)



SOCIAL AND ECONOMIC ASPECTS OF MEDITERRANEAN SMALL-SCALE FISHERIES: A SNAPSHOT OF THREE FISHING COMMUNITIES

5.1. Introduction of the study area

The island of Pantelleria is an italian small island located in the middle of the Strait of Sicily, precisely 70 km from the African coast and 85 km from Sicily (Figure 17).

Figure 17: The island of Pantelleria, in the middle of the strait of Sicily. Elaborated with ArcGis

The Island of Pantelleria belongs to the Geographical Sub-Area (GSA) number 13 (Gulf of Hammamet) as defined by the General Fisheries Commission for the Mediterranean (GFCM). For its special conditions, the area in question is highly appreciated and it is specially of interest for bottom trawling and purse seine of different fishing fleets of the Mediterranean Sea from Sicily but also Sardinia (Italy), and other countries like Malta and Tunisia. Those who come from Sicily belong to the bigger harbours of Trapani, Marsala, and Mazara del Vallo. However, the island comprises a small local fleet which is

entirely of small-scale fishing nature and accounts for a total of 17 polyvalent vessels, smaller than 12 meters that use different gears along the year depending on the season (gillnets, trammel nets, longline and pots).

The size of the Pantelleria fishing fleet under 12m and not using towed gears may be quite insignificant when compared to the entire national fishing fleet, if we look strictly into the numbers. The latter is composed of 8 086 vessels (corresponding to a 67.05% of the total Italian fleet) of which 23% are registered in the Sicilian Maritime Departments. Given the small sample size and the small area from which it was taken, it is not possible to extrapolate the findings of our study and apply the conclusions of our analysis to Italy as a whole. Therefore, the present study only aims to describe the very particular case of this small island and the social and economic relevance of this activity for the local community, including the perception of its future prospects and take these as the baseline for any further socio-economic analysis of the island SSF.

5.2. Results

5.2.1. Demography, Boat Ownership and Characteristics

The socio-economic analysis of the fishing sector on the Island of Pantelleria was carried out via direct interviews with fisher's operating in the local community. The sample being examined consists of 9 fishers (boat owners) out of a total of 17 operating in the local community. First of all, it is possible to carry out an initial classification of the boat owners on the basis of sex: all the fishers interviewed belonged to the male category and presence of women at sea has been shown as minimal. However, across the questionnaire it was learned that women participated in other ways in the fishing family businesses: women (normally spouses of the fishermen) were either co-owners of the boat or members of the crew in a 22% of the cases, but also would carry out activities in the repair of fishing gear and fish sales. Also, it is implicit that they would take care of their homes and family dependent members as well, taking into account that only 11% of spouses have another job outside the family fishing enterprise.

It was also possible to carry out a subdivision of the surveyed operators based on age groups. This latter classification highlighted that only 11% of the fishers are under the age of 35 years old, while 23% are between 35 and 45, 44% are between 45 and 55, 11% between 55 and 65 years old, and the remaining 11% are over 65 years old. This indicates an aging sector and a lack of intergenerational renewal, given the low percentage of young fishers across the whole sample.

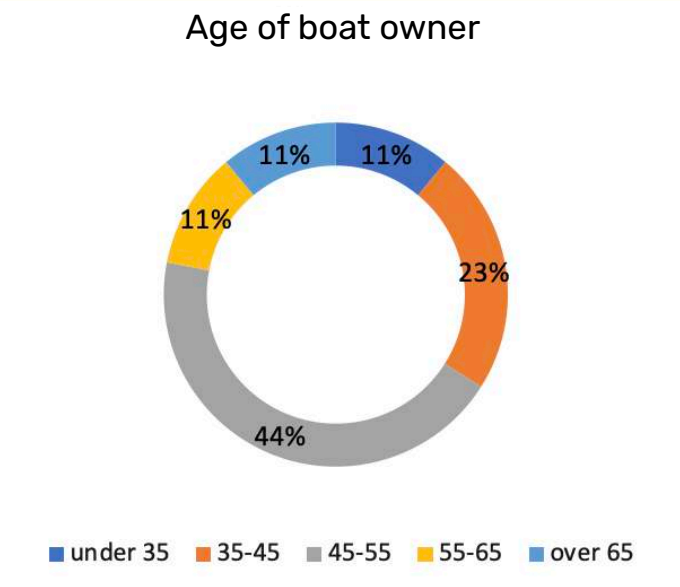


Figure 18: Age of the boat owner in the study area of Pantelleria island (our elaboration)

Another important indicator analysed concerns the educational level of fishers. Only 11% of them completed their studies and obtained a university degree, while 33% of the interviewees stated that they had a primary education level qualification, and another 33% reached secondary school qualification. The survey revealed that a significant percentage of operators, 23% of them, did not achieve any qualifications. The findings are shown in the following graph (Figure 19).

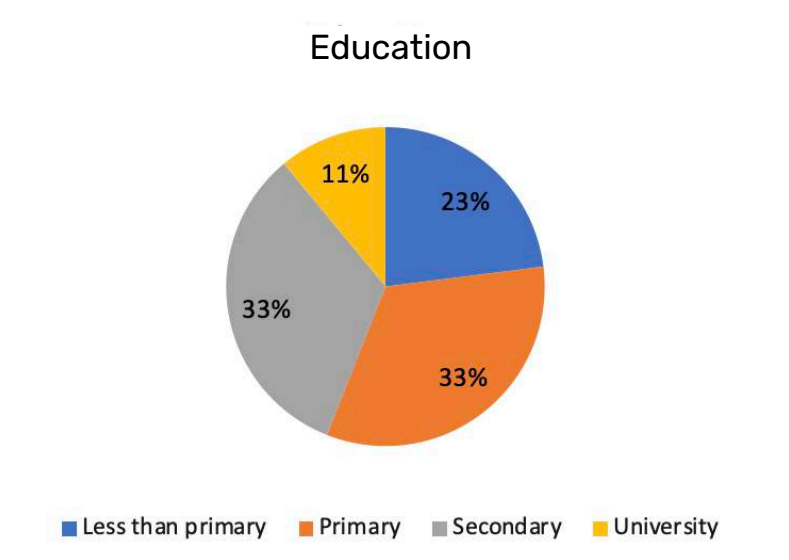


Figure 19: Education levels of small-scale fishers interviewed in the in the study area of Pantelleria (our elaboration)

On the other hand, most of the interviewed fishers, almost 90%, are coming from families engaged in the sector for generations, which would have enabled them to easily engage in the sector by continuing their family business. Below, it is possible to observe the percentages of the interviewees who come from families who were already involved in the fishing sector and those who come from different origins in terms of work. Also, if we look at the years of these fishers that have been dedicating to fishing, a majority of them (66%) have dedicated to this work around 26-45 years, 11% dedicated to fishing 46 or more years and an exception, only 22% of the interviewees, have dedicated less than 10 years to this activity. These latest cases normally corresponded to young fishers in the island, while only one case out of 9 has been reported where a person external from the sector, with no fishing family tradition, joined the sector in a later stage, when he was in his thirties.

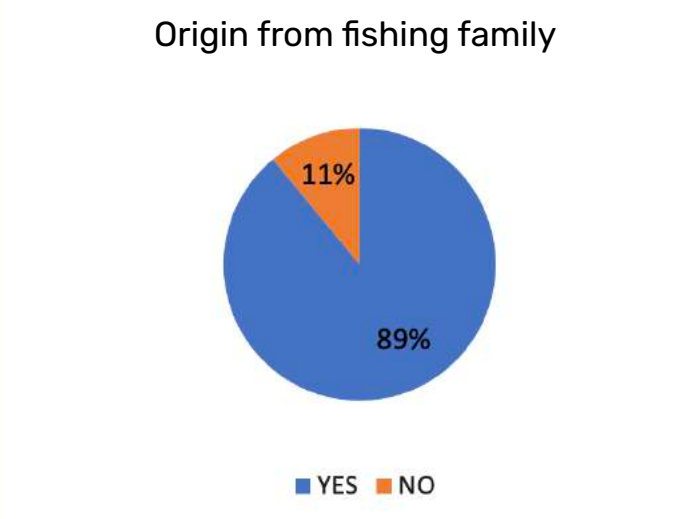


Figure 20: Origin of the small-scale fishers in the in the study area of Pantelleria island (our elaboration)

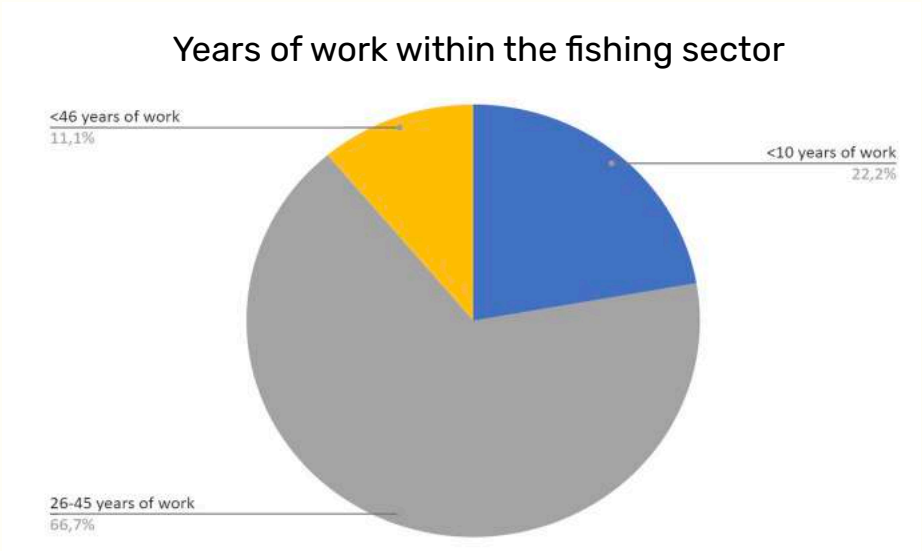


Figure 21: Years of work within the fishing sector in the study area of Pantelleria island (our elaboration)

All the fishers interviewed in the questionnaire are owners of a single boat. After having given a brief overview of the characteristics of the analysed sample, it is important to outline the distinct peculiarities of the boats used in the fishing sector within the island. 55% of fishers own boats that are less than 6m in length and 45% of them operate on boats

between 6 and 9m long. None of the interviewed fishers' own boats bigger than 9 meters in Pantelleria island. Furthermore, the age of the boats was also considered. 56% of operators own boats that are over 40 years old, 33% between 20 and 40 years old, and only 1 operator out of 9 (11%) owns a boat under the age of 20.

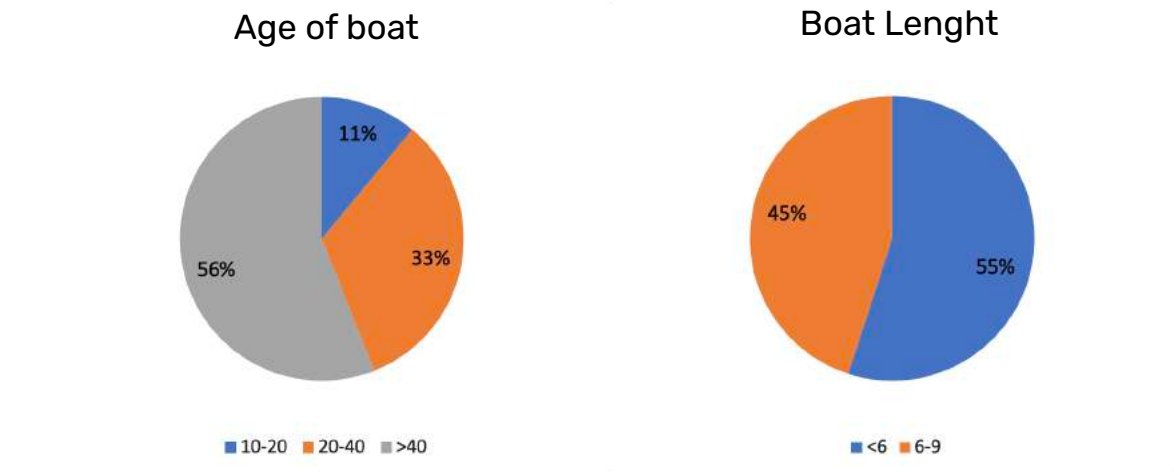


Figure 22: Boat length and age of the boats of the study area of Pantelleria island (our elaboration)

All the fishers interviewed stated that they have multiple licenses required for different types of fishing. These refer to the use of gillnets, longlines, pots or trammel nets, among the most used. No fishers from Pantelleria had any quotas or permits to fish either tuna or swordfish in the island, although it's something they declare that they would like to have as they think it could support them to reach a more appropriate income at the end of the year.

5.2.2. Structure of the fishing enterprise and its crew members

As for the characteristics of the businesses set up by the fishers examined, only 37% of the operators stated that theirs is not a family business, unlike the remaining 63% operators. Furthermore, when analysing data and talking to the interviewers these operators do not consider themselves as such as they are sole owners and have no crew members. Moreover, 77% of the operators manage the boat alone and only

22% two of them have crew members, who hail from the local community. Of these collaborators, only 1 operator is fully dedicated to fisheries, while the other works as a member of the crew on a seasonal basis. Interestingly, as previously mentioned one of these crew members is a woman. Type of remuneration is always by shares.

The survey analyzed the number of hours spent beyond the proper activity at sea and all what is required in order to be able to perform it successfully. It has been determined that, although there is a lot of variability from one fishing business to the other, the number of hours spent in the pre- and post-harvesting activity is very high. With an average of 35 hours per week on the whole sample analysed, 50% of the respondents stated that they spend more than 40 hours/ week (which is the average length of a normal full-time job) on these activities beyond the fishing activity itself, arriving to maximums of 56 hours/week invested in few of the respondents.

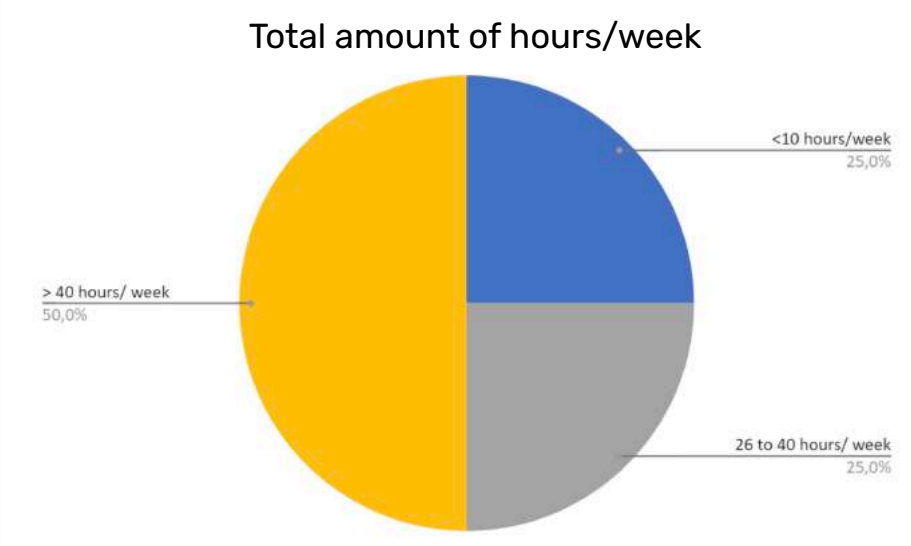


Figure 23: Total amount of hours per week dedicated to pre- and post-harvesting fishing activities in the Pantelleria island study area (our elaboration)

The work carried out can be divided into different categories, such as: maintenance and repair, selling fish, preparing the boat, fishing activities. On the basis of what emerged from the interviews carried out with fishers, it was possible to closely understand how the fishers interviewed distributed the hours dedicated to each category of work outside fishing, as visualised in Figure 24.

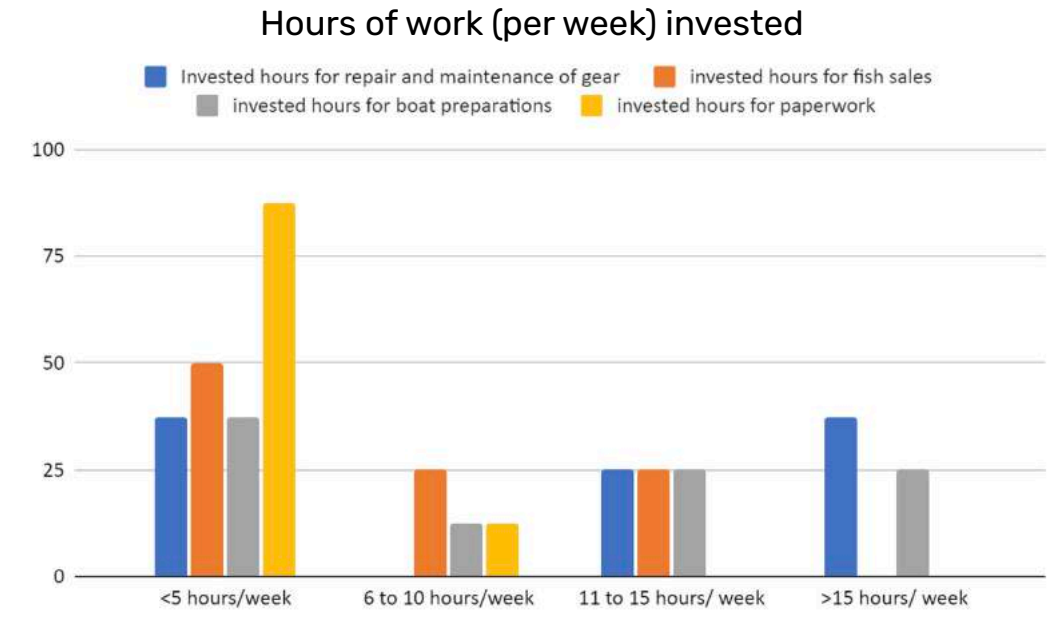


Figure 24: Hours per week of work invested to pre- and post-harvesting fishing activities in the Pantelleria island study area (our elaboration)

In the graph we can state that the repair and maintenance of the gear and boat preparations are the activities that fishers dedicate more time to, with 37% and 25% of the respondents, respectively, that spend more than 15 hours/week and reaching maximums of 30 and 21 hours respectively to these activities. On the other hand, paperwork normally is the activity on which they spend less time (80% of the respondents dedicate less than 5 hours a week). Fish sales average 6 hours per week, although the variability within this activity is quite high.

5.2.3 Fishing as a source of living

Fishing activities in Pantelleria does not appear to be the only source of income for all the interviewed fishers. In fact, 5 out of 9 operators are also engaged in agriculture, 1 operator also works as a carpenter, 1 performs professional underwater activities, and 2 of them are supported by the pension of their spouses. On the other hand, around 90% of those respondents consider fishing as their primary job and the other activity as a complement, although in more than 55% of the cases this complementary activity represents more than 50% of their annual income. This somehow shows how the fishers -although they have the need to perform other activities to be

able to have a decent living- they consider themselves primarily fishers, feeling probably based on the time spent rather on the profits made and/or the desire to dedicate exclusively to the fishing activity. One of the salient points of the survey that was carried out concerns the average annual turnover obtained from the activity examined. With an average of a 90 days/ year dedicated to fishing in Pantelleria, 56% of fishers obtain revenues of less than €5,000 from the fishing activity, 33% stated that they earn from €5,000 to €10,000 per year, and only 11% or 1 out of 9 operators receive an average turnover of between €10,000 and €20,000 from this activity. Below is the graph showing the aforementioned:

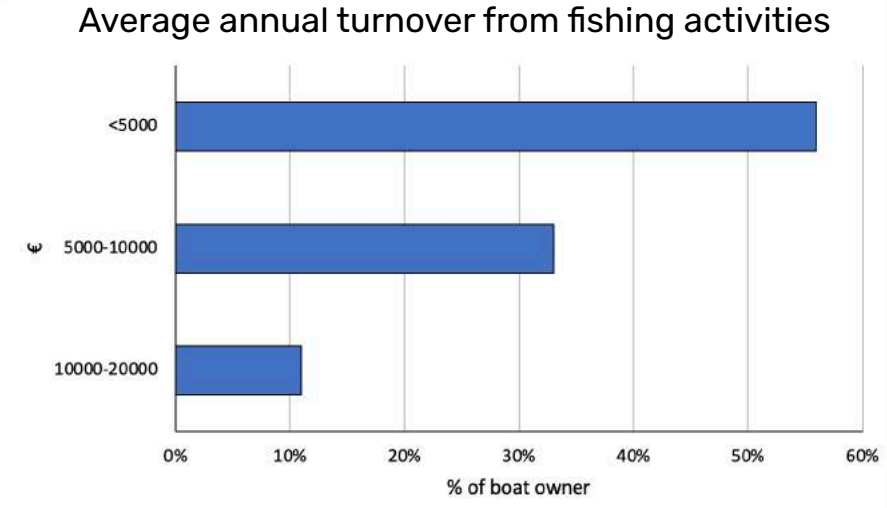


Figure 25: Average annual turnover from fishing activities in the Pantelleria island study area (our elaboration)

It was also possible to analyse the costs incurred on the activity. Although there is obviously variability on the total costs incurred by each fisheries business and its distribution among the different categories, on average, around 50% of the expenses incurred are attributable to the labour costs (owner and crew, when appropriate), 20% concerns maintenance costs for the boat, about 14% is spent on fuel, other 14% on administrative costs, and the remaining 2% on any other type of expenses. Actually 66% of the fisher's state that they regularly invest in repairing the equipment, while only 33% state that they rarely or hardly ever do so. While 55% stated that their investment has decreased over the last 10 years, 33% stated that remained the same and only 11% mentioned it increased.

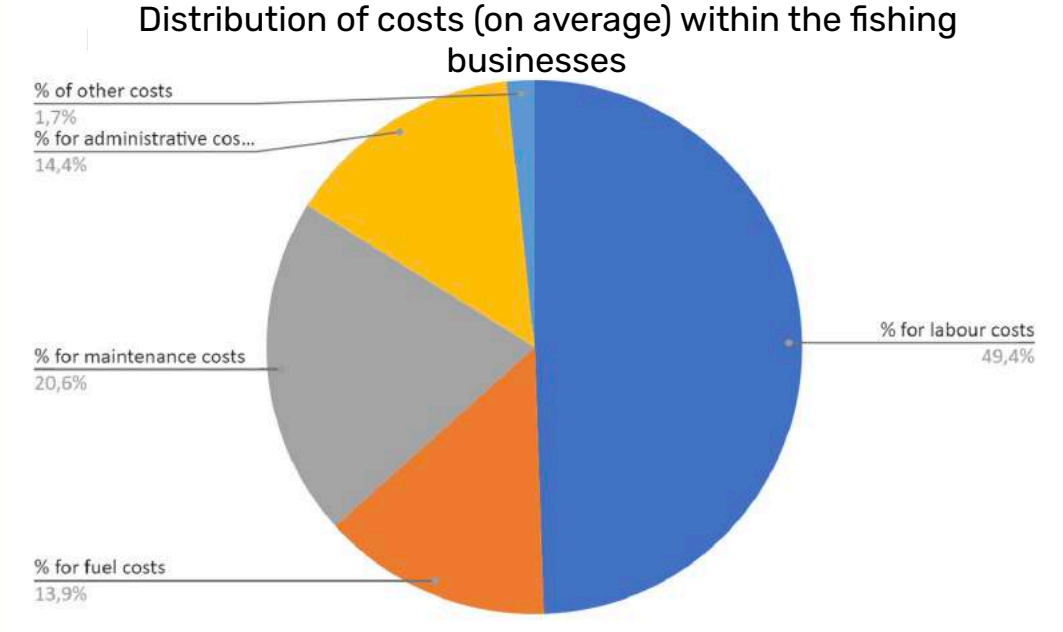


Figure 26: Distribution of costs within the fishing businesses in the Pantelleria island study area (our elaboration)

Based on these profit and loss concerns, 67% of the fishers remark that the average annual turnover is not enough to meet the necessary expenses. These same respondents actually stated that their income has decreased in the past ten years, compared to today. Only 33% of them manage to cover all the expenses with the revenues obtained from the activity in question, who also declared that their income is more or less the same as 10 years ago. Taking into account the costs incurred for the production factors, the revenues offered by carrying out this activity are not enough to meet the financial needs of families. All fishers stated that they are unable to fully cover family expenses, despite the fact that 44% of the respondents don't have any family dependent members, 22% have 1 or 2 family dependent members and 33% of them are medium-size groups of 3 or up to 4 people. As mentioned above, only 11% of the spouses of the fishers have a job externally to their family business. Positively, none of them have resorted to bank loans to meet the necessary investments.

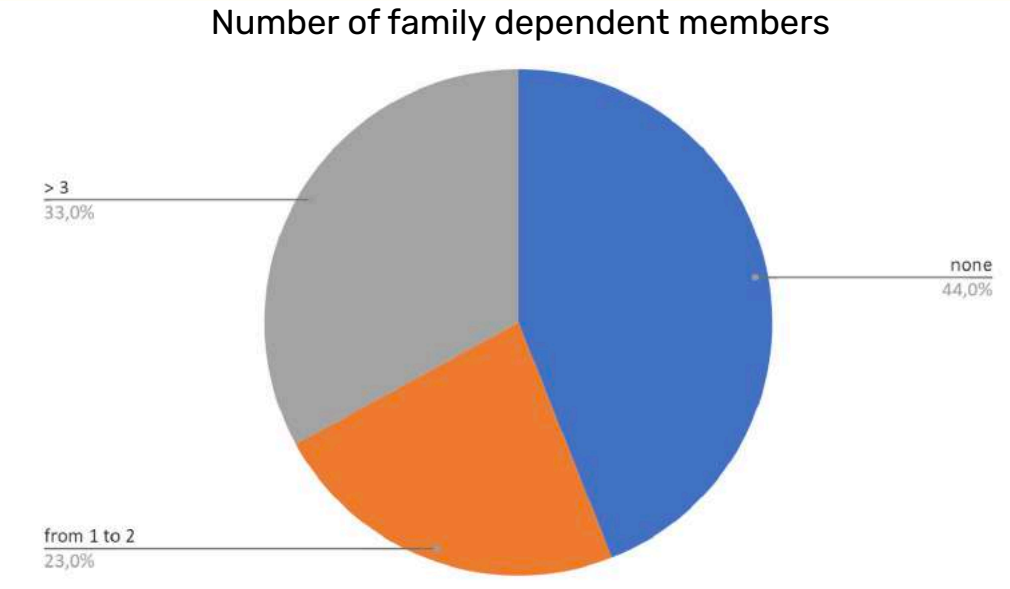


Figure 27: Number of family dependent members of the fishers interviewed in the Pantelleria study area (our elaboration)

However, only 11% of the respondents are thinking seriously to completely leave the sector and take up another job. This is most probably due to the fact that actually all of them are already doing other diversified activities besides fishing in a way to complement their income to have a decent living.

5.2.4 EU and national funding schemes

The socio-economic analysis carried out revealed a lack of knowledge of the European maritime and fishing systems, as well as the measures supported by the European Maritime and Fisheries Fund's 2014-2020 programme. Nevertheless, 88% of the fishermen have benefited from the aforementioned funds, and 77% have successfully managed to obtain them thanks to the external support received, and use them correctly in their business.

In the past year, the small-scale fishers in the area are progressively being better linked with the local FLAG called "Isole di Sicilia FLAG", thanks to the small-scale fisher's local association getting further involved in the needed meetings and aware of the funding opportunities they provide to collective projects. Thanks to these efforts the fisher association have won different proposals that serve the local development of the fishing sector in the island, like the improvement of the landing site or a first transformation of fish and direct sell-

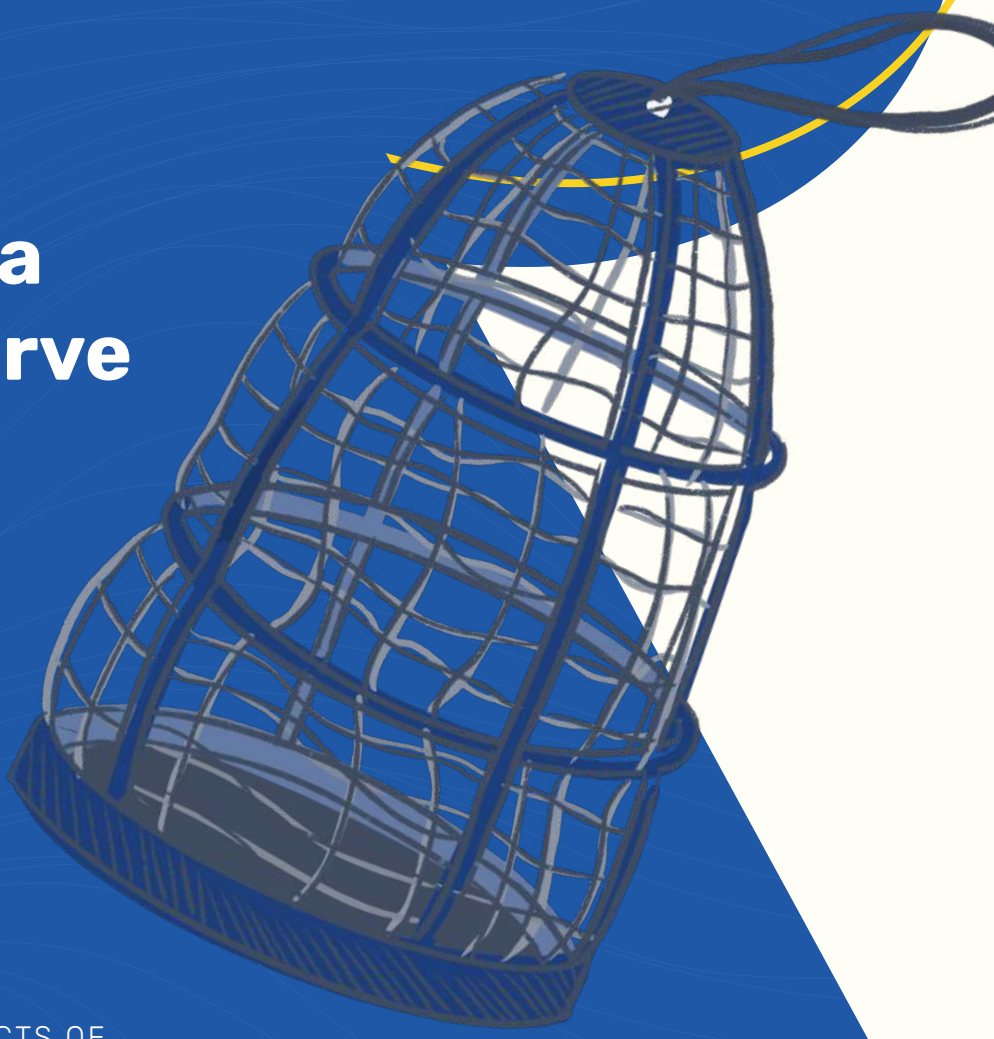
point to consumers. On the other hand, the Association has been active and successful accessing some private funds, that have allowed them to advance in promoting a Marine Protected Area in the island in the near future. This funding opportunities for collective projects have been perceived by many fishers in the island as a hopeful path to a better future.

5.2.5 Future of the fishing enterprise

7 out of 9 operators reported that they have children and none of them are engaged in fishing. This proves to be very important. In fact, when asked "Would you advise young people to take up this profession?" most of the fishers (55%) answered NO, giving as an explanation: the difficulty in carrying out the activity; how the earnings are not equal to the efforts and expenses that must necessarily be faced; and due to a lack of support for the sector. The solution to tackle these problems, as stated by the fishers themselves, concerns improving and implementing political and economic programmes aimed at supporting the analysed sector. Some of the interviewed fishers added that marine protection and a biological rest period should be necessary, as also be able to receive a better price for their product, carrying out a better marketing that would enhance its added value.

CHAPTER 06

Cabo de Gata Marine Reserve (Spain)



SOCIAL AND ECONOMIC ASPECTS OF MEDITERRANEAN SMALL-SCALE FISHERIES: A SNAPSHOT OF THREE FISHING COMMUNITIES

6.1. Introduction of the study area

The study area covered by this report is the area under the influence of the Cabo de Gata Marine Reserve, located in the province of Almería (Spain), on the northern coast of the Alboran Sea (Figure 28).

Figure 28: The area of influence of the Marine Reserve of Cabo de Gata (Almería province, Spain)

The area of influence of the Marine Reserve includes the municipalities of Almería, Níjar and Carboneras, with fishers scattered along a total of 68 km of coast, located in 2 ports (Almería and Carboneras) and in 4 fishing villages scattered along the coast where the boats are kept on the beaches: Cabo de Gata, San José, Isleta del Moro and Agua Amarga. The Reserve extends over a total of 4.653ha along to the coast line, bounded by Carboneras to the north and Cabo de Gata to the south, and between the land line and the 50 metres depth contour (corresponding to the distance of only one mile from the coast).

As in the rest of the Mediterranean, fishing in this area has been carried out since the existence of man. Numerous signs found at the "Los Millares" archaeological site in Almería (pre-historic settlement from the bronze age 3200-2200 BC) show that fishing in the area is as old as human settlement, both for food and for ornamental purposes, and fishing has been preserved to the present day, as a relevant economic activity in the area.

The size of the Cabo de Gata Marine Reserve fishing fleet which is small-scale (under 12m and not using towed gears) is only of 32 small-scale fishing vessels, an amount that if we look strictly into the numbers, can be considered quite insignificant when compared to the entire Spanish Mediterranean small scale fishing fleet. The latter is composed of 1.475 vessels (corresponding to a 64% of the total Spanish Mediterranean fleet) of which 29% (420 boats) were registered in the Andalusian coast[1] . Given the small sample size and the small area from which it was taken, it is not possible to extrapolate the findings of our study and apply the conclusions of our analysis to the rest of the Andalucían or Spanish Mediterranean as a whole. Therefore, the present study only aims to describe the very particular case of this area and the social and economic relevance of this activity for the local community, including the perception of its future prospects, and take these as the baseline for any further socio-economic analysis in the area.

[1] Secretaría general de Pesca, Ministerio de Agricultura Pesca y Alimentación. La flota española. Situación a 31 de diciembre de 2019. http://www.mapa.gob.es/es/

6.2. Results

The survey carried out in Cabo de Gata Marine Reserve (Spain) is based on a sample consisting of 10 fishermen out of a total of 32 within the census and residing in the area of influence of the Marine Reserve, in the Almería province of Spain. The number of respondents was distributed according to the proportionality in their base ports of the number of SSF vessels.

6.2.1. Demography, Boat Ownership and Characteristics

With regards to the characteristics of the sample taken into consideration, an initial analysis can be carried out on the composition of the fishers by age and sex. Out of 10 interviewed fishers, 90% of them are male and only one woman was found within the sample examined. However, across the questionnaire it was found that in 10% of the respondents' spouses of the fishers were co-owners of the boat. However, the respondents having declared they all are considered themselves as family businesses, and stated that 60% of the fisher's spouses do not work in other jobs outside the family business it is implicit that they dedicate time to take care of home and family dependent members, if not also taking over some of the side activities of the family business such as the accounting, repair of nets, fish sales, etc.

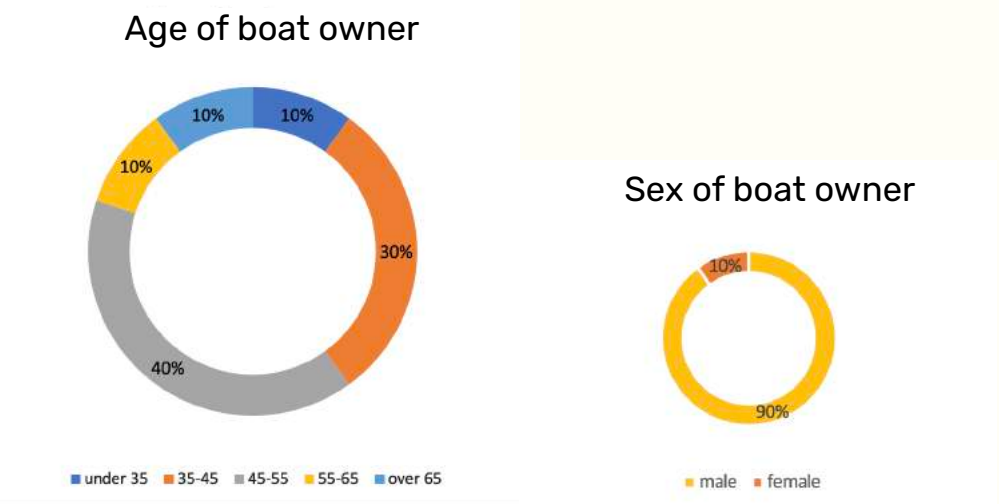


Figure 29: Sex and age of the boat owner in the Cabo de Gata Study Area (our elaboration)

The following graph gives a precise description of the age groups found among the fishers interviewed. The wide majority of the fishers (a total of 70%) are aged between 35 and 55 years old. An additional 10% are in the range of 55-65 years old and even another 10% are over 65 years old. This data highlights an aging sector and a lack of renewal change in the fishing sector by having only 10% of fishers aged under-35, a phenomenon that makes the sector extremely vulnerable and susceptible to abandonment over time.

The survey also aims to analyse the educational level of the interviewees. As can be seen from the following graph, 40% of the latter stated that they did not complete primary school, compared to another 40% who instead did complete the same level of education. Only 20% of fishers said they have completed secondary education. None of the interviewed fishers did access nor completed any university degree or superior studies. The findings are shown in the following figure 30.

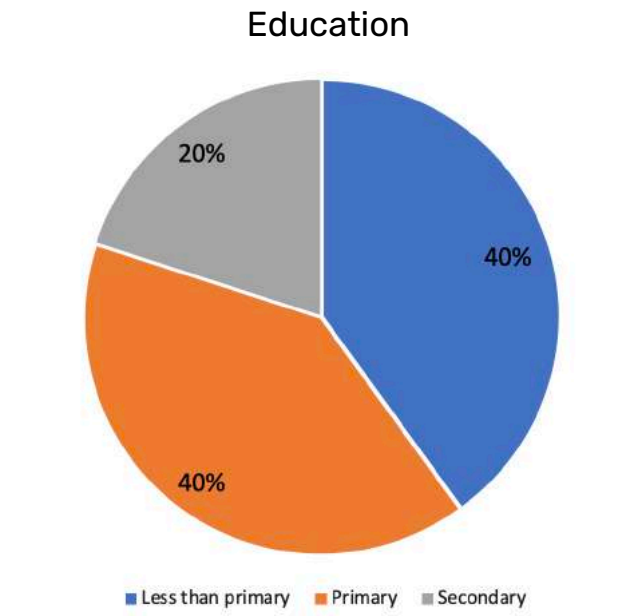


Figure 30: Education levels of small-scale fishers interviewed in the in the study area of Cabo de Gata (our elaboration)

On the other hand, most of the interviewed fishers, 90%, are coming from families engaged in the sector for generations, which would have enabled them to easily engage in the sector by continuing their family business from a very young age, where no superior degrees of education are required. Below, it is possible to observe the percentages of the interviewees who come from families who were already involved in the fishing sector and those who come from different origins in terms of work (only 10%). Also, if we look at the years of these fishers that have been dedicating to fishing, a wide majority of them (75%) have dedicated to this work around 26-45 years, and only 25% of the interviewees have dedicated 11-25 years to this activity. These latest cases normally corresponded to younger fishers interviewed.

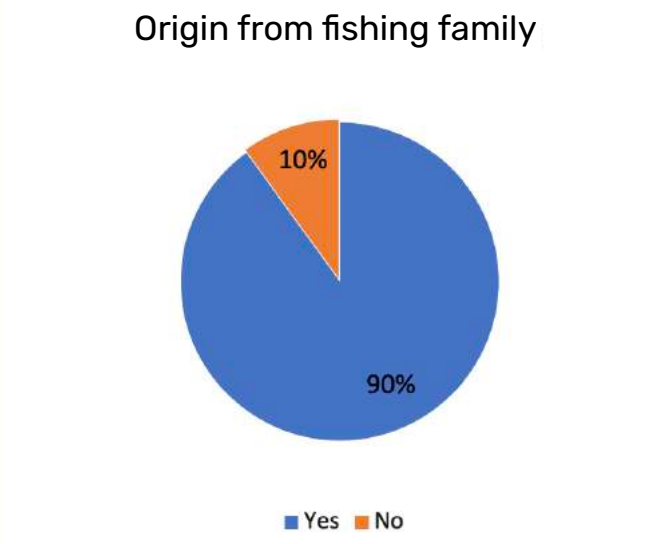


Figure 31: Origin of the small-scale fishers interviewed in the Cabo de Gata study area (our elaboration)

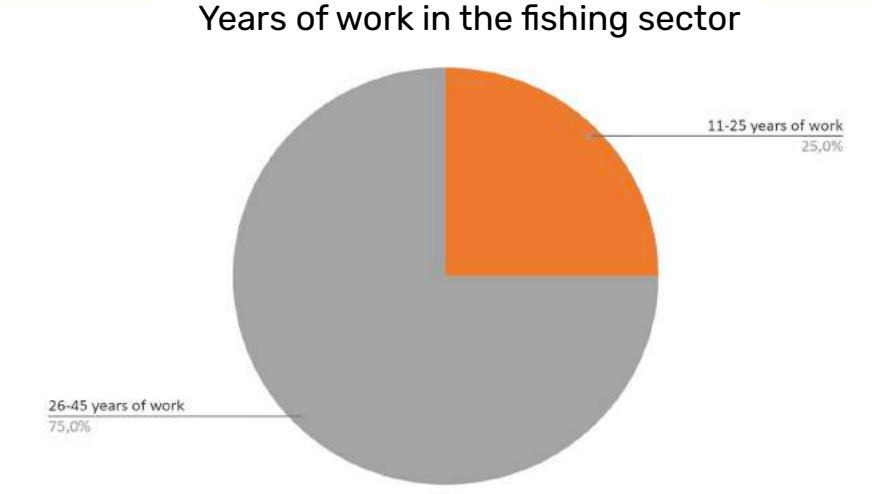


Figure 32: Years of work in the fishing sector in the Cabo de Gata study area (our elaboration)

The survey carried out also aims to describe the characteristics of the boats used by the interviewees. The wide majority of the fishers interviewed in the questionnaire (80%) are owners of a single boat, however a 20% stated they owned 2 fishing boats. As for the characteristics of the boats used by the fishers interviewed, 34% of them fall into the 6-9m category, 33% of the boats have a length between 9 and 12m, while the remaining 25% and 8% are attributable to the less than 6m and more than 12m classes, respectively, as shown in the graph below. The single boat that is over 12 meters corresponds to a boat of 13 m length. Another element taken into consideration concerns the age of the boats. Only 10% of fishers own a boat under 10 years old. For 70% of them, the age of the boat falls within the 10-20 years range while, for the remaining 20%, the age is divided into two classes: 20-40 and over 40 years old.

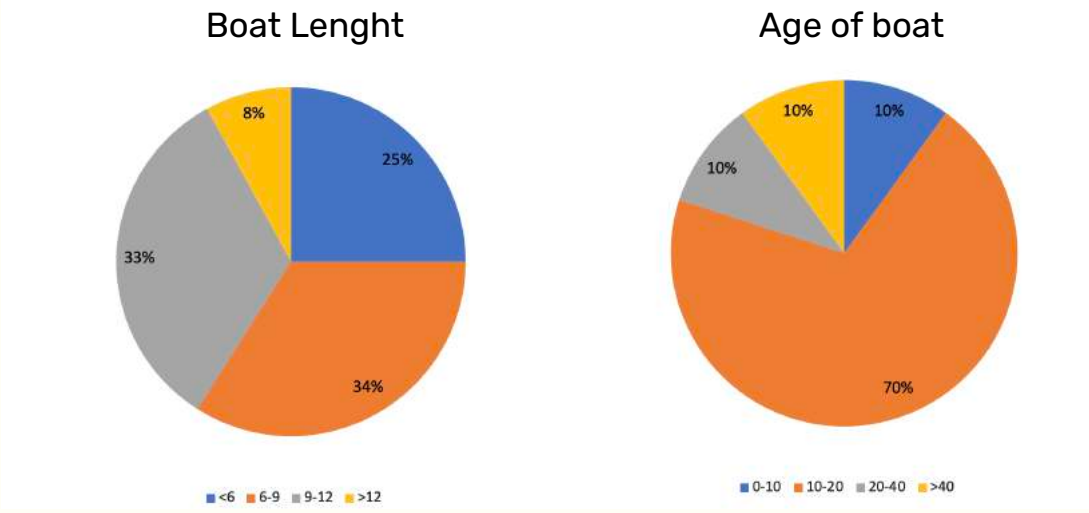


Figure 33: Boat length and age of the boats of the small-scale fishers interviewed in Cabo de Gata study area (our elaboration)

All the boats considered have license for “Artes Menores” fishing category, which categorises the polyvalent use of different gears for boats of small-scale fishing nature. Another salient point of the survey carried out concerns the possession by the interviewees of swordfish and tuna quotas of which, as shown in the following graph, only 1 fisher out of 10 has bluefin tuna quota (corresponding to only 521 kg). Actually, no small-scale fishers from Gibraltar Strait and Spanish Mediterranean cost have any access to swordfish and they only have access to 3.77% from the Spanish quota to Bluefin Tuna., being a historical claim to the Spanish authorities to have a fairer access to these resources.

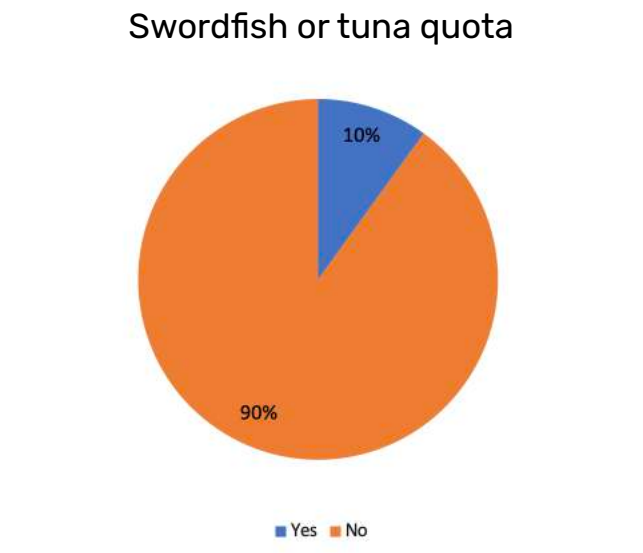


Figure 34: Percentage of small -scale fishers interviewed that have access to swordfish or tuna quota in Cabo de Gata Study Area (our elaboration)

6.2.2. Structure of the fishing enterprise and its crew members

All the fishers interviewed stated that their activity is characterised by being a family business. 70% of them are the sole owner of the business, while the remaining 30% co-own the boat with another person, which in one case (out of 10) corresponds to his spouse. The wide majority of the businesses (70%) are managed by a total of 2 people, 20% consist of a crew of 3 or more people and only 10% of cases have been found where there are no crew members and work alone.

Having found a high incidence of additional crew members, an investigation was carried out. It was therefore possible to obtain information about the nationality of the employees. As shown in the following graph, 90% are Spanish nationals, while 10% are foreign (basically Senegalese). Crew members are male employees whose age is within the following categories: 30% correspond to ages from 45-55 years old and 20% are from a range of 35 to 45 years old, but surprisingly 50% correspond to less than 35 years old. Questions were asked about their educational qualifications and it emerged that 50% of the crew members have reached primary education level, while the remaining 50% are divided between members who have not reached the primary level and fishers who have completed secondary education.

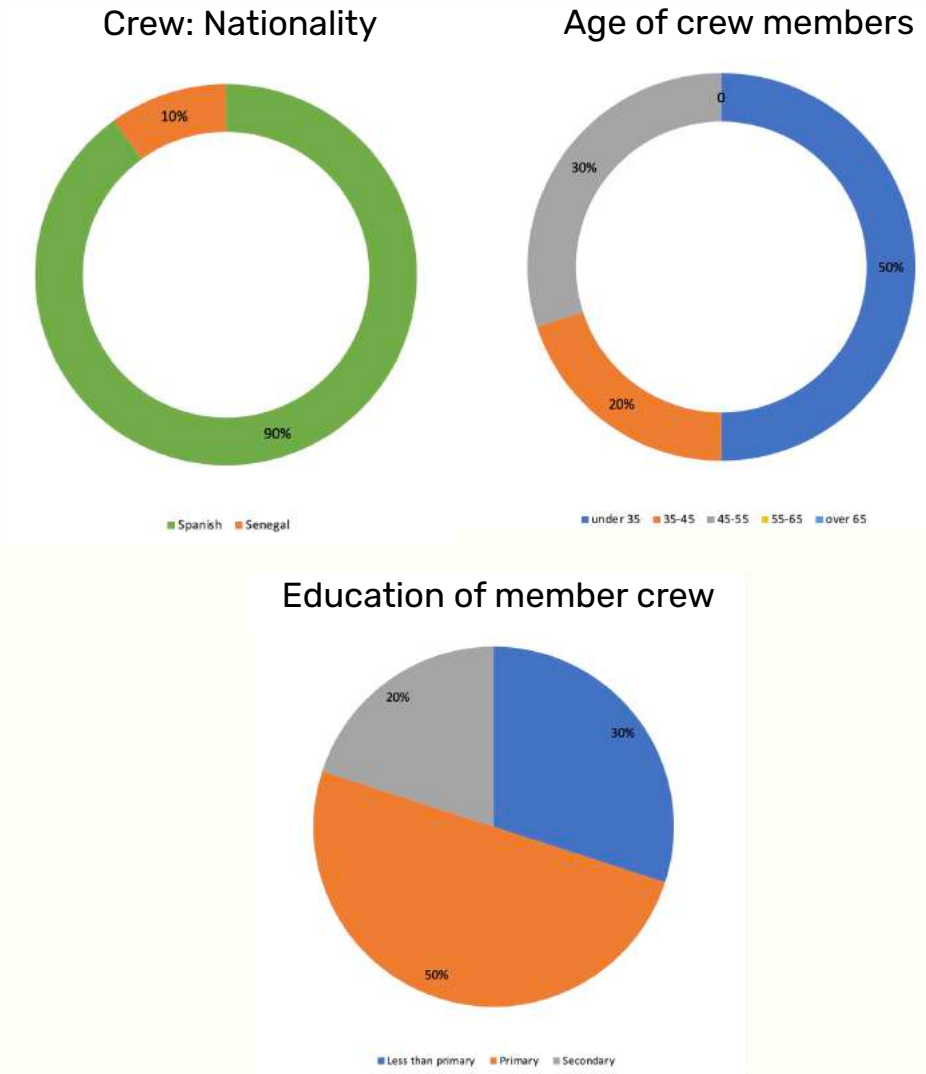


Figure 35: Nationality, age and education levels of the crew members in the Cabo de Gata study area (our elaboration)

The interviewees stated that their crew members are mainly family members. This occurs in 60% of cases, while the remaining 40% are from the local workforce without any particular ties to the owner. Furthermore, 80% of those workers in question are full-time fishers and only 20% of them are recruited seasonally. In all cases, the remuneration provides for the disbursement of some shares of the company capital and, as for the duties performed by the crew, these are mainly fishing, repairing the boat, and selling fish.

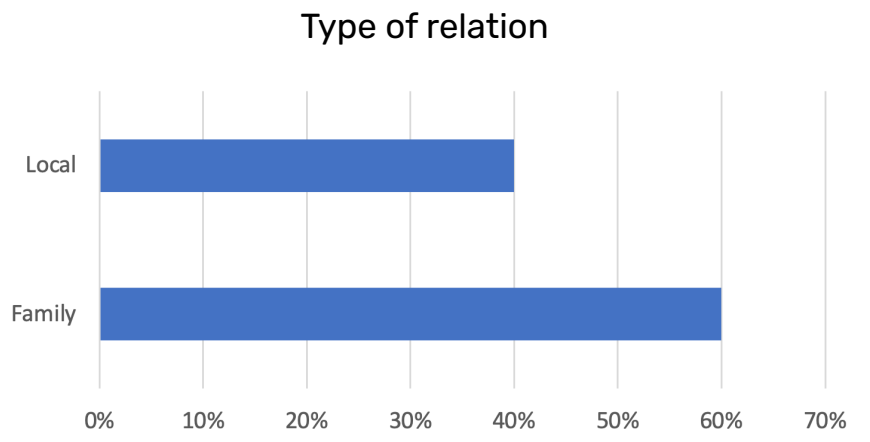


Figure 36: Type of relation of the crew members with the owner of the boat in Cabo de Gata study area (our elaboration)

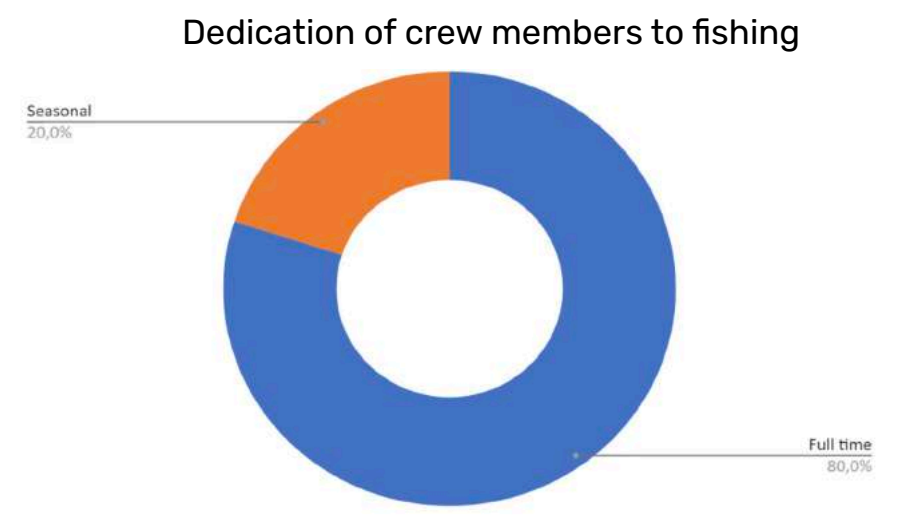


Figure 37: Dedication of crew members to fishing in Cabo de Gata study area (our elaboration)

The survey analysed the number of hours spent outside the proper fishing activity and all what is required in order to be able to perform it successfully. It has been determined that, although there is variability among the respondents, the number of hours spent beyond the fishing activity is very high. With an average of 56 hours/ week on the whole sample analysed, 70% of the respondents stated that they spend more than 40 hours/ week (which is the average of a normal full-time job) on these activities beyond the fishing activity itself at sea, arriving to maximums of 75 hours/ week invested by the respondents.

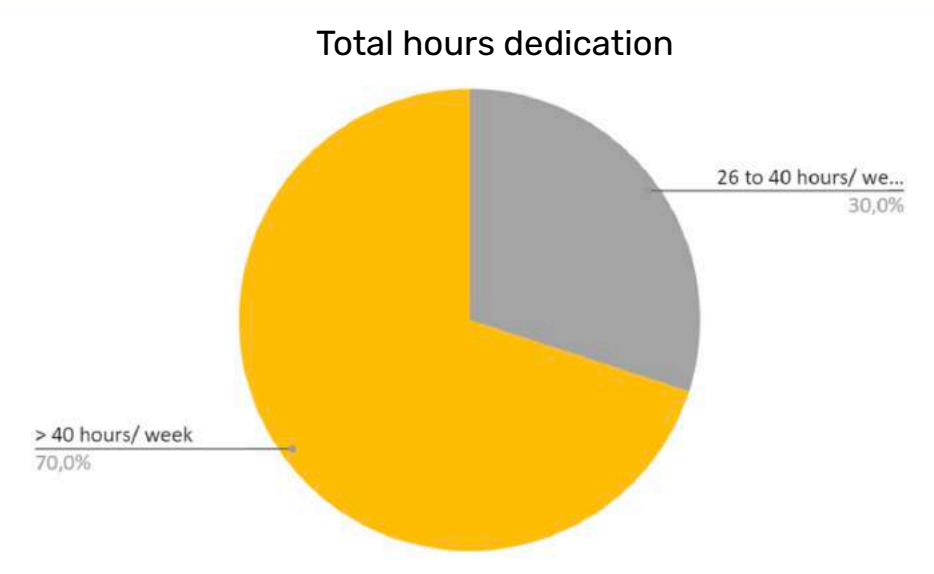


Figure 38: Total hours of dedication (hours/week) to pre- and post-harvesting in the fishing activity in Cabo de Gata (our elaboration)

These complementary activities can be divided into different categories, such as maintenance and repair of gear, selling fish, preparing the boat and paperwork. Based on what emerged from the interviews carried out with fishers, it was possible to create a graph where the hours dedicated to each category of work are highlighted with reference to the percentages of fishers interviewed.

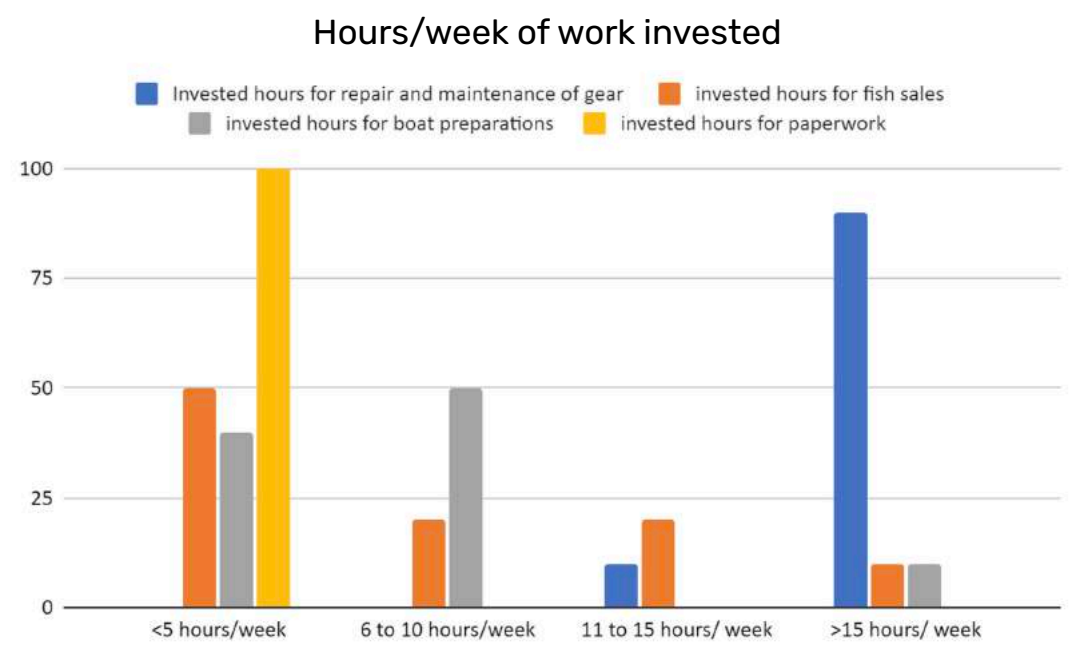


Figure 39: Hours/week invested to pre- and post-harvesting in the fishing activity in Cabo de Gata (our elaboration)

In figure 39 it can be stated that the repair and maintenance of the gear is clearly the activity that fishers dedicate more time to, with respondents dedicating ranges from 12 up to 65 hours/week. On the other hand, paperwork is the activity which fishers dedicate less time to. Fish sales are very variable and normally this variability depends on the issue of having a fish market in the same village or not, which requires to take the car and drive several km away from their port.

6.2.3 Fishing as a source of living

Contrasting with the case of Pantelleria, in Cabo de Gata the fishers dedicate 100% of their time to fish, being fishing their only source of income. However, in 40% of the cases the fishers spouses have other jobs outside the fishing business, contributing in this way in the family turnover.

The fishing activity varies a bit among the fishers interviewed, but taking into account the good weather of the area, and that they all represent fishers that dedicate full-time to this activity, we estimate that fishers of the area dedicate from 150 to 200 days, and 163 days on average to fish.

One of the salient points of the survey carried out concerns

the average annual turnover obtained from the activity examined (figure 40).

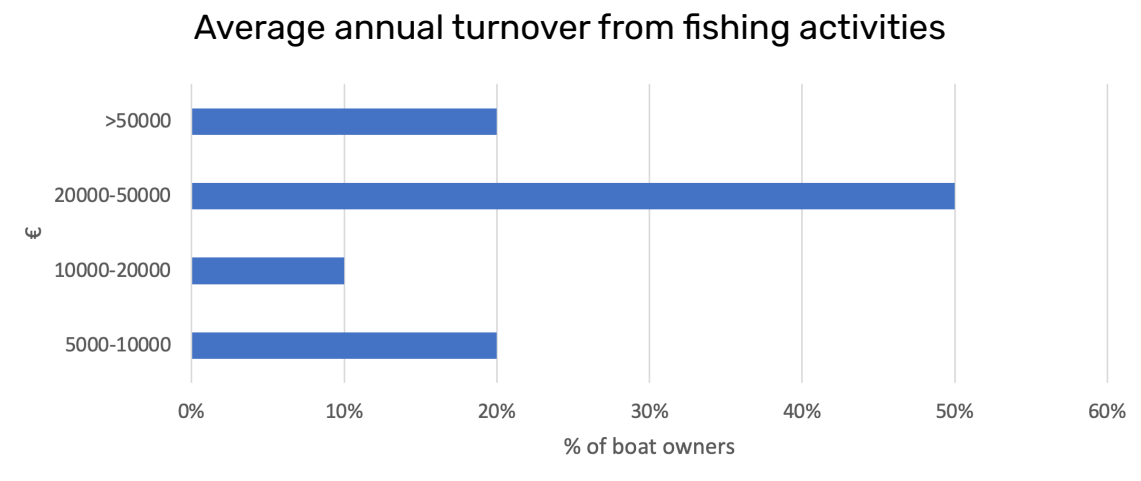


Figure 40: Average turnover from fishing activities in Cabo de Gata study area (our elaboration)

50% of the fishermen stated that they obtain an income between €20,000 and €50,000 a year, while 20% earn between €5,000 and €10,000, and only 10 % of them between €10,000 and €20,000 a year. Only 1 operator (which corresponds to 10%) stated that he obtains an average turnover of just over €50,000 a year. Precisely this latest operator turned out to be the only one that had Bluefin Tuna Quota, and that explains quite directly why his turnover was higher than the others.

While it was possible to analyse the revenues obtained from this activity, it is also necessary to highlight the costs incurred as entrepreneurs to ensure that fishing survives. Although there is obvious variability in the total costs incurred by each fishing business and its distribution among the different categories for each fishing vessel, on average, the distribution percentages among the categories are quite close to one another. On average, around 28% of the costs are attributable to maintenance costs, 25% are for fuel and around 24% of the expenses incurred are attributable to labor costs (owner and crew, when appropriate). On the other hand, about 21 % is spent on administrative costs and other categories.

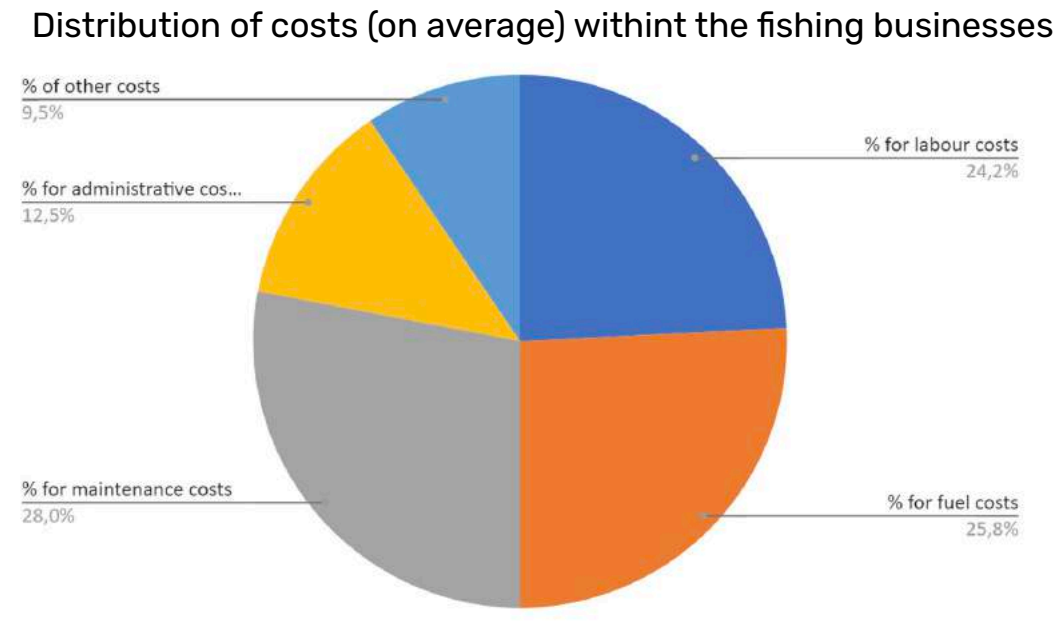


Figure 41: Distribution of costs withing the fishing businesses in Cabo de Gata study area (our elaboration)

According to the fisher's statements, only 60% of them are able to cover all the costs related to fishing with the revenues gained, while the remaining 40% states that the average annual turnover is not enough to meet the necessary expenses. The percentages are also consistent with regard to the increase (stated by 60% of fishers) and the decrease (remaining 40%) of profits in the last 10 years, which leads us to understand how the two are closely linked.

The revenues offered by carrying out this activity, net of the costs incurred for the production factors, are also generally enough to meet the needs of families. This is explained by the fact that in 60% of the cases the spouses of the fishers have a job external to the fishing business that contributes to the family total turnover. However, two out of 10 fishers state that they cannot fully cover family expenses despite the fact that they are medium-sized groups, made up of a maximum of 3 people. It's important to note that 40% of them have resorted to bank loans to meet the necessary investments which, as stated by all 10 fishers interviewed, are regularly carried out on boat and has been increased in the past ten years. They refer to maintenance, repair, and modernisation of the vessels.

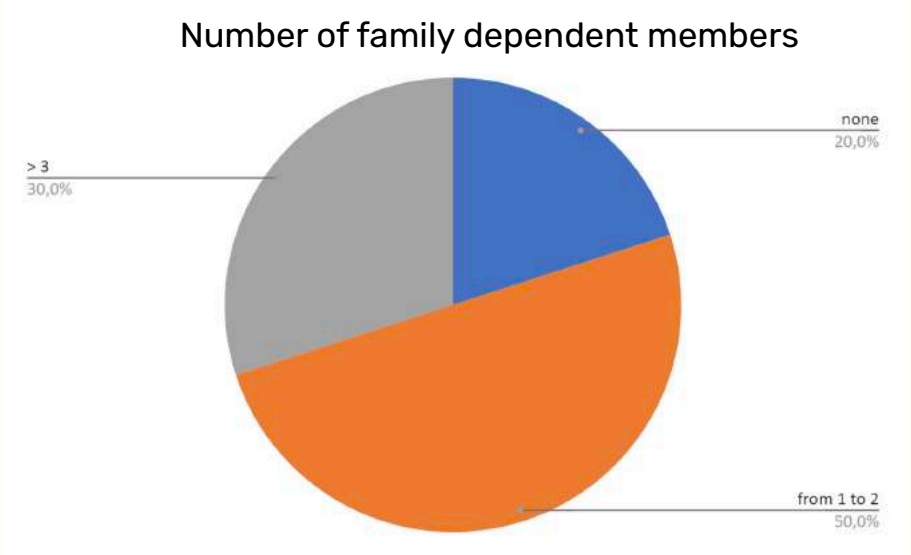


Figure 42: Number of family dependent members of small-scale fishers interviewed in Cabo de Gata study area (our elaboration)

6.2.4 EU funding

The socio-economic analysis carried out revealed a lack of knowledge of the European maritime and fishing systems, as well as of the measures supported by the European Maritime and Fisheries Fund's 2014-2020 programme, where only 20% of them declare to have this knowledge. Only 40% of fishers have benefited from the aforementioned funding, successfully managing to obtain them, and use them correctly in their business, basically thanks to the external support to apply for such funding opportunities.

The small-scale fishers in the area are progressively being better linked with the local FLAG called "Almería Coast FLAG", thanks to the small-scale fisher's local association (Pescartes) and its staff getting further involved in the needed meetings and aware of the funding opportunities they provide to collective projects. Thanks to these efforts the fisher association have won different proposals that serve the local development of the fishing sector. On the other hand, Pescartes has been active and successful accessing some national funds and private funds, that have allowed them to advance in ameliorating their commercialization strategies, raise awareness of their activity and their role in the Marine Reserve, among

other aspects. This funding opportunities for collective projects have been perceived by many fishers as opportunities to revert the situation and be able to have a better future prospect.

6.2.5 Future of the SSF sector

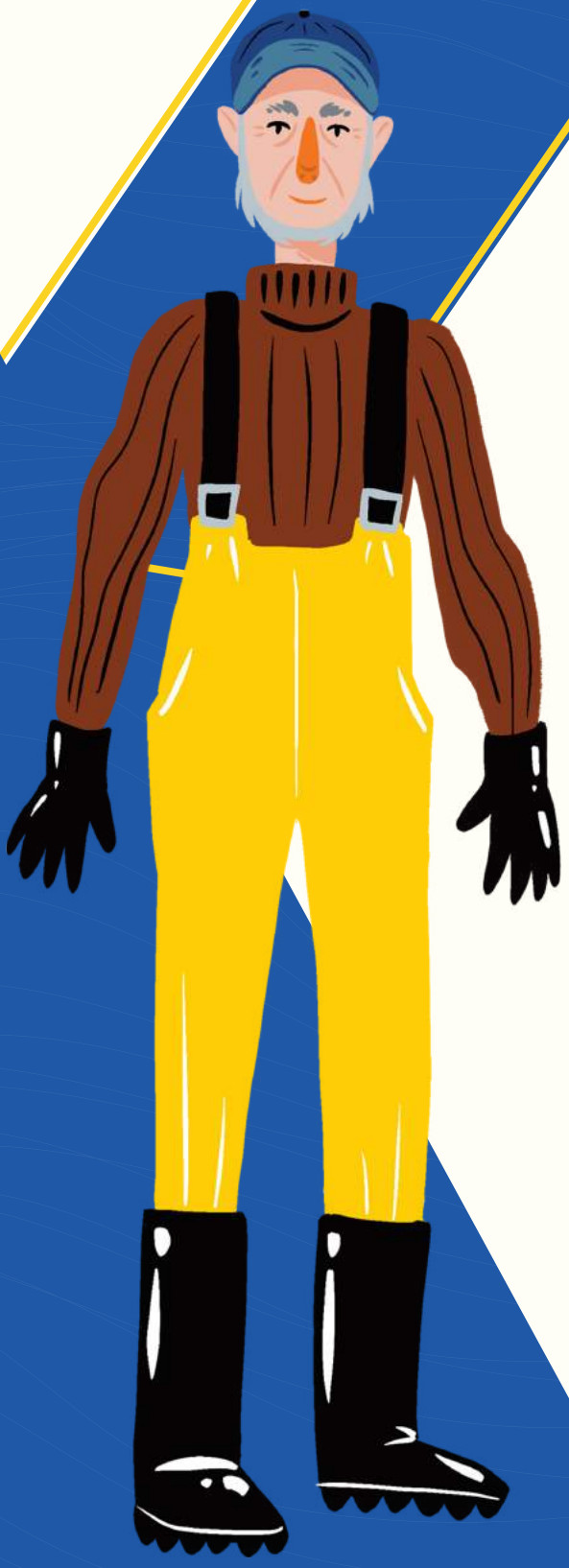
90% of respondents said they have children, the majority of whom (80%) are not employed in the fishing business. This proves to be very important. In fact, when asked "Would you advise young people to take up this profession?" almost all the fishers (90%) answered NO, giving as an explanation: the difficulty in carrying out the activity; how the earnings are not equal to the efforts and expenses that must necessarily be faced; and due to a lack of support for the sector. The solution to tackle these problems, as stated by the fishers themselves, concerns improving and implementing political and economic programmes aimed at supporting the analysed sector.

However, on asking whether they would be considering leaving the sector 80% of them mentioned no and only 20% of them are considering other jobs. Those cases, even though they are a minority within this sample are quite relevant because they refer to fishers of young age (under 30 years old), revealing the lack of prospects for the future of this generation within the sector. One of them has a clear idea to turn to be a taxi driver, but the other respondent declares he doesn't know what direction to take.

The solution to tackle these problems, as stated by the fishers themselves, concerns improving and implementing political and economic programmes aimed at supporting the analysed sector, providing capacity building to fishers and undertaking publicity campaigns to promote their products that could make retain their value added.

CHAPTER 07

Major Findings and Conclusions



1. Small but Important

In the Mediterranean, small-scale fisheries have traditionally received less research attention than the large-scale fisheries counterpart, and thus remain relatively under-studied (Guyader et al 2013). They have been largely studied as part of generic fishing sector research, as a segment along with the large-scale segment. Since the SSF catches are low and their economic importance is dwarfed by that of the larger-scale fleet, the SSF true social and economic story becomes intermeshed, or relegated, in the statistical figures that are not suitable to identify distinctive characteristics of SSF. While their regional contribution could be low, they can be locally important in economic terms, and undoubtedly crucial in social terms due to the attachment of communities to their territories, wellbeing, role of women and family in the enterprise, and the overall social sustainability of fishing communities (Garcia et al. 2008). In this study, our lens is deployed over a set of social and economic indicators to better analyse the small-scale sector, and we focus on three case studies: Pantelleria island (Italy), Marsaxlokk, St Paul's Bay, Mgarr Gozo (Malta) and Cabo de Gata Marine Reserve (Spain).

2. An ageing population

A common finding across the sector is the ageing situation of the small-scale fishery. A universal problem echoed across Europe where over (58%) of people employed in the EU fishing fleet fall in the 40-64 age class (STECF 2019). In this study, the number of fishers in the > 35 age cohort is less than 10% in all case studies, signifying a lack of generational renewal of the sector. Although almost all of the interviewed fishers have ancestral links to fishing, with their forefathers passing the enterprise through generations, such a trend does not seem to be laid in the future of the SSF, with almost all owners discouraging the next generation from up taking the activity as employment. Pursuing further education instead of taking over the fishing enterprise is a pattern that has been observed in Europe (Johnsen and Vik 2013), mostly as a result of perceived dwindling opportunities in fishing, and the attraction to more stable and secure income from other jobs. The fishers in this study have either primary or secondary lev-

el of education, probably owing to the fact that fishing does not require specific educational entry, and the trade is usually transferred and taught to different generations by the family and community, rather than through formal training. This is why fishing is considered as a way of life across many communities worldwide, rather than solely an economic activity (Santos 2015, Kadfak 2020). In some cases, fishing and agriculture are also perceived as a fall-back-option especially in times where alternative opportunities are lacking (Onyango 2011), or even as an activity of last resort (the only remaining, often least desirable option once all others have been excluded), although in this research, such correlation was not thoroughly investigated.

3. Attachment to the fishery

Has been noted as a fundamental factor for the fisher's persistence in the sector, especially in Malta and Pantelleria where most fishers have another employment to sustain the household. When compared to the cost of living in the Mediterranean countries, the average income such fishers net from fishing is quite low, thus recognizing the need for supplementary jobs. The operators of Pantelleria declared to have a revenue inferior to 5000 €/year and so they are mostly engaged in other activities, mainly agriculture, while in Malta the revenue goes from 5000 to 10000 €/year. In Cabo de Gata, 50% of the interviewees declared to have a revenue between 10000 and 20000 €/year. Moreover, fishers and their spouses or other family members also dedicate many unpaid hours to fishing activities over and above the fishing trip itself. The average number of hours spent on boat preparation, maintenance, fish sales and other activities amounts to 20 hours in all three locations. The total number of hours dedicated to preparation and the fishing trips is very high, when compared to the total income generated across the year. Being the owners of tools of production, self-employed fishers are responsible not only for the fish catch, but also for maintaining their fishing boats and gears in good condition. The latter involves unpaid work and long hours after fishing, underscoring fishers' economic, social and cultural dependence on the fishing sector. In most of the cases, all steps of the fishing process is shadowed by the women, who contribute to a lot of invisible

labour related to pre-harvesting and post-harvesting activities, along with representing fishing businesses while menfolk are away at sea, household duties and caring for dependent family members. A good proportion of the spouses from the sector also have an employment to sustain the household.

4. Access to fisheries quotas

Such as bluefin tuna and swordfish, tends to provide better income prospects to fishers, however, access is in some cases restricted by policies in place. In all three case studies, issues related to access to fishing opportunities and markets, predominantly quotas, has been recognized. Such findings echo the findings of a recent study which demonstrates how the small-scale and coastal fishing communities in Europe have faced access issues in the allocation of fishing opportunities to harvest marine resources (Said et al 2020). Those with quota are more likely to invest in their enterprise, including engaging crew, as opposed to smaller enterprises which are manned by the owner on his own. The fishers of Pantelleria do not employ crew on their vessels as they generally work alone or are occasionally helped by family members. This is predominantly because of the small vessels and short trips which they conduct which does not require many deckhands, and aside from the pre and post-harvesting activities, and due to lack of viability to provide remuneration to a crew member, considering it is already a part-time dedication. On the other hand, the operators of Malta and of the Spanish site engage crew through the system of shares or monthly renumeration. In most cases these are members of the family or the local communities, although the presence of foreign labour as deckhands was notable in both Spain and Malta. Investment in the sector is also an important component, with Spain being the lead to deploy economic effort toward vessel and gear renewal. This could be a consequence of the presence of younger operators who may be encouraged by the better economic prospects offered by the sector in their country, unlike the others where there is little interest from young people precisely due to their efforts not being rewarded by a sufficient economic return compared to invested hours of work, a reality reported across the Mediterranean SSF (FAO 2020).

5. EU funds and future prospects

Two main findings were apparent across the three case studies (i) SSF have a lack of knowledge of the European maritime and fishing policies, including the areas supported by the European Maritime and Fisheries Fund's 2014-2020 programme, and (ii) future prospects in the sector are low. For the former, it is however notable that a proportion of fishers in all three countries have benefited from EU economic support to invest in their activity. However, and related to the latter, the need to increase aid for sector was highlighted by questions about future prospects, where most fishers spoke about a bleak future for SSF. This study shows that with the younger generation not particularly interested in joining the sector, the future of the family-enterprise model is also questioned. Moreover, with the COVID-19 pandemic bringing about unprecedented realities, it is becoming increasingly apparent that small-scale fisheries require a strong social protection framework to ensure their resilience to unanticipated shocks (FAO 2020).

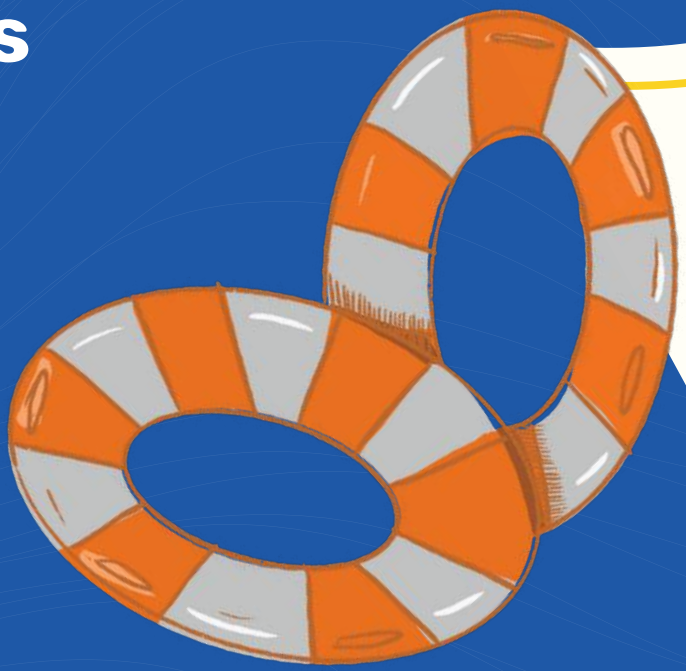
6. A future for SSF

There is a strong need for dedicated European aid to be provided for this sector and to make information on EU policies and funding opportunities more accessible. In addition, fishers need to be kept up to date on opportunities available to them and support provided to help them to apply for the necessary funding. With the EMFAF 2021-2027 Operational Programmes being drafted in all EU Member States, it is prime time to incorporate fishers in the discussion on how such aid could be used to align with the sector's needs and ameliorate its existence into the future. This would provide policy-makers with a holistic vision of how the SSF could be regenerated and become more attractive and encouraging for the younger generation to join. The current trends of the ageing population indicate that this EU programming period up to 2027 could have a 'make-or-break' effect on the future of SSF, as shown in all case studies. The new programming period could be focused on what can revive the SSF sector in terms of solutions in the improvement of marketing and fair trade of SSF products (LABMAF 2020), improving access to resources including quotas (Said et al 2020), as well as target-

ing funding towards collective projects and solutions at local level. In this regard, FLAGS or similar organizations should be strengthened and made functional, with the small-scale fishing sector having a dedicated voice in the formulation of their strategies and in the project formulation.

CHAPTER 08

References



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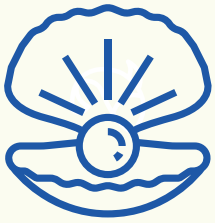

Annexes

TECHNICAL AND SOCIO-ECONOMIC CHARACTERISTICS OF SMALL-SCALE COASTAL FISHING COMMUNITIES

The questionnaire includes six sections

1. Demography
2. Boat ownership and characteristics
3. Structure of enterprise and Crew
4. Fishing as a livelihood
5. EU Fisheries Funds
6. Alternative sources of income
7. The future of the enterprise

The questionnaire respects the privacy regulations and data protection rules of EU.
Name _____ Date _____ Place_____

1. Demography

1,1 Owner of the boat: _____ 1.2 Sex ☐ Male ☐ Female 1.3 Age: _
1.4 Education: ☐ Less then primary ☐ Primary ☐ Secondary ☐ University
1.5 Are you operating the boat?
1.6 How long have you been a fisher?
1.7 Do you come from a fishing family?

2. Boat Ownership

2.1 How many boats do you own? __
2.2 Boat 1: Main fishing activity conducted by it
2.2.1 Boat length (m) ☐ <6 ☐ 6 – 9 ☐ 9-12 ☐>12 (specify____)
2.2.2 Age of the boat (years) ☐ 0 – 10 ☐ 10-20 ☐ 20-40 ☐ >40
2.2.3 Does the boat have multiple licenses for various fishing gear? Yes ☐ No ☐
2.2.4 Please list which licenses: _____
2.3 Boat 2: Main fishing activity conducted by it
2.3.1 Boat length (m) ☐ <6 ☐ 6 – 9 ☐ 9-12 ☐>12 (specify____)
2.3.2 Age of the boat (years) ☐ 0 – 10 ☐ 10-20 ☐ 20-40 ☐ >40
2.3.3 Does the boat have multiple licenses for various fishing gear? Yes ☐ No ☐
2.3.4 Please list which licenses: _____
2.4 Do you own swordfish or tuna quota? If yes, how much in tones? 2.4.1 swordfish: Yes ☐ No ☐
2.4.2 BFT: Yes ☐ No ☐. 2.4.3 BFT Tones: ____KG

3. Structure of the vessel enterprise and its crew members

3.1 Is fishing a family run business? Yes ☐ No ☐
3.2 Are you the sole owner? Yes ☐ No ☐
3.2.1 Is your spouse a co-owner of the enterprise Yes ☐ No ☐
3.3 Do you have other people working (crew or family) on the boat? If yes how many?

The following questions are about the crew

Crew

3.3.1 Crew member 1: Nationality _____
3.3.2 Sex ☐ Male ☐ Female 3.3.3 Age:_
3.3.4 Education: ☐ Less then primary ☐ Primary ☐ Secondary ☐ University
3.3.5 Type of relation Family member ☐ Local ☐
3.3.6 Is the crew employed ☐ Full time ☐ Seasonal
3.3.7 Remuneration: ☐ Wage ☐Shares ☐ Unpaid support
3.3.8 Main roles: Fishing ☐ Repair of vessel and gears ☐ Fish sales ☐
3.4.1 Crew member 2: Nationality _____
3.4.2 Sex ☐ Male ☐ Female 3.4.3 Age: ___
3.4.4 Education: ☐ Less then primary ☐ Primary ☐ Secondary ☐ University
3.4.5 Type of relation: Family member ☐ Local ☐
3.4.6 Is the crew employed ☐ Full time ☐ Seasonal
3.4.7 Remuneration: ☐ Wage ☐Shares ☐ Unpaid support
3.4.8 Main roles: Fishing ☐ Repair of vessel and gears ☐ Fish sales ☐

This question is about the support towards the fishing activity including repair, maintenance, fish sales, paper work etc.

Considering the amounts of work involved in preparation for fishing, sales of fishing, gear repair and maintenance, related to running the enterprise, how many hours per week do you and your crew invest in:
3.5.1 Repair and Maintenance of Gear_ hrs
3.5.2 Fish Sales: hrs
3.5.3 Boat preparation: hrs
3.5.4 Paperwork: ___ hrs
3.5.5 Others: ____ hrs (specify_____)

4 Fishing as a source of living

4.1. Is fishing the main source of income for you? ☐ Yes ☐ No
4.1.1 Comment_____
4.2 If no, what type of activity/job do you have?
4.3 What do you consider as your prime job? Fishing ☐ the other activity ☐
4.4 Average annual turnover from fishing activities (€) ☐ <5.000 € ☐ 5.000-10.000 € ☐ 10.000 – 20.000 € ☐ 20.000 – 50.000 € ☐ > 50.000 €
4.5 How many days per year do you go fishing? N. of days (aprox).
4.6 What is the total amount of your costs for fishing activities annually?
From this amount, what percentage is spent on:
4.6.1 Labour costs (crew) %age
4.6.2 Fuel %age
4.6.3 Maintenance costs: %age
4.6.4 Administrative costs (accountant) %age
4.6.5 Other (specify) %age (eg. ice, port, cooperative…)
4.6.6 Do you believe that the costs of fishing activities are completely covered? Yes ☐ No ☐
4.7 How was your income in the past 10 years compared to today?
Increased ☐ Decreased ☐ The Same☐
4.8 Do you think the income from fishing is adequate to cover family expenses? Yes ☐ No ☐
4.9 Does your spouse or partner has another job? Yes ☐ No ☐
4.10 How many family dependent members do you have?
4.11 Do you have a Mortgage/Bank loan (Vessel ☐ Boat ☐ Other ☐)?
4.12 How often does the owner invest in the activity?
☐ Rarely if ever ☐ Occasionally (once in 5 years) ☐ Regularly (every year)

4.13 What kinds of investments do you make in the company/family enterprise: ☐maintenance/ repair; ☐ modernizing equipment; ☐ other_____
4.14 Have these investments changes in the last 10 years? Decreased/ increased?

5. The following questions are about EU Funds

5.1 Are you familiar with European marine and fisheries funding systems (EU FUNDS)
Yes☐ No☐
5.1.1 Do you know what measures can be supported by the European Fund for Maritime Affairs and Fisheries program?
Yes ☐ No ☐
5.2 Have you ever applied for funding to support your fishing business or related diversification activities? Yes ☐ No ☐
5.2.1 Please specify _____
5.2.2 Did someone help you with the funding application form?
5.2.3 Was your application successful? Yes☐ No☐
5.2.4 If yes, what kind of support did you receive, and how did improve your fishing/profits/activity/sustainability?
5.2.5 Do you plan to apply for funding until 2020? Yes☐ No☐

6. The following questions are about alternative Sources of income

6.1 Do you have any other sources of income/ livelihood?
6.2 What are these activities? _____
6.3 How do they contribute to your annual income? ___ %age of income

7. The Future of the Enterprise

7.1 Do you have sons and/or daughters?
7.2 Do your children work with you on the vessel? Yes ☐ No ☐
7.3 Will they take the enterprise after you? If yes, when? If not, why?
7.4 Generally, would you suggest a young person/your children to be involved in SSF in your area?
Yes ☐ No ☐ Please specify why _____
7.5 Describe the key challenges facing the sector in your area _____
_____
_____
7.6 Did you ever consider leaving the sector?
*7.6.1 If so, what other jobs would you consider?
7.7 How this situation could improve?
7.7.1Comment (probe examples if necessary: Diversification/project/politics/etc.) _____
_____
7.9 How do you think the new generations could be more attracted to the sector?
7.10 What kind of support would be needed? _____
_____
7.10.1 Comment (probe examples if necessary: training and capacity building/etc.) _____
_____
_____


LOW IMPACT
FISHERS OF
EUROPE


MAVA
FONDATION POUR LA NATURE