European Commission, DG MARE

Studies for carrying out the Common Fisheries Policy:
Lot 3 Socio-economic dimensions in EU fisheries
Italy: Cefalù case study report

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List of abbreviations and acronyms

DCF  Data Collection Framework
EU   European Union
FLAG Fisheries Local Action Groups (Coastal Action Group)
GSA  Geographical sub-Area
GT   Gross Tonnes
GVA  Gross value Added
IREPA Institute for Economic Research in Fishery and Aquaculture
LAU  Local Administrative Unit
nm   nautical miles
1. Methods

1.1 Secondary data sources
The secondary data used in this report are mainly fisheries-related data collected by IREPA which have been extrapolated to estimate values at the local level. The IREPA database consists of annual landings data by species as well as annual cost data. The level of geographical aggregation of this data (fleet stratum) is represented by the northern coast of Sicily, while the "technical" aggregation level consists of the predominant fishing gear (as in the Data Collection Framework, DCF) and length class.

For each fleet stratum, data per unit of LOA (landings and revenues and added value) or per vessel (number of employees) have been estimated. The values for the fleet segments of Cefalù have been calculated by multiplying the unitary data by the total LOA or number of vessels of that fleet segment. The level of reliability of this data is not calculated, however, data collected by IREPA have an acceptable level of reliability at GSA level (as this is the geographical level requested by DCF). At a higher level of resolution, such as the local community analysed, data cannot be considered as reliable and needs a confirmation by local stakeholders. Data on number of vessels, gross tonnage, LOA and engine power per year have been collected through the Italian fishing fleet register and scaled up by IREPA.

Outside the fisheries sector, data on the number of firms (active firms) have been collected through the Provincia di Palermo, which has produced estimates of data from the Chamber of Commerce. This data has been further extrapolated to assure homogeneity across the period. Some additional information on the main features and problems in the area have been obtained through the local management plan for the management unit “Palermo east – gulf of Termini Imerese” prepared by the CO.GE.PA “Golfo di Termini Imerese – Palermo Est” in collaboration with IREPA Onlus. This information has been discussed and revised with local stakeholders during the focus groups.

1.2 Focus groups
A meeting with local stakeholders and fishermen of Termini Imerese and Cefalù was held at the Termini Imerese port in the office of a fishing cooperative in S. Anna square. The meeting was held on 17th April 2013 at 17:00.

The group of participants to the meeting was selected in an attempt to include representatives of all fleet segments (vessels owners), who were also representative of the different fishing cooperatives operating in Termini Imerese and Cefalù, and representatives of fishers employed on vessels from Termini Imerese or Cefalù ports. The meeting was attended by 22 people covering all fleet segments active in the two ports. Even though other people were invited, some of them could not participate because they were involved in fishing activities.

Management of the meeting was very difficult as a consequence of the economic difficulties the local fishing communities are experiencing. Local people were more interested in describing their problems
and expressing their concerns about the regulations imposed at a European level and the very stringent controls on purely formal violations than discussing the specific issues of the project.

Some additional interviews directed to collect information on the evolution of the touristic sector were held on 11th June 2013 at the bathhouse Poseidon on the seafront of Cefalù.

1.3 Questionnaires
The sample of people interviewed for both the vessel owner group and the group of people employed on vessels is larger than the number of people involved in the focus groups. However, problems with interviewing fishers employed on vessels lower than 6 m other than the owner or skipper (self-employed) were encountered as a consequence of the extremely low number of this category.

A total of 30 questionnaires were submitted to the local fishermen. 10 questionnaires were compiled for vessels owners (5 for polyvalent lower than 6m and 5 for polyvalent over 6m) and 20 questionnaires were compiled for crew members (10 for polyvalent lower 6m (5 self-employed and 5 crew members) and 10 for polyvalent over 6m (5 skippers and 5 crew members). Most of the tables reported below are based on questionnaires submitted to vessels owners, while the other questionnaires are used to complete the information and the qualitative description of the local social context.

2. Settings

2.1 Description of case study sites
Cefalù is a single local administrative unit of level 2 (LAU2) located in the province of Palermo (NUTS3: ITG12) in Sicily (NUTS2: ITG1). Sicily is an Italian region and is the largest island in the Mediterranean Sea. The total area of Cefalù is 65.80 km², at a latitude of 38° 2’ 13” N and longitude of 14° 1’ 19” E. With a population of 13,807, this results in a population density of 209.83 people per km². The nearest administrative centre is represented by the Municipality of Cefalù (Comune di Cefalù). The distance from Cefalù to Palermo, the capital of Sicily, is 68 km.
Figure 1. Map of Cefalù  
Source: Google Maps.

Cefalù has a temperate climate with warm and dry summers and cool and rainy winters (Mediterranean climate). Temperatures in spring and autumn are mild and pleasant and frequently ventilated due to the presence of sea breezes in the summer, especially in July and August, when the presence of the sirocco wind is not uncommon.

The average temperature of the coldest month, January, falls between 9°C (minimum) and 14°C (maximum), while that of the warmest month, August, lies between 22°C and 30°C. Rainfall averages about 741 mm per year. The wettest period occurs from October to February with a monthly average of about 100 mm, while the driest month is July with only 6 mm of rainfall. The average length of the day is 12 hours and 13 minutes reaching a maximum in June (14 hours and 47 minutes) and a minimum in December (9 hours and 36 minutes).

Traces of the site date back to prehistoric times. The megalithic walls, dating back to the end of the fifth century BC, which surround the current centre are still largely preserved, refer to a pre-Hellenic settlement. In the fourth century BC, the Greeks named the indigenous centre Κεφαλοίδιον (Kefaloidion), from the Greek Kefa or kefalé (i.e. head or chief), probably referring to the promontory. In 307 BC it was conquered by the Syracusans then in 254 BC by the Romans, who gave it the Latin name of Cephaloedium. With the fall of the Roman Empire in the late fifth century AD and the advent of the Byzantines, the village moved from the plain on the rock, where traces of fortification done in that period are still present. In 858, after a long siege, it was conquered by the Arabs, who gave it the name
of Gafludi. In 1063 it was conquered by the Normans of Roger I and, in 1131, thanks to Roger II, was reoccupied the ancient settlement on the coast. Since the death of Frederick II (1250) the political situation of the city has been quite complicated. Cefalù was passed from one feudal lord to another until, in 1451, was finally rescued by the Bishop of Cefalù. The subsequent history of Cefalù can be assimilated with that of Sicily and the rest of Italy. After the landing of Giuseppe Garibaldi in Sicily in January 1861, the city declared its annexation to the Kingdom of Italy.

2.2 Demographics
In 2011, the population of Cefalù was approximately 13,800, very similar to the level registered in 2002. Despite the decline until 2006 and increase thereafter (highlighted in Figure 2), total variation during the period under analysis was lower than 0.2%. From 2002 to 2011, the relatively little change in the population of Cefalù contrasts with the increasing trends recorded for the rest of Sicily and Italy, which show a growth of 1.7% and 6.4% respectively.

![Figure 2. Trends in population of Cefalù over the period 2002-2011](image)

Source: Italian National Statistical Institute (ISTAT).

In 2011, the age structure of the population of Cefalù shows a prevalence of older age classes with 56% of individuals aged over 40. The age class 41-65 is the most dominant, accounting for 34% of the total. From 2002 to 2011, the local population has become older, reflected in the decline in the age classes 0-18 and 19-40 which have decreased by 15% and 5% respectively, and the growth of the age classes 41-65 and over 65, which have increased by 6% and 14% respectively. The age structure of Cefalù is more similar to Italy than Sicily as the latter shows an equal distribution between the population under and over 40. In contrast, ageing of the population is a common trend at national, regional and local level.
Almost 98% of the population is Italian, while the remaining 2% are equally distributed between EU and non-EU citizens. The population composition is similar to the Sicilian population (97% Italian, 1% other EU and <2% non-EU) whereas the dominance of non-EU citizens is higher at the national level (around 5%), where people from other EU countries account for 2% of the total population.
As data on life expectancy at birth is not available at local level, Figure 6 shows life expectancy for the province of Palermo. These data, which are almost identical to the data recorded for Sicily, indicate that the life expectancy in Palermo is slightly lower than that estimated nationally.

2.3 Employment opportunities/sector overview
The economic structure of Cefalù is mainly based on tourism. The development of the tourism sector in Cefalù can be dated back to 1951 with the inauguration of the Village Magique, which was replaced in 1957 by the Club de la Mediterranee. The promotion of Cefalù as a tourist destination was carried out through sporting events and famous movies shot there that lead to Cefalù hosting well-known people in show business. In the 60s and 70s the increased numbers of tourists gave rise to a significant number of hotels. In the 70s and 80s, tourism in Cefalù was further developed through singing and fashion events and the continuation of sporting events. Also during the 90s, an important number of art, culture and entertainment events frequently took place for the promotion of tourism in Cefalù. However, there has been a significant reduction in the number of events held over the last ten years, mainly due to the lack of financial contributions for the organization of these events. Nevertheless, a number of important hotels have been opened in the last ten years and the tourism sector is currently the most important in
Cefalù representing around 60% of the local economy (estimated by local stakeholders). Another important sector is represented by the Public Administration and public services, like education and welfare services. The fishing sector is very marginal in the local economy representing around 1% of the total number of employees. In 2001, as reported in Table 1, just 58 people were employed in this sector and this number has not changed significantly in subsequent years. Even though a total of 102 fishers was estimated by IREPA in 2011, local stakeholders stated that this is an overestimate.

Unfortunately, the only information on the relative dominance of the various economic sectors at municipality level is provided through the census carried out by ISTAT (Italian national statistical institute) every ten years. The last census was carried out in 2011, but data is still not available. Based on the ISTAT census in 2001, 500 people, accounting for 13% of total employees, were employed in hotels and restaurants. An additional 30% of total employed were related to sectors dependent on tourism. Indeed, almost 600 people (16% of the total) were employed in commerce and more than 200 (6% of the total) in transport, which are strictly related to the tourism sector. Furthermore, the construction sector, which accounted for 300 people employed (8% of the total), is dominated by the construction of hotels and other types of accommodation and services for tourists. Public Administration and other public services, like education and welfare, accounted for around 37% of total employees, while only 5% were employed in the manufacturing sector.

Recent data provided by the Chambers of Commerce and extrapolated by the statistics office of the Province of Palermo on the number of active firms by economic sector are shown in Figure 7. Although the number of firms cannot be considered a reliable indicator of the relative importance of an economic sector, information on the trend within each specific sector can be derived. In particular, the number of active hotels and restaurants shows an increase of almost 30% from 2005 to 2011. Also active firms in the building and transport sectors have increased by approximately 10%, while commerce has remained stable. On the contrary, the manufacturing sector and the sector of agriculture, forestry and fishery have declined by around 25%. These trends seem to indicate that Cefalu is becoming increasing dependent on tourism as employment is increasingly concentrated in this economic sector while dependence on other economic sectors is declining.

Table 1. Employment by activity in Cefalù in 2001

<table>
<thead>
<tr>
<th>Economic sector</th>
<th>Employees 2001</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishery and related sectors</td>
<td>58</td>
<td>1.5%</td>
</tr>
<tr>
<td>Mineral extraction</td>
<td>5</td>
<td>0.1%</td>
</tr>
<tr>
<td>Manufacture sector</td>
<td>194</td>
<td>5.1%</td>
</tr>
<tr>
<td>Production and distribution of energy, gas and water</td>
<td>13</td>
<td>0.3%</td>
</tr>
<tr>
<td>Building sector</td>
<td>300</td>
<td>7.9%</td>
</tr>
<tr>
<td>Commerce</td>
<td>589</td>
<td>15.6%</td>
</tr>
</tbody>
</table>
## Hotel and restaurant sector report

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel and restaurant</td>
<td>500</td>
<td>13.2%</td>
</tr>
<tr>
<td>Transport</td>
<td>213</td>
<td>5.6%</td>
</tr>
<tr>
<td>Financial services</td>
<td>79</td>
<td>2.1%</td>
</tr>
<tr>
<td>Other private services</td>
<td>305</td>
<td>8.1%</td>
</tr>
<tr>
<td>Public Administration</td>
<td>267</td>
<td>7.1%</td>
</tr>
<tr>
<td>Education</td>
<td>530</td>
<td>14.0%</td>
</tr>
<tr>
<td>Welfare services</td>
<td>617</td>
<td>16.3%</td>
</tr>
<tr>
<td>Other public services</td>
<td>109</td>
<td>2.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3779</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Italian National Statistical Institute (ISTAT)

![Figure 7. Number of firms operating in Cefalù by economic activity over 2005-2011](chart)

Source: Elaborations on Chamber of Commerce data

---

### 2.4 Fisheries

Fishing activities in Cefalù, as in the majority of Italian coastal areas, are predominantly artisanal. This is evidenced by the extreme polyvalence of fishing activities and the multi-species landings composition, which reflects the high biological diversity of fish populations. Indeed, almost all vessels use a multitude of fishing systems and gears and switch from one to another in the different periods of
the year, adapting fishing strategies to the features of the target species. The fishing activities are mainly aimed at catching large pelagic species such as swordfish, albacore and common dolphinfish using longlines, demersal species with static gears (trammel net, gill net), and small pelagic species with seines.

In 2011, 50 vessels were registered in the maritime district office of Cefalù. Based on the DCF fleet segmentation criteria (LOA and predominant fishing gear), these are classified as reported in Table 2. This table reports the number of vessels, the average length and the fleet category selected for reporting in this study. The unique vessel classified as a purse seiner (PS) has been excluded from the analysis for its limited effect on the local fisheries community and for confidentiality reasons. Each of the remaining fleet segments has been analysed with respect to the landings composition. Significant differences arose between vessels smaller than 6 m in length and larger vessels. As a consequence, two fleet categories have been defined, “Polyvalent VL0006” and “Polyvalent VL0618”. The combination of 4 DCF fleet segments into the fleet category “Polyvalent VL0618” for the purposes of this study is justified by the similarities in fishing gears used and main species landed. No significant differences between vessels classified as PGP (vessels using polyvalent passive gears only) and PMP (vessels using active and passive gears) have been identified in terms of landings composition. Furthermore, even though vessels belong to different length classes, their LOA is not very dissimilar. The average length of vessels bigger than 12 m is 13.1 m with a maximum of 14.2 m for a vessel belonging to the fleet segment PMP VL1218. Therefore the final list of fleet segments analysed in this report are: Polyvalent VL0006 and Polyvalent VL0618.

Table 2. Cefalù fleet segments and fleet categories

<table>
<thead>
<tr>
<th>DCF fleet segment</th>
<th>Number</th>
<th>Fleet category</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGP VL0006</td>
<td>21</td>
<td>Polyvalent VL0006</td>
</tr>
<tr>
<td>PGP VL0612</td>
<td>14</td>
<td>Polyvalent VL0618</td>
</tr>
<tr>
<td>PGP VL1218</td>
<td>3</td>
<td>Polyvalent VL0618</td>
</tr>
<tr>
<td>PMP VL0612</td>
<td>3</td>
<td>Polyvalent VL0618</td>
</tr>
<tr>
<td>PMP VL1218</td>
<td>8</td>
<td>Polyvalent VL0618</td>
</tr>
<tr>
<td>PS VL1218</td>
<td>1</td>
<td>excluded</td>
</tr>
</tbody>
</table>

All vessels are classified as polyvalent, 28 over 6m and 21 under 6m. These vessels use both active and passive gears, but none of these can be identified as predominant. As a consequence, the landings composition is characterized by the presence of both demersal and pelagic species. The polyvalent vessels over 6m fish also large pelagic species, like swordfish and albacore.
Table 3 shows the number of new constructions in Cefalù in the period 2006-2011. Data are based on the construction year of the vessels belonging to the Italian fleet at 31/12/2011 as provided by the Italian managing authorities and included in the IREPA database. During this period, two new vessels entered the local fleet. Both, a PGP VL0612 and a PMP VL0612, were polyvalent vessels between 6 and 12 m. No public funds were received for the new constructions.

Table 3. New vessels entering the fleet of Cefalù

<table>
<thead>
<tr>
<th>Cefalù</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>New constructions</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total fleet</td>
<td>57</td>
<td>57</td>
<td>58</td>
<td>58</td>
<td>57</td>
<td>50</td>
</tr>
<tr>
<td>% of new entrants</td>
<td>1.8%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.7%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Source: IREPA database

In 2011, the Cefalù fleet landed around 315 tonnes in total, equivalent to more than EUR 2 million in value, registering a reduction of 60% in volume and over 40% in value when compared with 2006 production. The large reduction in landings was partially counterbalanced by an increase in the prices of the most important species resulting in a less pronounced reduction in revenues. Furthermore, the increase in fuel price registered since 2008 has represented an additional negative factor for the economic performance of the fleet.

Polyvalent vessels over 6m produce more than 70% of the total landings, while vessels lower than 6m account for around 10%. The remaining production is mainly accounted for by European anchovies landed by a purse seiner. In terms of revenues, Polyvalent VL0618 contribute more to local production (over 80%), while polyvalent vessels below 6m represents around 15% of total revenues and the purse seiner accounts for less than 5%. The purse seiner is not included in the analysis.

Most of the vessels of Cefalù are active in the GSA 10 and within 12 nm of the coast, however, some vessels using drifting longlines fish also outside the 12nm in other GSAs in some periods of the year. Generally, with the exception of vessels using drifting longlines for specific periods, the average trip length for all fleet segments is 1 or 2 days.
As reported above, the area is characterised by a great variety of stocks. Statistical data on landings and prices are collected for more than 60 species, however, the five species groups with the highest landings value are swordfish, albacore, common dolphinfish, European anchovy (mainly landed by the purse seiner) and squid, which account for almost 70% of total revenues. Swordfish alone represent almost half of total revenues, but biological data for these stocks are very limited.

Recent assessments of Mediterranean stock of swordfish (*Xiphias gladius*), carried out by ICCAT using mostly Spanish, Greek and Italian data, indicate that the rate and the level of current exploitation are not sustainable in the short and long term. Furthermore, the same assessments show a high presence in the capture of younger individuals which have never reproduced (about 50-70% of the total catch) and a very small number of large individuals.

Cefalu has two harbours, the Old Port to the west and Presidiana to the east of the rock. The first is now rarely used by fishing boats, especially in summer, while the second one is fully operational. The main harbour is protected by a breakwater with two arms. The dock includes two piers: one is T-shaped reinforced concrete with two interior breakwaters from both sides; the second is an iron one, where hydrofoils dock. The innermost part of the harbour, at both dock and anchor, is reserved for the fishing sector. The port is equipped with all the facilities at the dock.

### 2.4.1 Fleet segment 1: Polyvalent VL0006

The fleet segment Polyvalent VL0006 consists of vessels with a total length below 6m, with 1 GT and 2 kW on average. Given the small size of these vessels, crew generally consist of a single fisher. As this person is generally the vessel owner, skipper and crew combined, the employee-type is defined as 'self-employed' here. These vessels use both active and passive fishing gears like trammel nets, gillnets, hooks. The main target species are squid, common octopus, greater amberjack, European hake and common cuttlefish.

A declining trend in the volume and value of landings has been recorded over the last six years as well as a reduction in the number of vessels. The reduction in revenues and the increase in operating costs (fuel costs in particular) have resulted in a decline in the profitability of these vessels.

**Fleet segment as a whole**

As reported above, vessels in this fleet segment are generally managed by a single fisher who owns a single vessel and brings together the roles of manager, skipper and crew. Even though occasionally a
crew member other than the owner exists, none were recorded in the 5 questionnaires submitted to vessels owners in this fleet segment. Statistical sources (IREPA database) show that the average number of employees is around 1.3 and has not changed over time, while the total number of employees has decreased following the trend in the number of vessels.

Regarding the role of women, the stakeholder focus group stated that women do not have any direct role in fishing activities, however, in some cases, given the long absence of fishermen from the mainland, wives carry out an administrative role on behalf of their husbands. Furthermore, the absence of fishermen from the mainland causes their spouses or partners to play a central role in family decisions and child care. The decision-making processes related to fishing activities are the sole responsibility of the vessel owner, who is generally the only crew member. Other family members, like spouses or partners, are not involved in these decisions, which are guided by the seasonality of fishing activities.

This fleet segment consists of 21 vessels (2011 data), which employ 26 people, highlighting that it is a rare occurrence to have more than one person employed per vessel. Table 5 shows that all questionnaires submitted to vessels owners have recorded the presence of a single person employed. All employees were male and of local origin and were equally distributed among the age classes with the exception of the class lower than 18 where no case has been registered (see Table 5 and Figure 3. Age structure of the population of Cefalù over the period 2002-2011Figure 3).

### Table 5. Demographics by employee type. Polyvalent VL0006 (n=5)

<table>
<thead>
<tr>
<th>Employee type</th>
<th>Number of employees</th>
<th>Gender</th>
<th>Age</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>0-18</td>
</tr>
<tr>
<td>Managerial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Administrator</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Self-employed</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Crew</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

n: number of questionnaires.
Source: Consultants calculations based on the questionnaires.
Figure 8. Demographics of business within the Polyvalent VL0006 (n=5)
Source: Consultants calculations based on the questionnaires.

The questionnaires submitted to fishermen show that their families consist of 2 people on average, which is the result of an equal presence of unmarried people and married people with a son (or daughter). Wives and daughters are not involved in the fisheries sector, while the sons might be. Wives are generally housewives.

Table 6 shows the number of employees registered through questionnaires divided into family and non-family members. As all employees comprise vessels owners and their householders, all of them are reported as family members with management role.

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>Number in management roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family employees</td>
<td>5</td>
</tr>
<tr>
<td>Non-family employees</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

n: number of questionnaires.
Source: Consultants calculations based on the questionnaires.
Estimates based on data provided by IREPA show a total GVA for the fleet segment equal to EUR 167,000 in 2011. This is equivalent to a GVA per vessel of almost EUR 8,000 per year. From 2006 to 2011, GVA per vessel has declined by almost 50%, corresponding to the reduction in total revenues by a similar percentage.

<table>
<thead>
<tr>
<th>Variable (EUR)</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVA</td>
<td>406058</td>
<td>330716</td>
<td>165716</td>
<td>308498</td>
<td>111869</td>
<td>167051</td>
</tr>
<tr>
<td>GVA/vessel</td>
<td>15039</td>
<td>12720</td>
<td>6374</td>
<td>11865</td>
<td>4475</td>
<td>7955</td>
</tr>
</tbody>
</table>

Source: Elaborations on IREPA data

Landings by this fleet segment are mainly composed of demersal species, which represent almost 85% of the total. Squid and common octopus represent more than 30% of total landings. The remaining landings are mainly composed by pelagic species, where greater amberjack represents the most important species. From 2006 to 2011, total landings volume has been reduced by 50%. Landings of demersal and pelagic species have been reduced by 46% and 67% respectively.

In terms of landings value, demersal species represent 85% of the total revenues. Squid and common octopus represent more than 35% of total revenues for this fleet segment. The remaining 15% of revenues comprises mainly pelagic species, where greater amberjack represents the most important species (around 10% of total revenues). From 2006 to 2011, the reduction in landings volume has resulted in an estimated 48% reduction in revenues. This reduction is mainly due to demersal species, which have also decreased in price. In contrast, the reduction in landings for pelagic species has been partially counterbalanced by an increase in the market price.
Figure 10 Trends in landings value for Polyvalent VL0006
Source: Elaborations on IREPA data

Figure 11 shows the trends in prices for the main species (or groups of species) landed by vessels classified as polyvalent smaller than 6m. Marine fishes nei (this group includes all fishes not classified elsewhere) and squids represent the main target species in terms of revenues, accounting for more than 45% of the total. The price of both species have declined by 18% during the period analysed whereas the price of common octopus, which represents 13% of total landings value, has shown a stable trend. The other two main species, greater amberjack and European hake, have increased in price by 16% and 23% respectively.

Figure 11 Trends in landings prices of main species for Polyvalent VL0006
Source: Elaborations on IREPA data
The number of vessels has declined (Figure 12), as has the gross tonnage and engine power (Figure 13 and Figure 14). The most pronounced reduction has taken place in the last year of data available. Indeed, the vessels have decreased from 27 units in 2006 to 25 in 2010 and to 21 in 2011. The Fleet Register shows that between 2010 and 2011 two vessels moved to other ports and two vessels were decommissioned (one of which was scrapped with public aid).
Remuneration type is based on share contracts. In this arrangement, the difference between revenues and operating costs is divided into two parts, one which is used to remunerate the crew and the other the ship owner. This type of contract predominates in the Mediterranean fishing sector. Even though a minimum salary is established by the Italian laws, this is used only for calculating and paying the social security contributions.

Table 8. Remuneration type by vessel. Polyvalent VL0006 (n=5)

<table>
<thead>
<tr>
<th>Remuneration type</th>
<th>No. people</th>
</tr>
</thead>
<tbody>
<tr>
<td>piece</td>
<td>0</td>
</tr>
<tr>
<td>share</td>
<td>5</td>
</tr>
<tr>
<td>wage</td>
<td>0</td>
</tr>
</tbody>
</table>

n= number of questionnaires.
Source: Consultants calculations based on the questionnaires.

As reported above, there is a negative trend in the economic performance of the fleet segment. The reduction in revenues and the increase in fuel costs have resulted in a significant decline in the gross value added. The stakeholders interviewed have identified the European and international regulations as the main causes of the situation. These regulations have reduced the possibility for larger vessels to target tuna and swordfish (which were previously the most important target species of larger vessels) forcing them to compete for the same species fished by smaller vessels. This has increased the fishing effort on these species leading to a reduction in biomass. Furthermore, it is thought that restrictions to the large pelagic fisheries are also creating problems for the sustainability of small pelagics due to the increase in large pelagic predators such as tunas preying on the smaller fish.

The larger vessels mentioned above are not only those located in the port of Cefalù. As local stocks are defined at level of GSA 10 (the geographical area includes the Tyrrhenian coasts of Campania, Calabria and Sicily), the increase in fishing effort for demersal stocks as well as the reduction in biomass of small pelagic stocks due to the presence of tunas cannot be limited to the area of Cefalù. All biological phenomena related to the stock biomass are analysed at a higher geographical level than that represented by a local coastal community.
**Employees within segment**

For all employee-types, pensions are the only type of benefit provided by the fishing business with no additional benefits beyond regular salaries and pensions. All fishers employed in this fleet segment declare they have an annual salary below EUR 10,000.

Table 9. Salary band by employee type (EUR). Polyvalent VL0006 (n=5)

<table>
<thead>
<tr>
<th>Employee type</th>
<th>&lt;10,000</th>
<th>10,000-19,000</th>
<th>20,000-29,000</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Administrator</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Self-employed</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Crew</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

n= number of questionnaires.
Source: Consultants calculations based on the questionnaires.

Entering the fleet segment does not require any specific attribute other than to be male, in good health and member of a family involved in the fisheries sector. Generally, the only qualification fishers interviewed stated they hold is the seaman certificate (libretto di navigazione). There are three different categories associated with this certificate and all fishers in this fleet segment are registered as third category (specific for coastal fishing). However, registration to the first or third categories does not require specific attributes or skills but rather is simply an administrative document needed to be employed on a vessel. Fishers can obtain other qualifications based on their experience or attending specific training courses, however, given the family-based organization of the local fishing sector, they do not need additional qualifications to work.

Most of the fishermen interviewed have been educated to primary level (Figure 15). All of those interviewed got their first job in the sector. Even though the majority were not satisfied with their job, only few of them have actually looked for a different job in the past. Nevertheless, they indicated they would like to change job in the future but were not able to indicate what this alternative job should be other than outside the fishing sector.

In the past, especially in the 80s and 90s, some fishers left their job and were employed as waiters for the Club de la Mediterranee or other big hotels. Only very few of them have started parallel activities in the tourism sector, such as fishing tourism.
In the past, skills and experience in the fishing sector were passed down between generations within a family. The transfer of skills was carried out through the direct involvement of sons in fishing activities, starting at a young age. Questionnaires indicated that the fathers of all fishers interviewed were themselves fishers. But although some fishers’ sons are also now fishers, more recent generations are generally less interested in the fishing sector and their fathers would like a different job for them.

Fishers’ perception of their own wealth is low. This perception is not restricted to this fleet segment, but is general for the whole fishing sector. Their level of wealth has reduced in the last years. Local fishermens stated that the economic condition of the local fishing sector changed with the introduction of some EU regulations, which did not take into account local specificities and have negatively affected the sector.

Fishers do not feel they are represented by European, national or local institutions, nor by organizations like labour unions. They complain about a complete lack of representation of their interests and economic situation. The only organizations available are the fishing cooperatives, which only provide administrative support.

In response to the negative trend in economic performance of the fleet segment, fisher behaviour has been quite static. Other than attempts to modify the composition of landings by switching among the different target species and fishing gears available under their fishing licenses, there is little else they
can do to change their situation. This is due to the lack of institutions and/or organizations able to defend their interests and suggest solutions. Furthermore, the low education level of the people involved in this business, the lack of individual ability to initiate new activities and the total absence of organised groups present constraints to the potential for adaptation. The presence of an important tourism sector provides real opportunities for diversification of their activities, but only a few have been able to profit from these possibilities. Given the recent establishment of FLAGs in the area, these have not yet started specific initiatives to favourise diversification of fisher activities into tourism.

2.4.2 Fleet segment 2: Polyvalent VL0618

The fleet segment Polyvalent VL0618 consists of vessels with an overall length longer than 6m, with 6 GT and 65 kW on average. Employees generally consists of two or three fishermen; a skipper and one or two crew members. However, similarly to the Polyvalent VL0006, some vessels are managed by a single person. In these cases, these are defined as self-employed. Therefore, three employment types are defined for this fleet segment: self-employed, skipper and crew. These vessels use both active and passive fishing gears such as bottom longlines, trammel nets, gillnets, hooks and trawl nets. The main target species are swordfish, common dolphinfish, albacore and European hake. Compared with 2006, landings have undergone a significant decline in both in volume and value, while the number of vessels classified as polyvalent over 6m is approximately the same. The reduction in revenues and the increase in operating costs (fuel costs in particular) have resulted in a decline in the profitability of these vessels between 2006 and 2008. That year was the most critical for the fleet segment, particularly due to the sharp increase in fuel price. The subsequent period, despite higher values compared to 2008, shows a declining trend in revenues and added value.

Fleet segment as a whole

As reported above, vessels in this fleet segment are generally managed by two to three fisherman. The skipper is generally also the vessel owner, typically owning a single vessel. The number of employees does not change over time; of 5 vessels owners interviewed in this fleet segment, none reported that they change the people employed during the year. Local fishers stated that crew members are generally selected from within the family unit, however, among the three crew members other than the vessel owner who responded to the questionnaires, two have no family relationship with the owner and one is the vessel owner’s son. Since 2007, the average number of employees is stable with fluctuations between 2.5 and 2.7 people per vessel, and the total number of employees varying between 75 and 80 people.

Regarding the role of women, the stakeholder focus group informants stated that women do not have any direct role in fishing activities. However, in some cases, given the long absence of fishermen from the mainland, their wives carry out an administrative role on behalf of the husbands. Furthermore, the absence of fishermen from the mainland requires that their spouses or partners play a central role in family decisions and child care. The decision-making processes related to the fishing activities is totally managed by the vessel owner, who is generally also the skipper. Other family members, like spouses or partners, are not involved in these decisions, which are guided by the seasonality of fishing activities.
This fleet segment consists of 28 vessels (2011 data). While the current average number of employees per vessel is estimated by IREPA as 2.7 people, accounting for around 76 employees, local fishers stated that the real number is lower as there are many vessels managed by a single fisherman. All employees are male and of local origin and employees are concentrated in the age class 40-65 and 18-40 (see Table 10 and Figure 16).

Table 10. Demographics by employee type. Polyvalent VL0618 (n=5)

<table>
<thead>
<tr>
<th>Employee type</th>
<th>Number of employees</th>
<th>Gender</th>
<th>Age</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>0-18</td>
<td>18-40</td>
</tr>
<tr>
<td>Managerial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Self-employed</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Skipper</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Crew</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

n: number of questionnaires.
Source: Consultants calculations based on the questionnaires.

Figure 16. Demographics of business within the Polyvalent VL0618 (n=5)
Source: Consultants calculations based on the questionnaires.
The questionnaires submitted to fishers show that families typically consist of 2-3 people for both crew members and skippers. Generally, these are the householder, his wife and one or two sons (or daughters). Cases of employees living with their parents were not recorded. The women in the family are generally not involved in the fisheries sector; only an isolated case of a wife working in fish commerce with her son was documented. In general women are housewives. Besides the son who was involved in fish commerce mentioned above, the questionnaires did not provide additional information on these categories. However, local fishermen stated that they would prefer a job other than fishing for their sons. In general, sons of fishers are students with very few involved in the fishing sector.

Table 11 shows the number of employees who completed questionnaires divided into family and non-family members. As reported above, two of the three crew members other than the vessel owner have no family relationship with him. The participation of family members, mainly sons, in the fishing activities of the householder is due to the traditional nature of the fishing activities, which are passed down from father to son.

Table 11. Level of family involvement in business. Polyvalent VL0618 (n=5)

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Number in management roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family employees</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Non-family employees</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

n: number of questionnaires.
Source: Consultants calculations based on the questionnaires.

Extrapolation of data provided by IREPA show a total GVA for the fleet segment equal to EUR 920,000 in 2011. This is equivalent to a GVA per vessel of around EUR 33,000 annually. From 2006 to 2011, GVA per vessel has reduced by more than 50%, however, the sharpest decline in profitability was registered from 2006 to 2008. In 2009, the economic performance improved followed by another declining trend. These variations in GVA are directly correlated with changes in total revenues, which fell by 40% from 2006 to 2011.

GVA per vessel can be indirectly estimated using the information from local fishermen about their current income. Table 15 shows that wages for employees in this fleet segment are lower than EUR 10,000. Considering that 2.7 people are employed on average on these vessels and that wages represent around 50% (as salary is based on the share contract) of the monte, i.e. the difference between total revenues and variable costs, monte per vessel should be lower than EUR 54,000. GVA per vessel can be calculated by subtracting fixed costs from monte. As fixed costs represent around 12% of GVA (this percentage is derived from AER data on Italian PGP and PMP fleet segments), GVA per vessel is expected to be lower than EUR 48,000.
Landings of this fleet segment are mainly composed by pelagic species, which represent almost 80% of the total. The main stock is swordfish, which represents more than 40% of total landings, followed by albacore (15%) and common dolphinfish (12%). Demersal fish, of which there are a large number of species, represent 20% of total landings. The most important demersal species is European hake, which represents 3% of total landings. From 2006 to 2011, total landings volume declined by 60%, however, the greatest reduction was recorded between 2007 and 2008. In 2009 there was an increase in production followed by a declining trend over the last two years.

In terms of landings value, pelagic species represent around 80% and demersal species around 20% of total revenues. The main stock is swordfish, which represents almost 60% of total revenues, followed by albacore and common dolphinfish representing less than 10% each. The most important demersal species is European hake, which represents 4% of total revenues. From 2006 to 2011, the reduction in landings volume resulted in a reduction in revenues estimated at 40%. The trend in revenues for both pelagic and demersal stocks in the period under analysis is very similar to that described above for landings. The reduction in landings of pelagic species has been partially counterbalanced by an increase in market price while prices for demersal species declined over the period analysed.
Figure 18 Trends in landings value for Polyvalent VL0618
Source: Elaborations on IREPA data

Figure 19 shows the trends in prices for the main species (or groups of species) landed by vessels classified as polyvalent larger than 6m. The price of swordfish has remained fairly stable while other pelagic species, like albacore and common dolphinfish, have increased significantly. In contrast, demersal species such as European hake and the group of Marine fishes nei (this group includes all fishes not classified elsewhere), have declined in price over the period analysed.

Figure 19 Trends in landings prices of main species for Polyvalent VL0618
Source: Elaborations on IREPA data
The number of vessels shows an increasing trend from 2006 to 2008 and a decreasing trend thereafter. Over the whole period, the number of vessels classified in this fleet segment has decreased by just a single unit moving from 29 in 2006 to 28 in 2011. In contrast, engine power and gross tonnage show an increase in 2007 and a declining trend thereafter. This would suggest a reduction in the average size and power of these vessels.

The increase in the number of vessels in the first period was due to the entry of 4 vessels, (2 which moved from other ports to Cefalù and 2 which were newly built), and the exit of 2 vessels (one of which was decommissioned and another moved to other port). The decline during the second period, from 2008 to 2011, was the result of 4 vessels entering the fleet segment and 7 vessels exiting. The Fleet Register shows that 3 of these vessels moved to other ports and 4 were decommissioned (one of these was scrapped with public aid).

As reported above, the fleet segment “Polyvalent VL0618” consists of DCF fleet segments PGP VL0612, PGP VL1218, PMP VL0612 and PMP VL1218. The increasing trend during the period 2006-2008 as well as the reduction in the subsequent period was due to changes in the DCF fleet segment PGP VL0612. Vessels classified as PMP VL1218 declined in 2009. However, this is due to a change in vessels classification. Indeed, for statistical reasons two of the three vessels classified as PMP VL0612 in 2009, 2010 and 2011 were included in the DCF fleet segment PMP VL1218 in previous years (even though LOA was lower than 12 m).

As foreseen by EU Decision 93/2010, when a DCF fleet segment has fewer than 10 vessels (this should be the case of PMP VL0612), clustering may be necessary in order to design the sampling plan.
Figure 20 Trends in number of vessels for Polyvalent VL0618
Source: Elaborations on IREPA data

Figure 21 Trends in engine power for Polyvalent VL0618
Source: Elaborations on IREPA data

Figure 22 Trends in gross tonnage for Polyvalent VL0618
Source: Elaborations on IREPA data

Remuneration type is based on a share-contract system. The difference between revenues and operating costs is divided into two parts, one to remunerate the crew and the other for the ship owner.
This type of contract is typical in the Mediterranean fisheries sector. Although a minimum salary has been established by Italian law, this is used only for calculating and paying social security contributions.

### Table 14. Remuneration type by vessel. Polyvalent VL0618 (n=5)

<table>
<thead>
<tr>
<th>Remuneration type</th>
<th>No. people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piece</td>
<td>0</td>
</tr>
<tr>
<td>Share</td>
<td>8</td>
</tr>
<tr>
<td>Wage</td>
<td>0</td>
</tr>
</tbody>
</table>

n= number of questionnaires.  
Source: Consultants calculations based on the questionnaires.

As reported above, even with fluctuations, the economic performance of the fleet segment has remained stable between 2007 and 2011, however, the current level is much lower than the value registered in 2006. The significant decrease in profitability from 2006 to 2011 has been mainly due to a reduction in landings value and landings volume. This is probably partly caused by a deterioration in the status of some stocks, however, stakeholders identified the European and international regulations as the main drivers of this situation. These regulations have limited the potential for the vessels classified in this fleet segment to fish tuna and swordfish (which represented the most important target species of larger vessels in the past). Indeed, the strong reduction in landings is mainly related to species like albacore and swordfish.

**Employees within segment**

For all employee-types, pensions are the only benefit provided by the business with no additional benefit beyond this and the regular salary and the pension. All fishers employed in this fleet segment declared they have an annual income below EUR 10,000 regardless of employee type.

### Table 15. Salary band by employee type (EUR). Polyvalent VL0618 (n=5)

<table>
<thead>
<tr>
<th>Employee type</th>
<th>&lt;10,000</th>
<th>10,000-19,000</th>
<th>20,000-29,000</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Self-employed</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Skipper</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Crew</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

n= number of questionnaires.  
Source: Consultants calculations based on the questionnaires.

Entering the fleet segment does not require any specific attribute other than to be male, in good health and member of (or close to) a family involved in the fisheries sector. Generally, the only qualification
declared by the fishers interviewed was the seaman certificate (libretto di navigazione). There are three
different categories associated with this certificate and the local fishers are generally registered as first
category or third category (specific for coastal fishing). However, the first or third categories do not
require any specific attributes or skills, and are merely an administrative document required for
employment on a vessel. Fishermen may obtain other qualifications based on their experience or by
attending specific training courses, however, they do not need additional qualifications to work.

Almost all fishers interviewed had completed primary education (Figure 23) and of the 8 respondents,
only one fisher (a skipper) had a more advanced level of education. All of them had no previous job
outside fishing, having got their first job in the sector. However, job satisfaction is low in general with
crew and skippers reporting a similar level of satisfaction. But skippers had never looked for an
alternative job and were not interested in changing occupation, while some crew members had actively
looked for a new job in recent years and stated they would like to change jobs in the future. They were
not able to specify what their preferred occupation would be, but they stated that this should be outside
the fishing sector.

In the past, some fishers left their jobs for employment as waiters for the Club Med or other big tourist
infrastructures. There is no labour mobility between fleet segments in the sense that there are no
fishers that leave one fleet segment to work in another one.
Fishing skills have traditionally been passed down through the generations in families of fishers. Questionnaire results show that the fathers of almost all the fishers interviewed were also fishers themselves. Skills were passed on through the direct involvement of sons in the fishing activities from a young age. Currently, this is no longer feasible both because their involvement needs too many formal requirements and because fishing has lost its attractiveness among the sons of fishers.

Fishers of all employee-types have a low perception of their own wealth and this has declined over the last ten years. They believe that the economic condition of the local fishing sector has changed with the introduction of some EU regulations, which have not take into account local specificities and so have negatively affected the sector.

Fishers do not feel they are represented by European, national or local institutions, or by other organizations like labour unions. They complain about a complete lack of representation of their interests and economic situation. The only organizations available are the fishing cooperatives, which only provide administrative support.

In response to the declining economic performance of the fleet segment, fisher behaviour has been fairly static. Besides attempts to modify the composition of landings by switching among the different target species and fishing gears available in their fishing licenses, they are not able to make many adaptations to modify their status. This is thought to be due to the lack of institutions and/or organizations able to defend their interests and suggest solutions. Furthermore, the low education level of the people involved in this business, the lack of individual ability to initiate new activities and the substantial absence of organised groups present strong constraints to the potential for adaptation. The presence of an important tourism sector provides real opportunities for diversification of their activities, but very few have been able to take advantage of this. Given that FLAGs have only been recently established, they have not yet started specific initiatives to assist fishers with diversifying into tourism.

**2.5 Summary of settings**

The overall trend in the economic performance of vessels located in the port of Cefalù is negative with both fleet segments showing a negative trend in landings and revenues. Furthermore, the increase in fuel price which began in 2008, despite fluctuations, has increased operating costs. This has mainly affected vessels with high fuel consumption, such as like those using bottom trawls. However, extrapolation of data from IREPA indicates there are different patterns for vessels under 6m and those over 6m. The most critical periods in terms of landings (and profitability) were 2008 for smaller vessels and 2010 for the larger ones. These differences are probably related to the different effects of regulations on the two groups of vessels.

Estimates for these fleets based on the IREPA database are not always representative of the real situation at the local level, however, the negative trend in landings and revenues has been confirmed.
by local stakeholders. They think that these trends are the consequence of European regulations, which do not take into account the specificities of the local fishing communities. In particular, these regulations have limited the potential for larger vessels to fish tuna and swordfish (which represented important target species of larger vessels in the past) forcing them to compete for the same species as smaller vessels, mainly demersal species. This has increased the fishing effort on these species and stakeholders believe this has led to a reduction in their biomass.

The perceived incompatibility of EU regulations with the reality of the fisheries locally is associated with a number of technical measures regarding the dimensions and positions of equipment they are required to take on board. In many cases, given the small dimensions of the vessels, it is very difficult to comply with these regulations. Furthermore, these regulations do not take into account the low education level of local fishermen and the related difficulties in using this equipment.

The declining performance of the fisheries has disproportionately affected the small vessels, the numbers of which have reduced over time, while the number of larger vessels has remained stable. Despite the presence of an important tourism sector which should provide real opportunities for employment in other sectors, very few fishermen have been able to take advantage of this. The low education level of the people involved in fishing activities, the lack of individual ability to initiate new activities and the absence of organised groups present major constraints to the potential for alternative employment.

The business structure in the fishing sector is generally family-based as only a limited number of people employed on the vessels are not related to the vessel owner. Family members involved in fishing activities are generally brothers and sons. However, younger generations are not attracted by the fishing sector and their fathers would prefer them to have a different career. All crew members are male equally and are distributed between age classes 19-40 and 40-65.

The stakeholder focus group stated that women generally have no direct role in fishing activities. There was only one isolated case in which the wife of a fisher worked in fish commerce with her son. Nevertheless, given the long absence of fishermen from the mainland, wives sometimes perform an administrative role on behalf of the husbands. In some cases, to simplify the administrative process, the ownership of the vessel is assigned to the wife. Furthermore, the absence of fishermen from the mainland means that spouses or partners often play a central role in family decisions and child care.

The level of education is generally very low, the majority of people involved in fishing only attaining a primary education. As mentioned above, this presents an obstacle to adaptation to the changes taking place within the sector. The average annual income among those interviewed is below EUR 10,000, and this is generally the only income generated for the entire household (wives are usually housewives).
Table 16. Summary of settings

<table>
<thead>
<tr>
<th></th>
<th>Polyvalent VL0006</th>
<th>Polyvalent VL0618</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target species status</strong></td>
<td>Decreasing demersal stocks</td>
<td>Decreasing demersal stocks</td>
</tr>
<tr>
<td><strong>Fleet evolution</strong></td>
<td>Decreasing</td>
<td>Stable</td>
</tr>
<tr>
<td><strong>Business type</strong></td>
<td>Family</td>
<td>Family</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td>Main age classes: 19-40 and 40-65</td>
<td>Main age classes: 19-40 and 40-65</td>
</tr>
<tr>
<td><strong>Average annual income (EUR)</strong></td>
<td>&lt;10,000</td>
<td>&lt;10,000</td>
</tr>
<tr>
<td><strong>Main education level</strong></td>
<td>Primary school</td>
<td>Primary school</td>
</tr>
<tr>
<td><strong>Highlights</strong></td>
<td>Negative economic performance</td>
<td>Negative economic performance</td>
</tr>
<tr>
<td></td>
<td>Low capacity to take advantage of opportunities in tourism</td>
<td>Low capacity to take advantage of opportunities in tourism</td>
</tr>
<tr>
<td></td>
<td>Low education level</td>
<td>Low education level</td>
</tr>
<tr>
<td><strong>Key points</strong></td>
<td>Negative view of EU Regulations</td>
<td>Negative view of EU Regulations</td>
</tr>
</tbody>
</table>

3. Linkages

3.1 Inter-sectoral linkages

The interviewed stakeholders did not highlight any particular competition for space between fisheries and other economic sectors. The only problem mentioned by local fishermen was the presence of nautical tourism, which is often not very respectful of the needs of the environment and fisheries. One of the most serious problems encountered by the vessels of Cefalù and other coastal areas in the North of Sicily is the recreational fishing. This definition includes both amateur anglers and pseudo-sport fishermen, who illegally carry out a real professional fishing activity. Although the global phenomenon is not yet quantified, fishers have estimated that the pleasure craft involved in the phenomenon are several hundred with various types of tonnage and engine, and equipped with specific equipment which can be very sophisticated. The amateur anglers generally operate a seasonal and occasional activity, concentrated mainly in the summer holidays and other public holidays, while the pseudo-sport fishers operate throughout the year in an intensive way and with no compliance of regulations. They also sell the fish providing unfair competition for professional fishes who cannot compete with the prices offered by the illegal fishers. There is almost complete lack of control over these activities which causes professional fishers to leave the legal activity and engage in this more profitable, abusive, activity, which uses the same tools as professional fishing.
3.2 Intra-sectoral linkages

2.2.1 Between fleet segments

The increase in the fuel price began in 2008 and has caused a significant increase in fuel costs for all vessels operating off-shore. In addition to the restrictions on fishing tuna and swordfish (no vessel in the area has got quotas for tuna fishery) imposed by the EU, this has forced larger vessels to operate in areas closer to the coast and compete for the same species of smaller vessels. This has increased the fishing effort on these species, reduced their biomass and also damaged the smaller vessels.

2.2.2 Between subsectors

The dominant fisheries sub-sector in Cefalù is the catching sub-sector. Regarding fish commerce, fishers highlight the lack of local selling points managed by fishermen associations. Although there are a few cases whereby fishers sell their product directly to restaurants, the majority of the landings are sold to informal small traders and wholesalers beyond the control of the fish market with no guarantees to a fair price and very often without invoicing. Fishers highlighted the need to organize the direct sales of the product through the provision of suitable self-managed selling points.

The local processing sub-sector consists of four active companies which employed 90 people in 2012 (data from the Chamber of Commerce). In 2008 these companies employed 88 people so this sub-sector shows a stable trend. These companies are mainly involved in the processing of small pelagic species (anchovies in particular), but there are no links to the local catching sub-sector as the raw material is imported from other countries including Morocco and Tunisia.

3.3 Summary of linkages

The tourism sector of Cefalù interacts only marginally with the fisheries sector. The main linkages are the sale of local fish products to restaurants and the problems that the nautical tourism can create for fishers, which are mainly related to the competition for space. Other conflicts highlighted by stakeholders are related to recreational fishing where it is not actually an amateur activity, but illegal.

Regarding the linkages among fleet segments, the only conflict discussed during the stakeholder focus groups was related to the simultaneous use of larger and smaller vessels to exploit the same fishing areas and the same resources. Regarding the conflicts among fishery sub-sectors, the main problems were related to fish retail which is actually managed by wholesalers that decide the price and leave the total risk of unsold product entirely with the fishermen.
4. Role of fishing

4.1 Fisheries as an economic activity

4.1.1 Diversification and Adaptation

As reported above, the economic structure of Cefalù is centred around tourism. Other important sectors in terms of people employed are represented by the Public Administration and public services, such as education and welfare services. Fishing is a marginal sector in the local economy. In the past, especially in the 80s and 90s, some fishermen left their job and were employed as waiters for the Club de la Mediterranee or other big tourist structures. The presence of an important tourism sector provides real opportunities for the diversification of fishing activities, but only a few fishers have been able to take advantage of these possibilities. In these cases, they have started a parallel activity in the tourist sector, like fishing tourism. In other cases, they have taken advantage of financial contributions provided by public authorities to favour the development of bed & breakfast businesses. These contributions were provided through the Regional Operative Programme (ROP) 2000-2006 of the Sicilian Region for the use of EU structural funds foreseen by Reg (CE) 1260/1999. The contribution, which fall into the de minimis regime, was directed to people that assign part of their house (up to a maximum of three rooms) to accommodation and breakfast. The contribution of four, five or six million Lire (equivalent to EUR 2065.83, EUR 2582.28 and EUR 3098.74 respectively) per room depending on the number of stars assigned to the bed and breakfast (1, 2 or 3 stars respectively defined on criteria defined by the same ROP), was delivered as a one-off grant.

The limited number of fishermen that diversified their activities into tourism is mainly due to the low education level of the people involved in this business, the lack of their ability to initiate new activities and the absence of organised groups. Given the recent establishment of FLAGs in the area, these have not yet started specific diversification initiatives for fishers to diversify into tourism. Over the past ten years, the capacity to adapt to change has been very low. Notwithstanding the economic crisis affecting local fisheries, fishers have remained in the same job, constrained by the factors described above. It seems they have little opportunity to change jobs even if some crew members would prefer to leave the fishing sector altogether and find an alternative employment. A different situation has been described for skippers and vessels owners who are not interested in jobs other than fishing. Younger generations are not interested in fishing, which is becoming increasingly less attractive, resulting in an ageing workforce in the catching sub-sector. Furthermore, the level of solidarity is high within the family but low outside. There are sometimes conflicts among different families based around conflicts among vessels belonging to different fleet segments. This situation discourages the organization of fishermen into associations which might defend their interests and propose solutions to the various problems described above. Local fishermen feel they are not supported by local, regional or national institutions.

As reported above, the level of diversification of economic activities carried out by the fishermen operating in Cefalù has been low. In contrast, the level of diversification within the catching sub-sector
in terms of decisions regarding target species, fishing gears used and the exploited fishing areas is
high. Indeed, from this point of view, the presence of a high number of fishing methods in the area has
allowed fishermen to diversify the landings composition to face the decrease in biomass of demersal
species and, in some cases, to face the increase in fuel price by changing fishing areas.

Among the list of social indicators proposed to local fishermen for evaluation in terms of their
importance in influencing the local community well-being, “unemployment and income support rates”
was rated as the most important, scoring 4.70 on average (4.40 for polyvalent lower than 6m and 5.00
for polyvalent over 6m). Other important indicators were “level of education”, which scored 3.75 on
average, “health” and “capacity for individual or collective influence”, which scored the 3.50.

4.2 Future development of the community

The perceived future of the fishing sector in Cefalù is viewed very negatively by local fishers. They are
of the opinion that the current condition of the sector is not sustainable and the sector will probably
decline up until all fishing activities are closed. However, they hope that there might be changes,
particularly with respect to EU regulations, which are considered to be the main reason this critical
situation has arisen.

Local fishers would like to go back to the situation prior the implementation of EU regulations in which
they had more flexibility in the management of local fishing activities. Other things they would like to
achieve in the future are the potential to work year-round by altering their fishing methods based on the
seasons, the implementation of a local or regional self-management, a change in fishery regulations to
rules which are more compatible with the specificities of the local fisheries, a greater involvement of
fishers in the market policies and the organization of self-managed selling-points.

Table 17 shows the results of a SWOT analysis performed with the local stakeholders.

Table 17. SWOT analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Threats</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>High level of professional experience</td>
<td>Reduction in landings (especially for demersal species)</td>
<td>Gradual increase in illegal fishing.</td>
<td>Introduction of a self-management system.</td>
</tr>
<tr>
<td>Artisanal fisheries</td>
<td>High presence of illegal fishing</td>
<td>Increase in fishing effort and deterioration of stocks.</td>
<td>Introduction of national and local management plans.</td>
</tr>
<tr>
<td>Use of a multitude of fishing gears</td>
<td>Conflicts between larger and smaller vessels for the exploitation of the same area</td>
<td>Increase in operating costs.</td>
<td>Introduction of socio-economic measures associated to reductions of fishing effort.</td>
</tr>
<tr>
<td>High quality level of production (high value of species)</td>
<td>Low education level.</td>
<td>Exit of employees from the sector</td>
<td>Diversification of fishing activity towards fishing tourism.</td>
</tr>
<tr>
<td>A significant number of</td>
<td>Lack of self-managed local</td>
<td>Reduction in salaries as a</td>
<td>Establishment of Producers</td>
</tr>
</tbody>
</table>

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species landed  | selling-points  | consequence of the increase in operating costs.  | Organizations.
---|---|---|---
Cultural and historic tradition in the fishing sector | Low capacity to develop alternative business activities. | Low participation of younger generations in the fishing sector with an average age of fishermen becoming older and older. | Development of training courses for fishermen to improve their skills and education level.

Source: Consultation with local stakeholders and fishermen.

5. Summary and conclusions

The economic structure of Cefalù is mainly based on tourism. The first tourist infrastructures date back to the 1950s and subsequent decades have been characterised by important developments within this sector. Over the last ten years, although the number of promotional events have reduced, tourism has been the most important economic sector, followed by the Public Administration and public services, like education and welfare services. The fishing sector is very marginal in the local economy representing around 1% of the total number of employees. Trends in the number of active firms show a concentration of the economic system with a strengthening of tourism and a weakening of other sectors.

Fishing in Cefalù is predominantly artisanal. This is evidenced by the extreme polyvalence of fishing activities and the multi-species landings composition of all 49 vessels registered in the local maritime district. All vessels use a multitude of fishing systems and gears and switch from one to another throughout the year, adapting fishing strategies to the specific features and seasonality of the target species. The fishing activities are mainly aimed at catching large pelagic species such as swordfish, albacore and common dolphinfish using longliners, demersal species with static gears (trammel net, gill net) and small pelagic species with seines. The local fleet can be split into 2 fleet categories: Polyvalent VL0006 and Polyvalent VL0618. The only purse seiner registered in Cefalù is not included in the analysis at fleet segment level for confidentiality reasons. All vessels are classified as polyvalent, 28 over 6m and 21 under 6m. These vessels use both active and passive gears, but none of these can be identified as predominant. Polyvalent vessels over 6m produce more than 70% of the total landings, while vessels lower than 6m account for around 10%. The remaining production is mainly represented by European anchovies landed by the purse seiner. In terms of revenues, the highest contribution to the local production is provided by Polyvalent VL0618 (more than 80%), while polyvalent vessels lower than 6m represents around 15% of total revenues and the purse seiner accounts for less than 5%. The most important five species in terms of landings value are swordfish, albacore, common dolphinfish, European anchovy (mainly landed by the purse seiner) and squids. Those species account for almost 70% of total revenues. Swordfish represents almost half of total revenues.

The business structure is generally family-based. People employed on these vessels are often related to the vessel owner, even though there are the odd cases where crew members are not related to the owner. The decision-making processes related to fishing activities are totally managed by the skipper,
who is usually also the vessel owner. Family members involved in fishing activities are generally sons and brothers of the vessel owner. All crew members are male and are equally distributed between age classes 19-40 and 40-65. Women do not have any direct role in catching activities and their involvement in retail is quite rare. However, in some cases, given the long absence of fishermen from the mainland, their wives carry out an administrative role on behalf of the husbands. In few cases, to simplify the administrative process, the ownership of the vessel is assigned to the wife. Furthermore, the absence of fishermen from the mainland determines also a central role of their spouses in family decisions and child care.

Salaries are very low for both skippers and crew. All interviewed fishermen stated they earned less than EUR 10,000 annually. This salary is often the only household income (wives are usually housewives). The education level is usually very low, with most only reaching primary level.

The economic performance of vessels located in the port of Cefalù is declining with both fleet segments showing a negative trend in landings and revenues. Furthermore, the increase in fuel price which began in 2008, even with fluctuations, has increased operating costs. Local fishers think these negative trends are the consequence of EU regulations, which do not take into account the specificities of the local fishing communities. These regulations have restricted the potential for larger vessels to fish tuna and swordfish (which were the most important target species of larger vessels in the past) forcing them to compete for the same species as smaller vessels, mainly demersal species. This has increased the fishing effort on these species and might have reduced the biomass of these stocks.

The negative performance of the fisheries has not significantly altered the fleet dimensions. Vessels below 6m have declined, while the number of vessels over 6m has remained stable. Although the presence of a key tourism sector should provide real opportunities for employment only a few fishermen have been able to take advantage of this. In these cases, they have started a parallel activity in the sector, like fishing tourism. In other cases, they have taken advantage of financial contributions provided by public authorities to development of bed & breakfast businesses. However, the low education level of the people involved in fishing activities, the lack of individual ability to initiate new activities and the substantial absence of organised groups represent strong constraints to the possibility of changing job. Notwithstanding the reduced profitability of the fishing sector, fishermen have generally remained in the same job.

The level of solidarity is high within the family, but low among different families and sometimes there are conflicts among different families which are linked to the conflicts among vessels belonging to different fleet segments. This situation does not encourage the organization of fishermen in associations and so local fishermen feel they are not supported by local, regional or national institutions.

The fisheries sector is also characterized by a number of conflicts between larger and smaller vessels, between the catching sub-sector and fish commerce, and between the catching sub-sector and the
pseudo-recreational fishery. One of the main problem seems to be the presence of a substantial number of illegal fishermen hidden under the definition of recreational fishing, who are in competition with legal fishermen for both the exploitation of marine resources and sale of the product. The increase in regulations and controls in the fishing activities from one side and the perceived absence of controls of illegal fishing are forcing professional fishers to leave their jobs and continue the activity in an illegal way hidden under the definition of the recreational fishery.