

“Piloting of eco-innovative fishery supply-chains to market added-value Adriatic fish products”

## D3.1.1: Report of the mapped fisheries in Italy

WP3 - Piloting of sustainable and eco-certified fishery productions/ A3.1. Analysis of state, management and seasonality of fisheries in the Adriatic Sea.

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## GLOSSARY

CFP	Common Fisheries Policy
DCF	Data Collection Framework
Dlgs	Legislative Decree
D.M.	Ministerial Decree
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FDI	Fishery Dependent Information
GFCM	General Fisheries Commission for the Mediterranean
GSA	Geographical Subarea
ICCAT	International Commission for the Conservation of Atlantic Tunas
ISTAT	Italian National Statistical Institute
JRC	European Commission Joint Research Centre
MIPAAFT	Italian Ministry of Agriculture, Food and Forestry Policies and Tourism
MSY	Maximum Sustainable Yield
SAC	GFCM Scientific Advisory Committee
STECF	Scientific, Technical and Economic Committee for Fisheries

## EXECUTIVE SUMMARY

This report provides an overview of Adriatic fisheries in the framework of **Prizefish**, a project coordinated by the Alma Mater Studiorum - Università Di Bologna (Italy) within the INTERREG V-A ITALY – CROATIA COOPERATION PROGRAMME 2014-2020, which involves partners from both sides of the Adriatic Sea. The project goal is to engage Adriatic fisheries in moving towards sustainability.

In particular the report, corresponding to deliverable **D3.1.1 “Report of the mapped fisheries in Italy”**, summarises the results of the “Activity 3.1: Analysis of state, management and seasonality of fisheries in the Adriatic Sea” of the Work Package 3 (WP3) of the Prizefish Project, providing an overview of the all fisheries traditionally carried out by Italian fleets in Geographical Subarea (GSA) 17 of the General Fisheries Commission for the Mediterranean (GFCM). The same analysis will be conducted on the Croatian side of the Adriatic, leading to a **Report of the mapped fisheries in Croatia** ( deliverable D3.1.2) in month 12 of the project. The structure of the report and some contents have been partially taken from that of the Fast Scan (Stage 1.a) Report prepared for Blufish, a project pre-assessment (PPA) coordinated by the Marine Stewardship Council (<https://www.msc.org/it/>).

Based on these preliminary analyses, a certain number of fisheries per each of the two countries will be selected to enter in a mapping phase that will gather all existing data, documenting in details local fishing practices, their environment, social and economic importance and traditional skills, in order to develop precise guidelines on how to reach sustainable standards at regional level (Activity 3.2: Selection of sustainable fisheries and guidelines on how to reach sustainable standards).

The 622 Italian fisheries mapped in the D3.1.1 report are therefore the assessment basis, from which about 20 will be selected for the following activities.

The report provides the following quantitative and qualitative information:

- a list of all the fisheries (combination of species and gear/target group) operating under the scope of the project with indication of: the main target species, the main gears used, stock area, and availability of stock assessment and exploitation levels;
- average landings in volume and value in recent years;
- landing composition in terms of volume and value by fishery;
- fleet composition by fishing technique;
- geographical characterisation of the main fisheries;
- list of the main landing ports.

The main sources of information are Data Collection Framework data from the JRC data dissemination tool (<https://stecf.jrc.ec.europa.eu/data-dissemination>), the latest GFCM, ICCAT and STECF evaluations, national regulations, and the EU Fleet Register. Information on fish stock status was also extracted from the recent literature.

## 1. INTRODUCTION

Almost 90% of the fish stocks assessed in the Mediterranean are presumed to be overexploited (Colloca et al, 2017). This is the result of fleet overcapacity, poor involvement of the fishing sector in decision-making processes and weak market engagement in promoting the sustainable exploitation of natural resources. Also in the Adriatic Sea, recent analyses have shown that most of the relevant stocks suffer of over-fishing or severe exploitation and decline risk, stressing the need to make the methods and intensity of the fishing harvest more compatible with the potential for biological renewability of species.

The Common Fisheries Policy of the European Union recommends to implement medium-term strategy for sustainability, based on strong scientific/socio-economic analyses and innovative actions that can empower small-scale fishermen and fishery operators to adopt low-impact fishing methods. Accordingly, the Common Organization of the Markets in fisheries and aquaculture products of the EU recommends cross-border cooperation among fishers towards sustainable fishing to match market demands and consumer attitudes, as well as to create innovative added-value seafood products that can penetrate with success EU and non-EU markets.

However, the eco-labels for fishery and aquaculture products currently in use are mostly private and International, and there are almost no public ones that comply with requirements established for environmental labels.

In this framework, the PRIZEFISH project aims to innovate fisheries in the North Central Adriatic area by piloting eco-labeled fish productions and fishery products derived, throughout the implementation of a cross-border, territorial and socio-economic developmental change in the cooperative renewable exploitation of Adriatic fishery resources, that would produce benefits in the long-term also to Adriatic marine ecosystems.

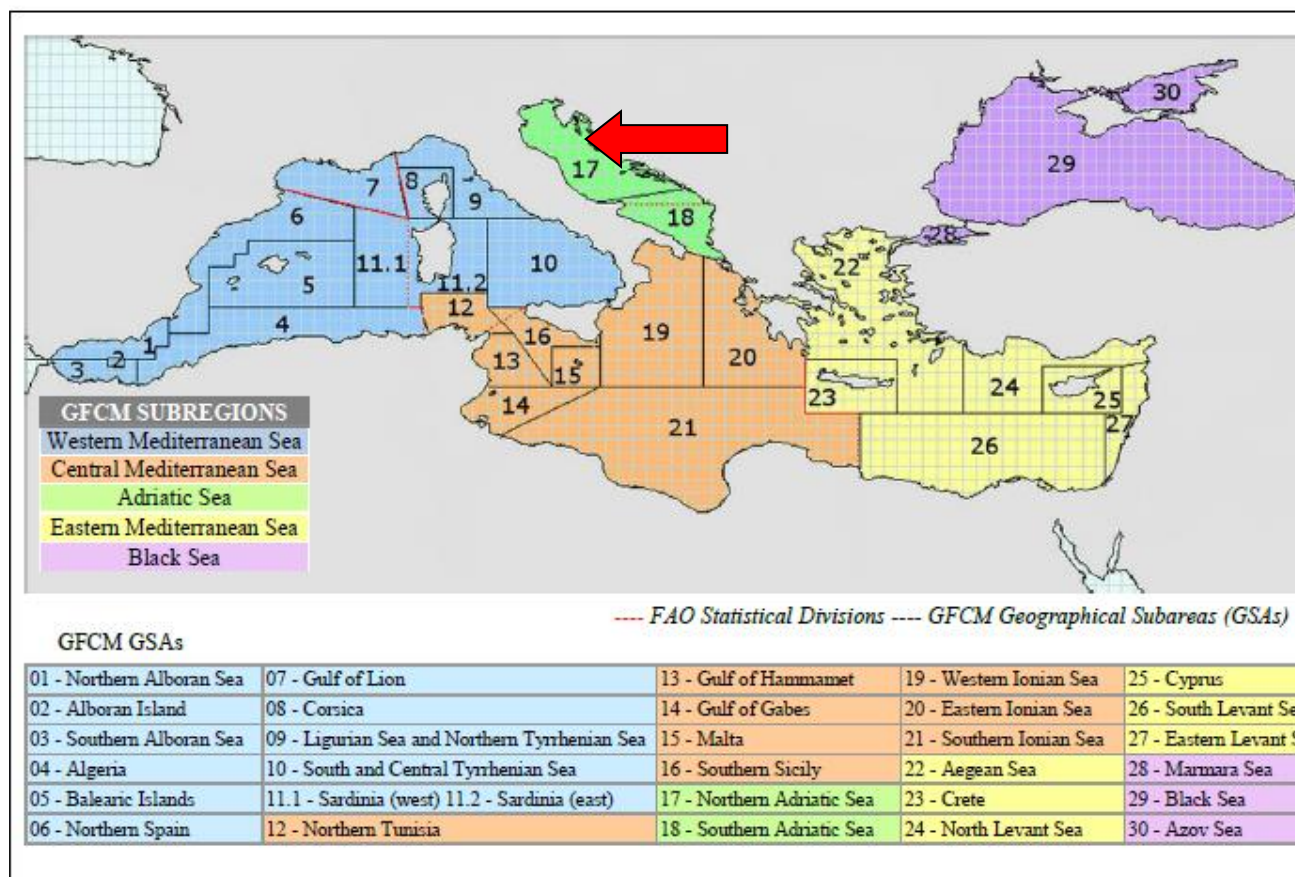
This can be achieved in particular through the development of a certification scheme for an eco-label brand fully Adriatic, the **Adriatic Responsible Fishery (ARF)**, that would combine environmental protection with the social dimension and economic aspects. The purpose of Adriatic Responsible Fishery (ARF) is to provide a framework for the recognition of fisheries management

best practices and to foster the adoption of measures capable of achieving and maintaining appropriate level of stocks over time. The ARF programme will focus on the value of certification in driving improvement in the marine environment and in enhancing traceability and transparency throughout the supply chains. However, besides the direct benefits of certification and market recognition, the ARF standard and assessment process will provide a tool to diagnose and identify improvement needs at a more general level, irrespective of eventual certification. Notably, management authorities could begin to use the ARF standard as an independent, credible ground-truthing approach before making wide-sweeping adjustments to enhance efficiencies for all fisheries, not just those seeking certification.

This multi-stakeholder, collaborative approach, which has become known as the Project Pre-Assessment (PPA) model, has already been applied in the Mediterranean region, in Australia, Indonesia, Mexico, South Africa, Japan, and the UK with the aim of helping in the improvement of the management of the sector. Through a combination of mapping and pre-assessment exercises, the PPA model offers governments, fishermen, scientists, market players, and local non-governmental organisations the opportunity to collaborate to identify the most efficient route to make environmental improvements at the most appropriate scale. Critical features of a PPA are that its intended impact extends beyond the immediate project results and that it has the purpose of improving management. Fisheries deciding to pursue certification when their performance allows to do so, find in the PPA a streamlined, stakeholder-supported approach to sustainability, whereas those that do not choose to pursue certification still benefit through PPA projects and can achieve significant management efficiencies. Prizefish is therefore a “PPA project” involving both Italian and Croatian fisheries.

The report summarises the results of the “Activity 3.1 – Analysis of state, management and seasonality of fisheries in the Adriatic Sea” of the Work Package 3 (WP3) of the Project, whose aim is to provide an overview of and to map Italian fisheries in Geographical Subarea (GSA) 17 of the General Fisheries Commission for the Mediterranean (GFCM). The structure of the report and some contents have been partially taken from that of the Fast Scan (Stage 1.a) Report prepared for Blufish, a project pre-assessment (PPA) coordinated by the Marine Stewardship Council (<https://www.msc.org/it/>).





**Figure 1 – GSA 17: Northern Adriatic Sea**

Source: GFCM Data Collection Reference Framework, Version 2018.1 (GFCM, 2018).

The 622 Italian fisheries mapped in GSA 17 (see ANNEX II) in the report are therefore the assessment basis from which about 20 will be selected for a deeper mapping.



The report provides the following quantitative and qualitative information:

- a list of all the fisheries operating under the scope of the project with indication of: the main target species, the main gears used, stock area, and availability of stock assessment and exploitation levels;
- average landings in volume and value in the most recent years;
- landing composition in terms of volume and value by fishery;
- fleet composition by fishing technique;
- geographical characterisation of the main fisheries;
- list of the main landing ports.

The study, methodology, including data sources, the way data were analysed, and the mapping results are reported in the chapters that follow.

## 2. METHODOLOGY

### 2.1 Data sources

A variety of data types were used to conduct the mapping. These data and their sources are listed below.

#### 2.1.1 Fleet Register

Official data on the Italian fishing fleet and ports recorded in the Italian Fleet Register were downloaded from the European Commission web site (Management of fishing capacity - fishing fleet: [https://ec.europa.eu/fisheries/cfp/fishing\\_rules/fishing\\_fleet\\_en](https://ec.europa.eu/fisheries/cfp/fishing_rules/fishing_fleet_en)). Data included the vessel details reported in the Fishing License, which is released to vessel owners by the MIPAAFT, namely port name, vessel name, owner's name, registration number, vessel length, main gear type, secondary gear type, tonnage, engine power and year of construction.

#### 2.1.2 European Commission

##### *Data Collection Framework (DCF) database*

The EU DCF is publicly available on the DCF website at <https://datacollection.jrc.ec.europa.eu/data-analysis>. Data are available for use according to the format (i.e. variables and disaggregation level) stated in each data call. Official Data calls (e.g. EU Aquaculture, Fisheries-Dependent Information, Fleet Economic Performance, Mediterranean and Black Sea and Fish Processing Industry) are launched periodically (usually once a year) and are principally aimed at gathering information for the main DCF end-user, the Scientific, Technical and Economic Committee for Fisheries (STECF), for analysis and reports.

##### *Scientific, Technical and Economic Committee for Fisheries (STECF)*

The STECF performs periodic (usually yearly) stock assessments of several species of commercial interest, whose distribution falls within EU GSAs. Summaries of such assessments are publicly available on its website at <https://stecf.jrc.ec.europa.eu/dd/medbs/ram>. Detailed information is also available, in the form of reports, on the webpage: <https://stecf.jrc.ec.europa.eu/reports/medbs>.

In parallel to the STECF, the Scientific Advisory Committee (SAC) to the GFCM, runs stock assessments for shared Mediterranean demersal stocks and small pelagic fish stocks.

#### 2.1.3 General Fisheries Commission for the Mediterranean (GFCM)

The SAC-GFCM Working Groups on Stock Assessment of Demersal (WGSAD) and Small Pelagic Species (WGSASP) annually perform stock assessment for different shared demersal and small

pelagic Mediterranean species of commercial interest. Their outcomes are regularly published as an annex to the annual SAC report and are publicly available on the GFCM website. The SAC-GFCM results were cross-checked and incorporated in the present report along with the STECF data.

#### 2.1.4 International Commission for the Conservation of Atlantic Tunas (ICCAT)

Highly migratory stocks in the Atlantic Ocean and the Mediterranean Sea fall under the purview of the ICCAT. Its scientific working group periodically produces stock assessments for tuna and tuna-like species. The information is publicly available on the ICCAT website.

#### 2.1.5 Other sources: scientific literature

Since a preliminary examination indicated that stock assessments were only partially available for GSA 17, the decision was made to review the recent literature for information on the status of the Adriatic stocks in the area included in the Prizefish project, even if it had not been formally validated by the STECF or the GFCM.

In particular, the paper by Froese et al. (2018) examines the current status, exploitation pattern, required stock rebuilding time, potential future catch if stocks are managed at the maximum sustainable yield (MSY), and consequent future profitability of 397 European stocks. Fishing pressure and biomass are estimated from 2000 to 2017 in 10 European eco-regions and in two wide-ranging regions. The authors also analyse stocks that are distributed in the GSA 17.

## 2.2 Data analysis and reporting

### 2.2.1 Fishing fleet data: gears, métiers and fishing technique

The composition of the Italian fishing fleet in GSA 17 was obtained from the raw data from the Fleet Register –which reports the main gear of each vessel as stated in the fishing license–by sorting them out in a pivot table. The database was last updated on 31.12.2018.

The gears are reported in the Fleet Register according to the DCF classification<sup>1</sup> and are structured by fishing activity (métier) and region in line with the Commission Decision of 18 December 2009 according to a multiannual Community programme for the collection, management and use of data

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<sup>1</sup>Also adopted by the GFCM (GFCM, 2018).

in the fisheries sector for the period 2011-2013 (2010/93/EC). These data are summarised in Table 1.

**Table 1–Acronyms and gear types as reported in Commission Decision 2010/93/EC**

<b>Gear acronym</b>	<b>Gear description</b>
DRB	Boat dredges
DRH	Hand dredges
FPN	Stationary uncovered pound nets
FPO	Pots
FYK	Fyke nets
GNC	Encircling gillnets
GND	Driftnets
GNS	Set gillnets (anchored)
GTN	Combined gillnets-trammel nets
GTR	Trammel nets
HAR	Harpoons
HMD	Mechanised dredges including suction dredges
LA	Lampara nets
LHM	Handlines and pole-lines (mechanised)
LHP	Handlines and pole-lines (hand-operated)
LLD	Drifting longlines
LLS	Set longlines
LNB	Boat-operated lift nets
LNS	Shore-operated stationary lift nets
LTL	Troll lines
MIS	Miscellaneous Gear
NK	NOT KNOWN <sup>2</sup>
NO	NO GEAR
OTB	Bottom otter trawl
OTM	Mid water otter trawl
OTT	Otter twin trawl
PS	Purse seines
PTB	Bottom pair trawl
PTM	Pelagic pair trawl
SB	Beach seines

<sup>2</sup> NK, Not Known is allowed in case of confidentiality issues.

<b>Gear acronym</b>	<b>Gear description</b>
SDN	Danish seines
SPR	Pair seines
SSC	Scottish seines
SV	Beach and boat seines
TBB	Beam trawl

Source: <https://datacollection.jrc.ec.europa.eu/web/dcf/wordef/gear-type>

According to the Commission Decision of 6 November 2008 – which adopted a multiannual Community programme pursuant to Council Regulation (EC) No. 199/2008, establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice to the CFP (2008/949/EC) – a métier is “a group of fishing operations targeting a similar (assemblage of) species, using similar gear, during the same period of the year and/or the same area and which are characterised by a similar exploitation pattern”. The notion of métier is therefore closely linked to fishermen’s activities, patterns, traditions, and gears. Accordingly, each métier involves a set of fishing operations characterised by a combination of fishing gear, target species, area, and season which make up homogeneous units that supply the main characteristics of a large number of fishing trips in a single variable (González-Álvarez et al., 2016).

The list of métiers of the Mediterranean Sea (Table 2) has been identified by the Regional Coordination Meeting for the Mediterranean and the Black Sea (RCMMED&BS, Sete 2008) and is available on the STECF website (<https://datacollection.jrc.ec.europa.eu/wordef/fishing-activity-metier>).

**Table 2 – List of métiers in the Mediterranean Sea up to level 4.**

Level 1	Level 2	Level 3	Level 4
<b>Activity</b>	<b>Gear classes</b>	<b>Gear groups</b>	<b>Gear type</b>
<b>Fishing Activity</b>	<b>Dredges</b>	Dredges	Boat dredge [DRB]
	<b>Trawls</b>	Bottom trawls	Bottom otter trawl [OTB]
			Multi-rig otter trawl [OTT]
			Bottom pair trawl [PTB]
			Beam trawl [TBB]

Level 1	Level 2	Level 3	Level 4	
Activity	Gear classes	Gear groups	Gear type	
		Pelagic trawls	Midwater otter trawl [OTM]	
			Pelagic pair trawl [PTM]	
	<b>Hooks and Lines</b>	Rods and Lines	Hand and Pole lines [LHP] [LHM]	Trolling lines [LTL]
				Drifting longlines [LLD]
		Longlines		Set longlines [LLS]
				Pots and Traps [FPO]
	<b>Traps</b>	Traps		Fyke nets [FYK]
				Stationary uncovered pound nets [FPN]
	<b>Nets</b>	Nets		Trammel net [GTR]
				Set gillnet [GNS]
				Driftnet [GND]
				Purse seine [PS]
	<b>Seines</b>	Surrounding nets		Lampara nets [LA]
				Fly shooting seine [SSC]
		Seines		Anchored seine [SDN]
				Pair seine [SPR]
				Beach and boat seine [SB] [SV]
	<b>Other gear</b>	Other gear		Glass eel fishing
<b>Misc. (Specify)</b>	Misc. (Specify)			
<b>Other activity than fishing</b>				
<b>Inactive</b>				
<b>Recreational fisheries</b>				

Source: <https://datacollection.jrc.ec.europa.eu/wordef/fishing-activity-metier>



Thus, a métier is essentially based on a combination of a gear (as listed above), a target assemblage and a mesh size. The analysis performed in the present report stops at level 5 of the definition of métier employed by the DCF system, i.e. the target assemblage, which is represented by a category of species that are biologically and environmentally similar. The abbreviations of the assemblages are reported in Table 3.

**Table 3 – Acronyms and target assemblages as reported in the DCF framework**

Target assemblage	Description
ANA	Anadromous
CAT	Catadromous
CEP	Cephalopods
CRU	Crustaceans
DEF	Demersal fish
DWS	Deep-water species
FIF	Finfish
FWS	Freshwater species
GLE	Glass eel
LPF	Large pelagic fish
MCD	Mixed crustaceans and demersal fish
MCF	Mixed cephalopods and demersal fish
MDD	Mixed demersal and deep-water species
MOL	Molluscs
MPD	Mixed pelagic and demersal fish
SLP	Small and large pelagic fish
SPF	Small pelagic fish

Source: Acronyms of target assemblage as reported in Appendix VI of the FDI data call 2018 on <https://datacollection.jrc.ec.europa.eu/dc/fdi>.

Since a vessel may use more than one gear during the year, and in some cases - especially where passive gears are concerned, also during the same day—the DCF framework has adopted the concept of fishing technique, indicating an aggregation of vessels using similar gears. Thus, a vessel is categorised under a given fishing technique on the basis of the “predominant” gear it uses. According to Commission Regulation (EC) No. 1639/2001 of 25 July 2001, establishing the minimum and extended EU programmes for the collection of data in the fisheries sector and laying down detailed rules for the application of Council Regulation (EC) No.1543/2000 (OJ L 222, 17.8.2001, p.

53), predominant is defined as follows: “If a vessel spends more than 50% of its time using a specific type of fishing technique, it should be included in the corresponding segment” (note 2 of Appendix III, section C), where a segment is the combination of a particular fishing technique category and a vessel length category (Appendix III), as also reported in Figure 2.

Appendix III (section C)  
Basic segmentation of vessels for capacities (MP)

Vessel length		< 12 m	12 – < 24 m	24 – < 40 m	≥ 40 m
Type of fishing technique					
Mobile gears	Bearn trawl				
	Demersal trawl and demersal seiner				
	Pelagic trawl and seiners				
	Dredges				
	Polyvalent				
Passive gears	Gears using hooks				
	Drift and fixed nets	( <sup>1</sup> )			
	Pots and traps				
	Polyvalent				
Polyvalent gears	Combining mobile and passive gears				

(<sup>1</sup>) This segment is aggregated for all passive gears.  
 Note 1: If a gear category contains fewer than 10 vessels, then the cell can be merged with a neighbouring length category to be specified in the national programme.  
 Note 2: If a vessel spends more than 50 % of its time using a specific type of fishing technique, it should be included in the corresponding segment.  
 Note 3: Length is defined as length overall (LOA).

**Figure 2 – Definition of fleet segment under the DCF system**

Source: Commission Regulation (EC) No. 1639/2001 of 25 July 2001 (Appendix VI)

Furthermore, according to EU Reg. 93/2010, if a vessel cannot be allocated to a fishing segment according to the predominance criterion, it is to be allocated to one of the following segments: (a) ‘Vessels using Polyvalent active gears’ if it only uses active gears; b) ‘Vessels using Polyvalent passive gears’ if it only uses passive gears; (c) ‘Vessels using active and passive gears’.

When data on effort and landings are available by métier, the fishing technique is important from an economic point of view, since it is the category used for the collection and release - under the DCF - of fleet and economic data. Income and costs refer to the vessel unit; notably, some costs cannot be attributed to a separate gear, but to the vessel as a unit.

The fishing techniques identified by the DCF (European Decision 2008/949/EC, Appendix III) are reported in Table 4.

**Table 4 – Acronyms and fishing techniques identified by the DCF**

Fishing technique acronym	Fishing technique description
DFN	Drift and/or fixed netters
DRB	Dredgers

Fishing technique acronym	Fishing technique description
DTS	Demersal trawlers and/or demersal seiners
FPO	Vessels using pots and/or traps
HOK	Vessels using hooks (longliners)
MGO	Vessel using other active gears
MGP	Vessels using polyvalent active gears only
PG	Vessels using passive gears only for vessels < 12m
PGO	Vessels using other passive gears
PGP	Vessels using polyvalent passive gears only
PMP	Vessels using active and passive gears (polyvalent)
PS	Purse seiners
TM	Pelagic trawlers
TBB	Beam trawlers

*Source: European Decision 2008/949/EC, Appendix III*

The association of gears (Table 1) and of target assemblage (Table 3) is defined as a “fishery”. The fisheries that are addressed in this report are listed in Table 6.

The analysis of fleet data performed for this report is based on the fishing technique (as attributed under the Italian national Programme for 2016) and provides, wherever possible, information on the relationship between fishing technique and fishery taken.

Fleet data were processed to produce a geographical representation of the main fishing ports (registration compartments and ports) in GSA 17. The cartographic representations were obtained using GIS software. To incorporate national administrative boundaries as well as GSA boundaries into the maps, we used shape files provided by ISTAT (Italy’s National Statistical Institute) and FAO (the United Nations Food and Agriculture Organisation) respectively and modified them so as to report information in the same thematic map. Since there is no ISTAT shape file representing the FAO-GFCM geographical subdivisions (GSAs), a manual reconstruction of the coasts was carried out and the coastal municipalities were selected. The list of all the registration ports, by region and in GSA 17, is reported in Table 5.

**Table 5 – List of registration ports and administrative region in GSA 17 (Italy)**

<b>Italian administrative regions</b>	<b>Registration ports</b>
<b>Abruzzo</b>	FRANCAVILLA A MARE
	GIULIANOVA
	MARINA DI SAN VITO
	MARTINSICURO
	ORTONA
	PESCARA
	ROSETO DEGLI ABRUZZI
	SILVI
	TORTORETO
	VASTO
<b>Emilia Romagna</b>	BELLARIA
	CATTOLICA
	CERVIA
	CESENATICO
	GORO
	PORTO GARIBALDI
	RAVENNA
	RICCIONE
	RIMINI
<b>Friuli Venezia Giulia</b>	GRADO
	LIGNANO SABBIA D'ORO
	MARANO LAGUNARE
	MONFALCONE
	MUGGIA
	SISTIANA
	TRIESTE
<b>Marche</b>	ANCONA
	CIVITANOVA MARCHE
	CUPRA MARITTIMA
	FANO
	GABICCE MARE
	GROTTAMMARE
	MAROTTA

Italian administrative regions	Registration ports
	NUMANA
	PEDASO
	PESARO
	PORTO RECANATI
	PORTO SAN GIORGIO
	SAN BENEDETTO DEL TRONTO
	SENIGALLIA
<b>Molise</b>	TERMOLI
<b>Veneto</b>	BURANO
	CAORLE
	CHIOGGIA
	IESOLO
	PELLESTRINA
	PORTO LEVANTE
	PORTO TOLLE
	SCARDOVARI
	VENEZIA

### 2.2.2 Identification of fisheries

The importance of the fisheries found within GSA 17 was established also using a recent and validated scientific method, the STECF/EWG 15-14 (STECF, 2015) approach, which considers the 75 % threshold of the cumulative value and volume of landings. The approach was originally developed by the STECF to address the EC request for support of the implementation of the landing obligation and has been employed to identify the main European demersal fisheries in the Mediterranean.

The 75 % threshold of the cumulative value and volume of landings (sum of the values of the two years for which data were available, 2015-2016) was used for each fishery and gear combination, to identify the most represented taxa, which characterise the fisheries<sup>3</sup>.

In the plot, the change in the slope of the cumulative value and volume of landings is reported to provide detailed information on catch composition. A mixed category was created for taxa

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<sup>3</sup>For fisheries here we intend the combination of target groups of species and gears.

accounting for less than 500 kg in landing weight, which were pooled into a group that was defined as “OTH” (others).

Only assessments whose reference year was 2012 or later were used. Where multiple sources of information were available for the same stock, only the most recent were considered. The information on stock status was reported in terms of  $F/F_{MSY}$  ( $F$ =fishing mortality;  $F_{MSY}$  =fishing mortality at MSY level). If biomass reference points were available, such information was also reported.

The analysis of activity by metier allowed identifying the combinations of gear and target assemblage (“fishery”), which are listed in Table 6.

**Table 6–Main fisheries identified in the GSA 17**

<b>Gear_target assemblage</b>	<b>“Fishery” description</b>
DRB_MOL	Boat dredges for molluscs
FPO_DEF	Pots and traps for demersal fish
FYK_CAT	Fyke nets for catadromous
FYK_DEF	Fyke nets for demersal fish
GND_SPF	Driftnets for small pelagic fish
GNS_DEF	Set gillnets (anchored) for demersal fish
GNS_SLP	Set gillnets (anchored) for small pelagic fish
GTR_DEF	Trammel nets for demersal fish
LHP-LHM_CEP	Handlines and pole lines for cephalopods
LHP-LHM_FIF	Handlines and pole lines for finfish
LLD_LPF	Drifting longlines for large pelagic fish
LLS_DEF	Set longlines for demersal fish
LTL_LPF	Troll lines for large pelagic fish
MIS_MIS	Miscellaneous gears for miscellaneous fish
OTB_DEF	Bottom otter trawl for demersal fish
OTB_DWS	Bottom otter trawl for deep water species
OTB_MDD	Bottom otter trawl for mixed demersal and deep-water species
OTM_MPD	Midwater otter trawl for mixed pelagic and demersal fish
PS_LPF	Purse seines for large pelagic fish
PS_SPF	Purse seines for small pelagic fish



<b>Gear_target assemblage</b>	<b>"Fishery" description</b>
PTM_SPF	Pelagic pair trawl for small pelagic fish
SB-SV_DEF	Beach and boat seines for demersal fish
TBB_DEF	Beam trawl for demersal fish

Source: <https://datacollection.jrc.ec.europa.eu/>

### 3. MAPPING RESULT: Italian fisheries operating in the GSA17 potentially eligible for eco-labelling process

The mapping process yielded 622 species/gears combinations, defined as fisheries. Details on fleet composition by fishing techniques and vessels size, on the most important fishing ports, on the composition of landings (using the 75% threshold approach) are given in the following sections.

#### 3.1. Fleet composition

In GSA 17 operate 3,049 fishing vessels. The fishing techniques most practiced are polyvalent passive gears only, Dredgers and Demersal trawlers and/or demersal seiners, followed by Pelagic trawlers, Beam trawlers and Purse seiners. The GSA 17 fishing fleet has a total tonnage of 48,248 GT and 307,446 kW of total engine power. The average age of vessels is 29 years old. Average vessels length overall (LOA) is 11 meters.

**Table 7 - GSA 17: Fleet composition by fishing technique and vessel size class (length overall, LOA) as of 31 December 2018**

Fishing technique	LOA classes	Number of vessels	Tonnage (GT)	Engine power (kW)	Average LOA	Average age of vessels
<b>DRB</b>	VL1218	583	7,993	63,305	14	29
<b>DTS</b>	VL0612	70	329	5,331	10	34
	VL1218	262	5,263	37,337	14	28
	VL1824	197	14,281	61,265	21	29
	VL2440	33	3,694	12,893	26	26
<b>PGP</b>	VL0006	623	623	8,000	5	33
	VL0612	1,080	2,510	51,550	8	27
	VL1218	13	186	2,676	13	17
<b>PS</b>	VL1218	15	147	1,868	12	37
	VL2440	21	1,989	8,282	25	32
	VL40XX	1	240	412	47	14
<b>TBB</b>	VL1218	7	194	1,494	16	38
	VL1824	37	3,216	15,798	22	27
	VL2440	11	1,124	4,071	25	28
<b>TM</b>	VL1218	41	1,075	8,808	16	25
	VL1824	29	2,575	12,135	23	22
	VL2440	26	2,809	12,221	26	24
<b>Total GSA 17</b>		<b>3,049</b>	<b>48,248</b>	<b>307,446</b>	<b>11</b>	<b>29</b>

Source: <https://stecf.jrc.ec.europa.eu/data-dissemination>

### 3.2. Fishing fleet distribution

Ports of major importance for fishing activities in the Italian side of the Adriatic Sea are the ports of Chioggia (391 vessels); Ravenna (372 vessels); Ancona (371 vessels) and Pescara (331 vessels). The fishing techniques most used by vessels operating in those ports are polyvalent passive gears, dredgers and demersal trawlers (fig. 3.2.1.).

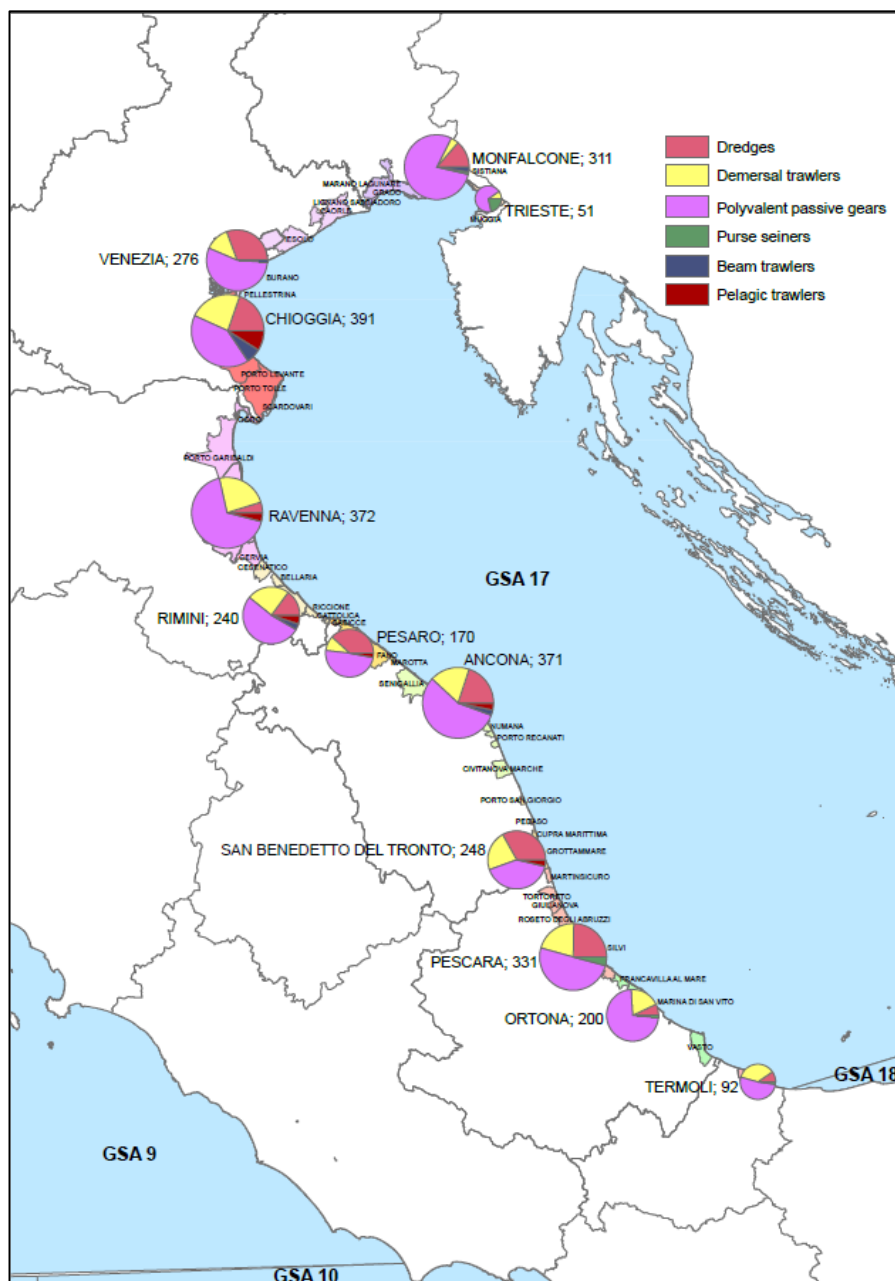


Figure 3.2.1. – GSA17: Map of registration ports and fleet characterisation by compartment

Source: <https://stecf.jrc.ec.europa.eu/data-dissemination>

### 3.3. The most important fisheries for volume and value of landings

The most important fisheries in terms of landing volume are Pelagic pair trawl for small pelagic fish (42.555 tons); Boats dredges for molluscs (15.805 tons) and Bottom otter trawl for demersal fish (15.800 tons). The same three fisheries are the most important also in terms of value of landings, in the following order: Bottom otter trawl for demersal fish (101.399.449 EUR); Boats dredges for molluscs (38.373.461 EUR); Pelagic pair trawl for small pelagic fish (44.197.957 EUR).

**Table 8 – GSA 17: Landings (volume and value) and effort (mean 2015-2016)**

FISHERY	LOA classes	Landing volume (tons, mean 2015-2016)	Landing value (€, mean 2015-2016)	Effort (days at sea, mean 2015-2016)
Boat dredges for molluscs	VL1218	15.805	38.373.461	46.536
<b>Boat dredges for molluscs Total</b>		<b>15.805</b>	<b>38.373.461</b>	<b>46.536</b>
Pots and traps for demersal fish	VL0006	193	1.602.228	8.132
	VL0612	577	4.754.328	9.423
	VL1218	3	28.450	71
	VL2440	51	971.245	689
<b>Pots and traps for demersal fish Total</b>		<b>796</b>	<b>6.856.404</b>	<b>17.935</b>
Fyke nets for catadromous	VL0006	0	1.280	12
	VL0612	7	69.785	779
<b>Fyke nets for catadromous Total</b>		<b>8</b>	<b>70.425</b>	<b>785</b>
Fyke nets for demersal fish	VL0006	159	1.583.358	5.905
	VL0612	1.211	7.788.415	23.143
	VL1218	6	53.740	103
<b>Fyke nets for demersal fish Total</b>		<b>1.377</b>	<b>9.425.513</b>	<b>29.151</b>
Set gillnets (anchored) for demersal fish	VL0006	338	2.736.192	15.576
	VL0612	1.972	14.279.450	35.466
	VL1218	61	556.198	757
<b>Set gillnets (anchored) for demersal fish Total</b>		<b>2.372</b>	<b>17.571.840</b>	<b>51.799</b>
Set gillnets (anchored) for small pelagic fish	VL0612	1	6.433	25
<b>Set gillnets (anchored) for small pelagic fish Total</b>		<b>1</b>	<b>6.433</b>	<b>25</b>
Trammel nets for demersal fish	VL0006	106	887.212	4.446
	VL0612	890	6.121.307	14.237
<b>Trammel nets for demersal fish Total</b>		<b>996</b>	<b>7.008.519</b>	<b>18.682</b>
Drifting longlines for large pelagic fish	VL0006	0	2.946	122
	VL0612	2	20.150	429
<b>Drifting longlines for large pelagic fish Total</b>		<b>2</b>	<b>21.622</b>	<b>490</b>
Set longlines for demersal fish	VL0612	11	107.963	353
<b>Set longlines for demersal fish Total</b>		<b>11</b>	<b>107.963</b>	<b>353</b>
Miscellaneous gears for miscellaneous fish	VL0006	203	654.904	3.887
	VL0612	1.851	5.954.081	18.845
	VL1218	14	78.944	168
<b>Miscellaneous gears for miscellaneous fish Total</b>		<b>2.068</b>	<b>6.687.928</b>	<b>22.900</b>
Bottom otter trawl for demersal fish	VL0612	221	1.528.739	1.990
	VL1218	5.739	36.400.720	29.570
	VL1824	8.110	52.227.444	24.575
	VL2440	1.731	11.242.546	4.538
<b>Bottom otter trawl for demersal fish Total</b>		<b>15.800</b>	<b>101.399.449</b>	<b>60.673</b>
Bottom otter trawl for deep water species	VL2440	7	209.247	164
<b>Bottom otter trawl for deep water species Total</b>		<b>7</b>	<b>209.247</b>	<b>164</b>
Bottom otter trawl for mixed demersal and deep-water species	VL1824	58	434.837	218
	VL2440	11	34.290	30
<b>Bottom otter trawl for mixed demersal and deep-water species Total</b>		<b>64</b>	<b>451.982</b>	<b>233</b>
Midwater otter trawl for mixed pelagic and demersal fish	VL1218	124	345.944	243
<b>Midwater otter trawl for mixed pelagic and demersal fish Total</b>		<b>124</b>	<b>345.944</b>	<b>243</b>
Purse seines for large pelagic fish	VL2440	2	15.134	7
	VL40XX	431	4.073.645	15
<b>Purse seines for large pelagic fish Total</b>		<b>433</b>	<b>4.081.212</b>	<b>18</b>
Purse seines for small pelagic fish	VL1218	678	1.787.615	1.525
	VL2440	2.846	2.620.792	1.478
	VL40XX	214	329.604	59
<b>Purse seines for small pelagic fish Total</b>		<b>2.315</b>	<b>3.427.615</b>	<b>2.323</b>
Pelagic pair trawl for small pelagic fish	VL1218	10.437	14.561.589	5.006
	VL1824	20.324	17.032.746	4.962
	VL2440	11.793	12.603.623	5.883
<b>Pelagic pair trawl for small pelagic fish Total</b>		<b>42.555</b>	<b>44.197.957</b>	<b>15.851</b>
Beam trawl for demersal fish	VL0612	15	62.599	296
	VL1218	463	2.422.735	1.894
	VL1824	2.579	16.276.916	5.645
	VL2440	1.118	4.258.388	1.773
<b>Beam trawl for demersal fish Total</b>		<b>4.167</b>	<b>22.989.338</b>	<b>9.460</b>

Source: <https://stecf.jrc.ec.europa.eu/data-dissemination>

### 3.4. Composition of landings (volume and value) by fishery and species according to the 75% threshold approach, sum 2015-2016

As regards small pelagic fish fished by purse seines, the European anchovy and the European pilchard (=Sardine) are the most important species in terms of both value and volume of landings (fig. 3.4.1.).

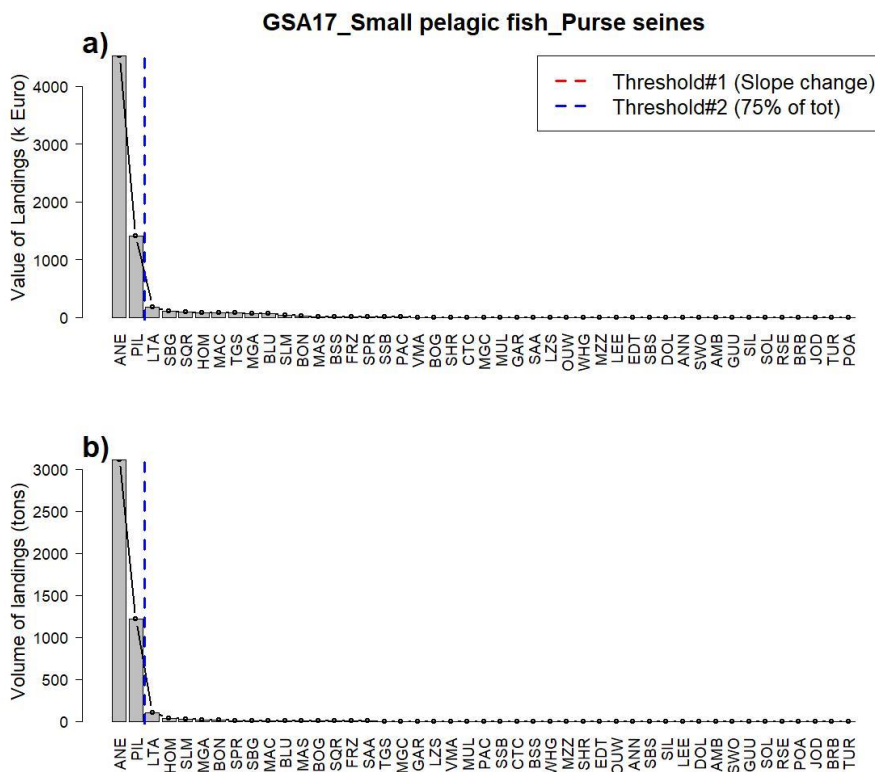


Fig. 3.4.1.: Landing value (a) and volume(b) of small pelagic fish fished by purse seines in the Italian side of GSA17.

As regards catadromous fished by fyke nets, the European eel is the most important species in terms of both value and volume of landings. European seabass and Marine crabs nei are the second species in terms of landings' value and volume respectively. Silversides (=Sand smelts) nei is the third species in terms of volume of landings (fig. 3.4.2.)

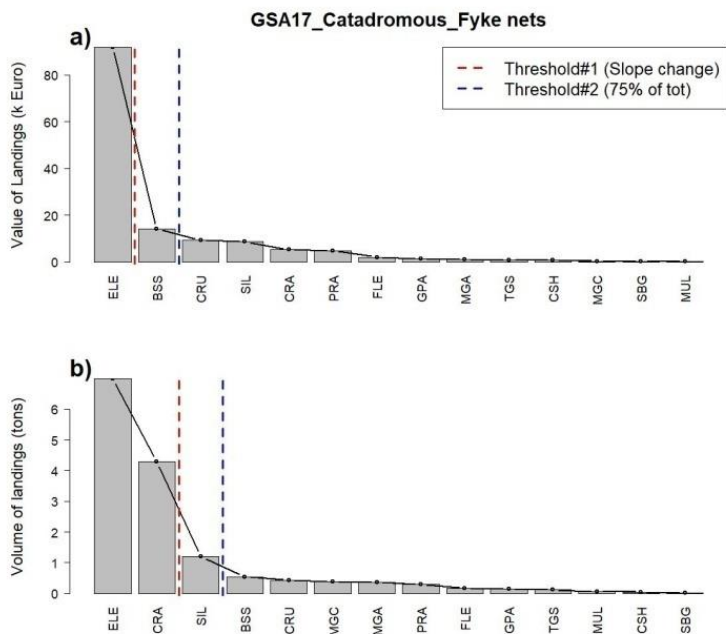


Fig. 3.4.2.: Landing value (a) and volume (b) of catadromous fished by fyke nets in the Italian side of GSA17.



As regards demersal fish fished by beam trawl, the Common sole is the most important species in terms of both value and volume of landings. Other relevant species in terms of value of landings are: Common cuttlefish; Spottail mantis squillid; Purple dye murex; Caramote prawn. In terms of volume, Purple dye murex, Common cuttlefish, Spottail mantis squillid are also important, together with Murex (fig. 3.4.3.).

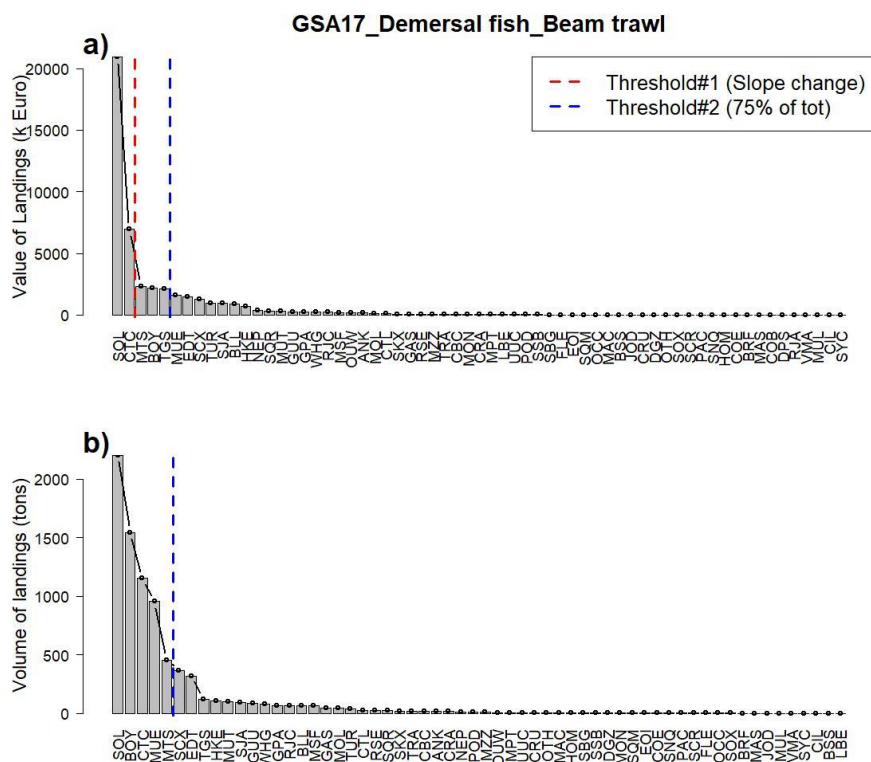


Fig. 3.4.3.: Landing value (a) and volume (b) of demersal fish fished by Beam trawl in the Italian side of GSA17.

With reference to demersal fish fished by bottom otter trawl, the Spottail mantis squillid is the most important species in terms of both value and volume of landings. Other species relevant in terms of value of landings are: European hake, Common cuttlefish, Norway lobster, Red mullet, Caramote prawn, Musky octopus. In terms of volume: Red mullet, European hake, Common cuttlefish, Musky octopus (fig. 3.4.4.).

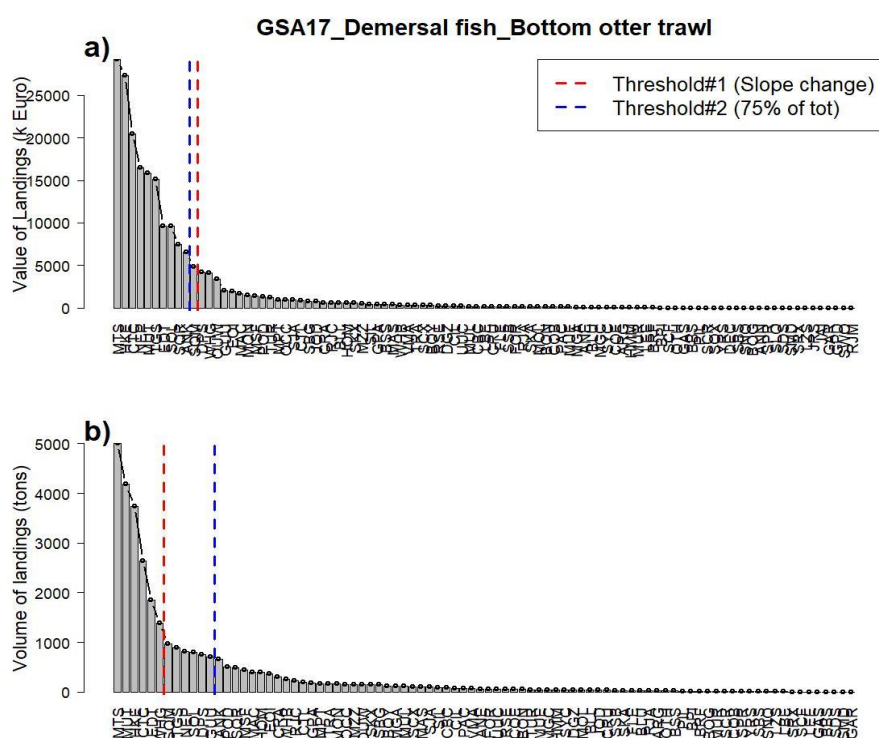


Fig. 3.4.4.: Landing value (a) and volume (b) of demersal fish fished by bottom otter trawl in the Italian side of GSA17.

As regards demersal fish fished by fyke nets, the Common cuttlefish is the most important species in terms of both value and volume of landings. Other important species in terms of value are: Silversides (=Sand smelts) nei, Marine crustaceans nei, Spottail mantis squillid, Northern prawn, European seabass. Silversides(=Sand smelts) nei, Spottail mantis squillid, Marine crustaceans nei are also important in terms of volume, together with Marine crabs nei, Red mullet, Gobies nei (fig. 3.4.5.).

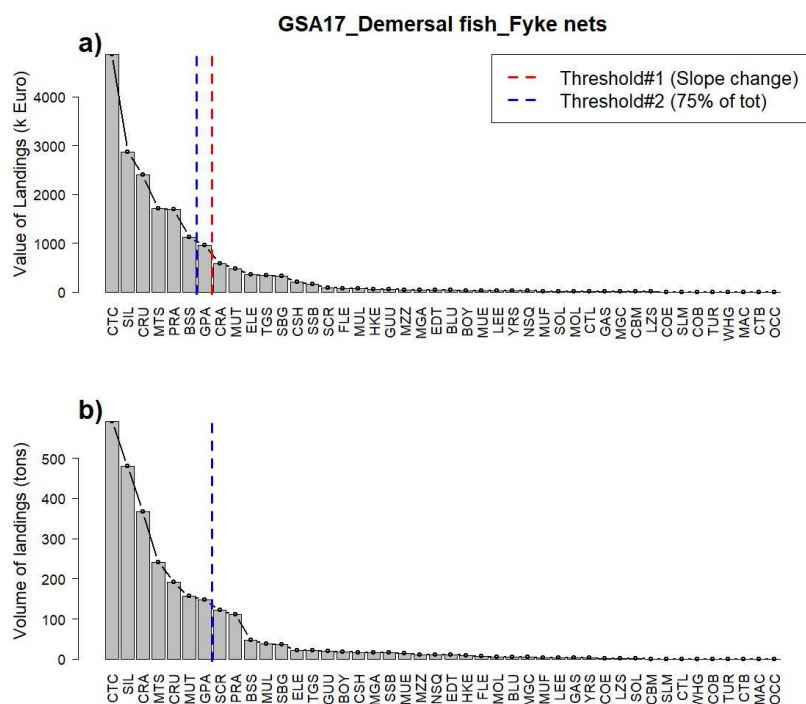


Fig. 3.4.5.: Landing value (a) and volume (b) of demersal fish fished by fyke nets in the Italian side of GSA17.

Regarding demersal fish fished by pots, the Common cuttlefish is the most important species in terms of both value and volume of landings (fig. 3.4.6).

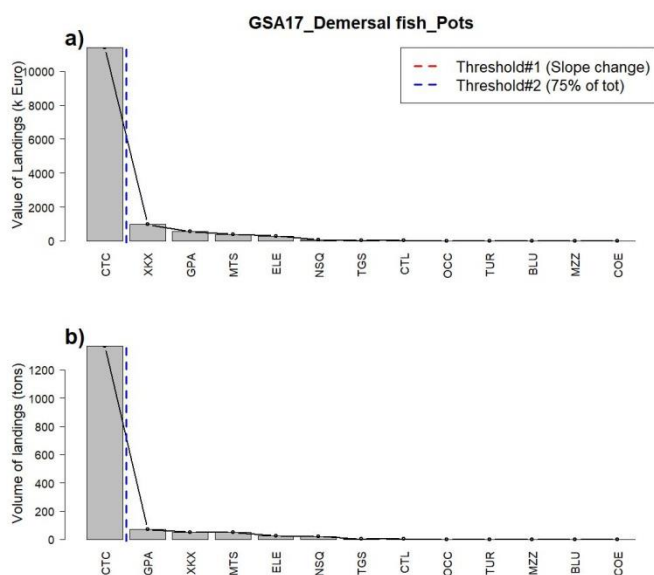


Fig. 3.4.6.: Landing value (a) and volume (b) of demersal fish fished by pots in the Italian side of GSA17.

As regards demersal fish fished by set gillnets (anchored), the Common sole is the most important species in terms of both value and volume of landings. Other important species in terms of value are Spottail mantis squillid, Marine fishes nei, Gilthead seabream, Sand steenbras, Common cuttlefish. In terms of volume are also important Spottail mantis squillid, Thinlip grey mullet, Marine fishes nei, Gilthead seabream, Mulletts nei, Purple dye murex (fig. 3.4.7.).

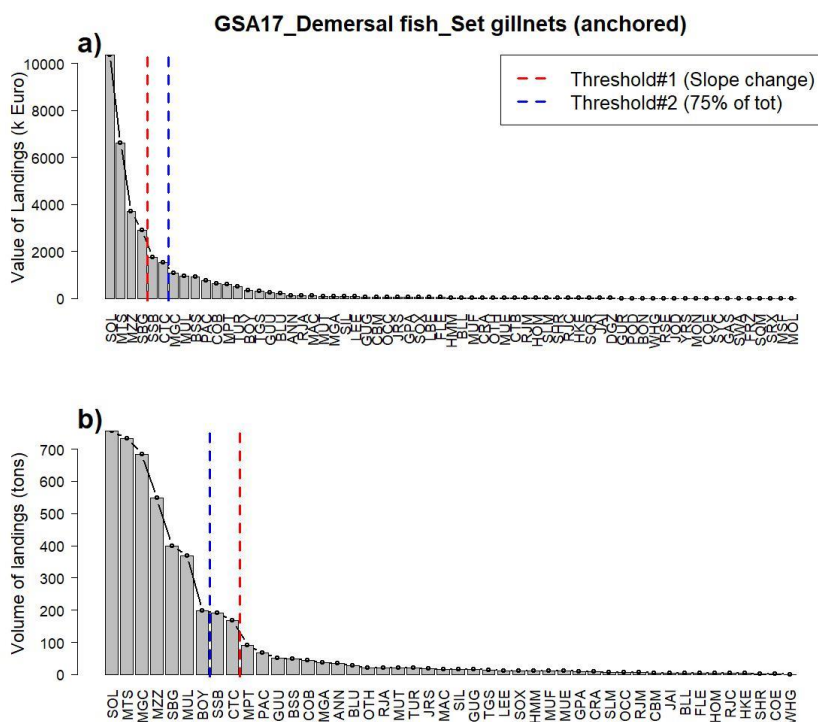


Fig. 3.4.7: Landing value (a) and volume (b) of demersal fish fished by set gillnets (anchored) in the Italian side of GSA17.



As regards large pelagic fish fished by purse seines, the Atlantic Bluefin Tuna is the most important species in terms of both value and volume of landings (fig.3.4.9).

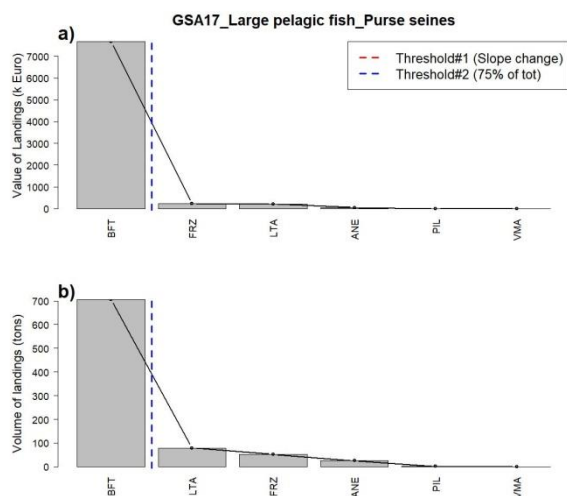


Fig. 3.4.9.: Landing value (a) and volume (b) of large pelagic fish fished by purse seines in the Italian side of GSA17.

As regards miscellanea fished by miscellaneous gear, the Changeable nassa is the most important species in terms of both value and volume of landings (fig. 3.4.10.). It is known that the fishery is carried out with basket trap as described in Grati et al. (2010).

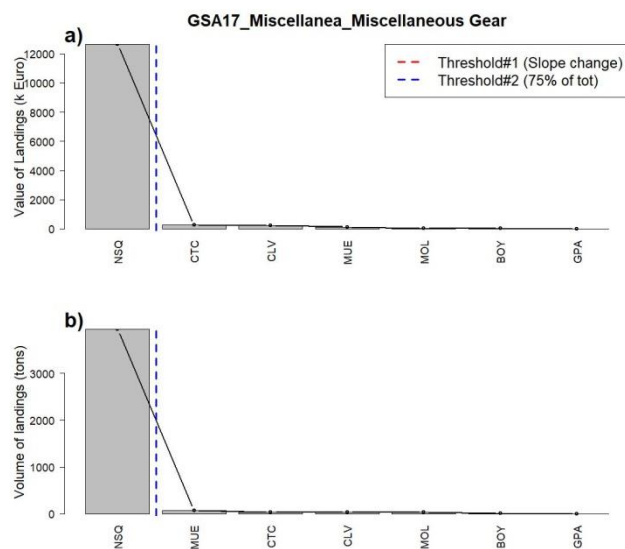


Fig. 3.4.10.: Landing value (a) and volume (b) of miscellanea fished by miscellaneous gear in the Italian side of GSA17.



As regards mixed demersal and deep water species fished by bottom otter trawl, the European hake is the most important species in terms of both value and volume of landings. Other important species in terms of value are Norway lobster, Caramote prawn, Giant red shrimp, Blackbellied angler, Broadtail shortfin squid, Red mullet, Spottail mantis squillid. In terms of volume are also important Red Mullet, Norway lobster, Broadtail shortfin squid, Musky octopus, Spottail mantis squillid, Caramote prawn, Blackbellied angler, Giant red shrimp, Poor cod, Atlantic mackerel.

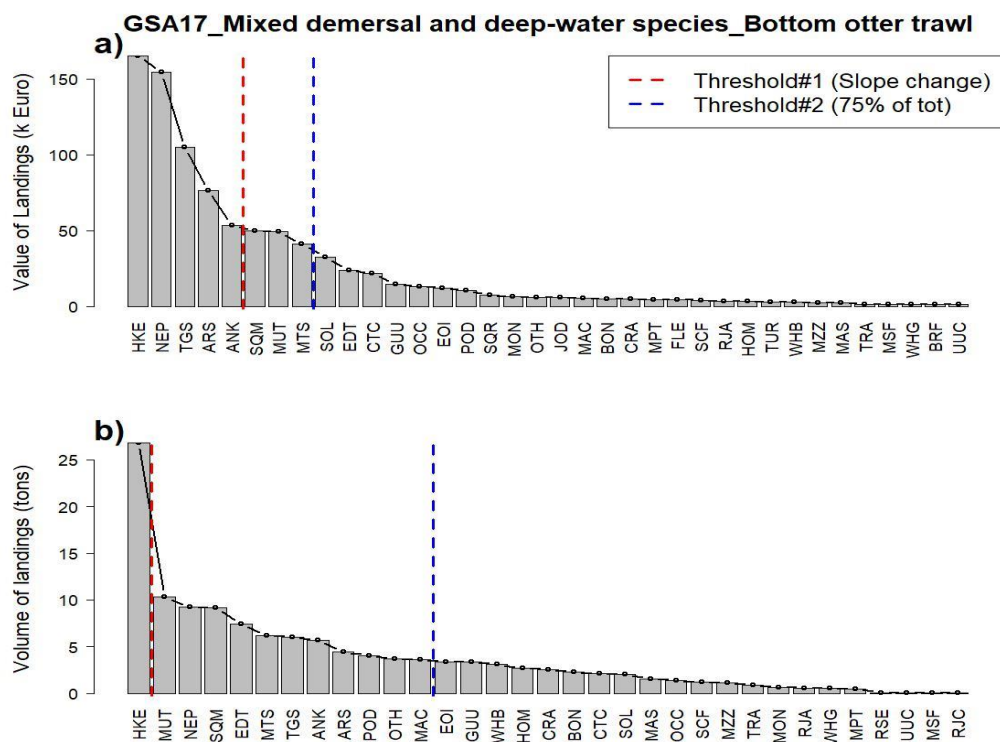


Fig. 3.4.11.: Landing value (a) and volume (b) of mixed demersal and deep-water species fished by bottom otter trawl in the Italian side of GSA17.

As regards molluscs fished by boat dredges, the Striped venus is the most important species in terms of both value and volume of landings (fig. 3.4.12).

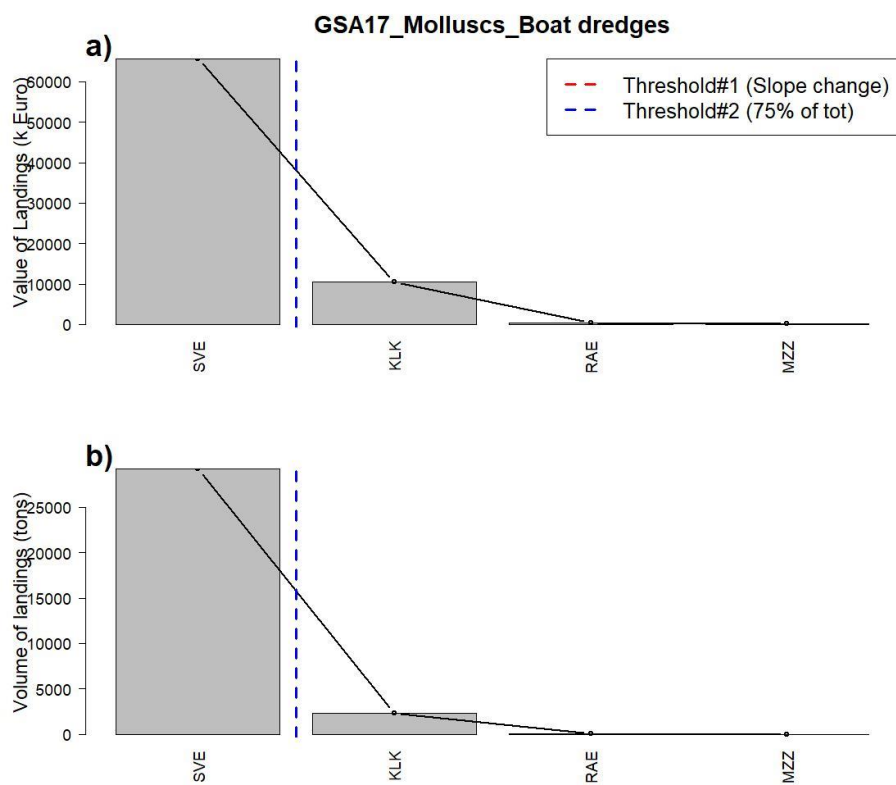


Fig. 3.4.12: Landing value (a) and volume (b) of molluscs fished by boat dredges in the Italian side of GSA17.

As regards small pelagic fish fished by pelagic pair trawl, the European anchovy and the European pilchard (=Sardine) are the most important species in terms of value and volume of landings respectively (fig. 3.4.13.).

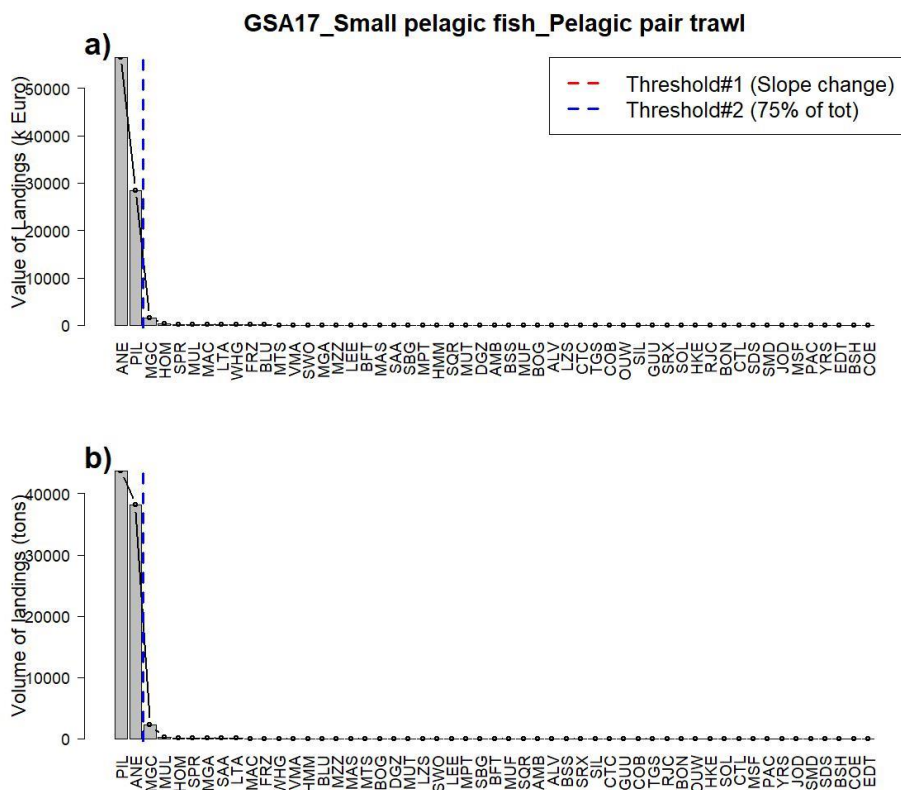


Fig. 3.4.13.: Landing value (a) and volume (b) of small pelagic fish fished by pelagic pair trawl in the Italian side of GSA17.

## 4. CONCLUSIONS

In the Italian side of the Adriatic Sea (GSA17), the most important fisheries (as combination of species and gears) in terms of value are the following:

- Striped venus fished by hydraulic dredges;
- European anchovy fished by pelagic pair trawl;
- Spottail mantis squillid fished by bottom otter trawl;
- European pilchard(=Sardine) fished by pelagic pair trawl;
- European hake fished by bottom otter trawl;
- Common sole fished by beam trawl;
- Common cuttlefish fished by bottom otter trawl;
- Norway lobster fished by bottom otter trawl;
- Red mullet fished by bottom otter trawl.

The most important in terms of volume are:

- European pilchard(=Sardine) fished by pelagic pair trawl;
- European anchovy fished by pelagic pair trawl;
- Striped venus fished by hydraulic dredges;
- Spottail mantis squillid fished by bottom otter trawl;
- Red mullet fished by fished by bottom otter trawl;
- Changeable nassa fished by miscellaneous Gear;
- European hake fished by bottom otter trawl;
- European anchovy fished by Purse seines;
- Common cuttlefish fished by bottom otter trawl.

Therefore, some of these fisheries, such as Striped venus fished by hydraulic dredges, European anchovy fished by pelagic pair trawl, Spottail mantis squillid fished by bottom otter trawl, European pilchard(=Sardine) fished by pelagic pair trawl, are among the most important in both terms of value and volume of landings.

However, the first 20 fisheries in terms of value (Table 9) should be considered as potentially interested in applying for certification process, taking into account also the sustainability of the fishing techniques.

**Table 9. First 20 Fisheries in the Italian side of the GSA 17 by value of landings**

N°	Spp (3 alpha code)	Common name (English)	Fishing technique acronym	Fishing technique description	Mean value of landings 2015-2016 (K Euro)
1	SVE	Striped venus	DRB	Dredgers	32,847.6
2	ANE	European anchovy	PTM	Pelagic pair trawl	28,272.6
3	MTS	Spottail mantis squillid	OTB	Bottom otter trawl	14,606.8
4	PIL	European pilchard(=Sardine)	PTM	Pelagic pair trawl	14,241.8
5	HKE	European hake	OTB	Bottom otter trawl	13,653.8
6	SOL	Common sole	TBB	Beam trawl	10,473.3
7	CTC	Common cuttlefish	OTB	Bottom otter trawl	10,237.1
8	NEP	Norway lobster	OTB	Bottom otter trawl	8,234.7
9	MUT	Red mullet	OTB	Bottom otter trawl	7,925.3
10	TGS	Caramote prawn	OTB	Bottom otter trawl	7,559.9
11	NSQ	Changeable nassa	MIS	Miscellaneous gear	6,330.5
12	CTC	Common cuttlefish	FPO	Pots	5,700.0
13	KLK	Smooth callista	DRB	Dredgers	5,242.3
14	SOL	Common sole	GNS	Set gillnets(anchored)	5,178.4
15	EDT	Musky octopus	OTB	Bottom otter trawl	4,835.9
16	SOL	Common sole	OTB	Bottom otter trawl	4,799.8
17	BFT	Atlantic bluefin tuna	PS	Purse seines	3,836.0
18	SQR	European squid	OTB	Bottom otter trawl	3,752.1
19	CTC	Common cuttlefish	TBB	Beam trawl	3,478.8
20	MTS	Spottail mantis squillid	GNS	Set gillnets(anchored)	3,299.2

Source: <https://stecf.jrc.ec.europa.eu/data-dissemination>

In addition, according to our expertise and considering the environmental impacts of gears, the following fisheries out of the top 20 in terms of value (as reported in Table 9) are potential source of eco-labelled products and, therefore, should be selected as “candidate sustainable fisheries” to start an Adriatic Responsible Fishery (ARF) certification process:

- Changeable nassa fished by miscellaneous gear (basket traps);
- Spottail mantis squillid with Set gillnets (or small pots)
- Common cuttlefish fished by pots;
- Common sole fished by Set gillnets (anchored).

The provisional list reported in Table 9, will be compared to that emerging from the *Activity 3.1: Analysis of state, management and seasonality of fisheries* carried out in the Croatian side of the Adriatic Sea, which will be provided under Deliverable D.3.1.2. in month 12 of the Prizefish Project.

Based on this preliminary scrutiny, a final list of 10-20 fisheries will be developed taking into account, besides the potential market added-value of fisheries products and the characteristics of

the fisheries sector in both sides of the Adriatic Sea, also the environmental impacts of the fisheries concerned as well as their social and economic dimension.

In the statistics here provided, are not reported two fisheries that according with the discussion had during the first year of the project can be considered important for eco-labeling:

- hydraulic dredges for razor clam;
- hand harvesting of mussels from scuba divers, working on Adriatic gas platform.

Razor clam (*Ensis minor*) became quite rare in the Italian side of the GSA 17. However, in 2018 a restocking activity was carried out in the Chioggia-Venezia fishing compartment. Therefore, a fishery targeting razor clam with hydraulic dredge, can be considered a good candidate for an eco-labeling process, considering that in the same area the clam fishery is certified according to the MSC standards.

The second candidate, the underwater fishing of wild mussels, is a special features of Ravenna seamanship, which has a great potential for sustainability certification since it relies on a mild impacting technique. Two fishing cooperatives, eight vessels and a thirty of operators employed in the sector are engaged in this fishing, which is open from spring to the end of autumn. The collection of mussels is conducted by diving and by specialized technical operators, since the fishing is simultaneously an unload activity to maintain the gas platform clean. It is literally handmade, scraping the underwater “legs” of structures, with the collection that concerns only those individuals of more than 25 mm. The product ends up directly on the market, since it comes from classified waters and does not require relaying treatment. Compared to the quantities of mussels produced by traditional farms, volumes are attested to a significantly lower percentage, but the quality of the product - which is in all respects a wild and non-reared animal - is superior. Approximately 7,500 q of wild mussels are fished each year.

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## 6. Annex I – List of species fished in GSA 17

The table below (Table 10) reports species included in the mapping of GSA 17 by Spp. acronym (3 alpha code), scientific name, and common name (in Italian and English).

Spp. (FAO 3-alpha code)	Scientific name	Common name (Italian)	Common name (English)
AGK	<i>Gymnothorax unicolor</i>	Murena nera	Brown moray
ALB	<i>Thunnus alalunga</i>	Alalunga	Albacore
ALV	<i>Alopias vulpinus</i>	Pesce volpe	Thresher
AMB	<i>Seriola dumerili</i>	Ricciole	Greater amberjack
ANE	<i>Engraulis encrasicolus</i>	Alici	European anchovy
ANK	<i>Lophius budegassa</i>	Budego	Blackbellied angler
ANN	<i>Diplodus annularis</i>	Sarago sparaglione o sparlotto	Annular seabream
ARA	<i>Aristeus antennatus</i>	Gambero viola	Blue and red shrimp
ARG	<i>Argentina spp</i>	Argentine	Argentines
ARS	<i>Aristaeomorpha foliacea</i>	Gamberi rossi	Giant red shrimp
BBS	<i>Scorpaena porcus</i>	Scorfano nero	Black scorpionfish
BFT	<i>Thunnus thynnus</i>	Tonno rosso	Atlantic bluefin tuna
BIL	<i>Istiophoridae</i>	Istiophoridae	Marlins,sailfishes,etc. nei
BLL	<i>Scophthalmus rhombus</i>	Rombo liscio	Brill
BLU	<i>Pomatomus saltatrix</i>	Pesce serra	Bluefish
BOG	<i>Boops boops</i>	Boghe	Bogue
BON	<i>Sarda sarda</i>	Palamita	Atlantic bonito
BOY	<i>Bolinus brandaris</i>	Murice spinoso	Purple dye murex
BPI	<i>Spicara maena</i>	Mendola, mennola	Blotched picarel
BRB	<i>Spondyliosoma cantharus</i>	Tanute	Black seabream
BRF	<i>Helicolenus dactylopterus</i>	Scorfani di fondale	Blackbelly rosefish
BSH	<i>Prionace glauca</i>	Verdesca	Blue shark
BSS	<i>Dicentrarchus labrax</i>	Spigole	European seabass
BSX	<i>Serranidae</i>	Serranidae	Groupers, seabasses nei
CBC	<i>Cepola macrophthalma</i>	Cepola	Red bandfish
CBM	<i>Sciaena umbra</i>	Corvine	Brown meagre
CIL	<i>Citharus linguatula</i>	Linguattola	Spotted flounder
CLV	<i>Veneridae</i>	Altri veneridi	Venus clams nei

Spp. (FAO 3-alpha code)	Scientific name	Common name (Italian)	Common name (English)
COB	<i>Umbrina cirrosa</i>	Ombrine	Shi drum
COE	<i>Conger conger</i>	Gronghi	European conger
COZ	<i>Cardiidae</i>	Cuore	Cockles nei
CRA	<i>Brachyura</i>	Granchi	Marine crabs nei
CRU	<i>Crustacea</i>	Altri crostacei	Marine crustaceans nei
CSH	<i>Crangon crangon</i>	Gamberetti crangon	Common shrimp
CTB	<i>Diplodus vulgaris</i>	Sarago fasciato	Common two-banded seabream
CTC	<i>Sepia officinalis</i>	Seppia mediterranea o comune	Common cuttlefish
CTL	<i>Sepiidae, Sepiolidae</i>	Seppioline altre	Cuttlefish, bobtail squids nei
CTZ	<i>Chelidonichthys lastoviza</i>	Capone ubriaco	Streaked gurnard
CVW	<i>Chlorophthalmus agassizi</i>	Pastinaca	Shortnose greeneye
DEC	<i>Dentex dentex</i>	Dentici	Common dentex
DGZ	<i>Squalus spp</i>	Squali	Dogfishes nei
DOL	<i>Coryphaena hippurus</i>	Lampughe	Common dolphinfish
DON	<i>Donax spp</i>	Telline	Donax clams
DPS	<i>Parapenaeus longirostris</i>	Gamberi bianchi o rosa	Deep-water rose shrimp
EDT	<i>Eledone moschata</i>	Moscardino muschiato	Musky octopus
EHI	<i>Centracanthus cirrus</i>	Zerro musillo	Curled picarel
ELE	<i>Anguilla anguilla</i>	Anguille	European eel
EOI	<i>Eledone cirrhosa</i>	Moscardino bianco	Horned octopus
EZS	<i>Scorpaena elongata</i>	Scorfano rosa	Slender rockfish
FIM	<i>Aphia minuta</i>	Rossetto	Transparent goby
FLE	<i>Platichthys flesus</i>	Passera	European flounder
FOR	<i>Phycis phycis</i>	Musdea	Forkbeard
FRZ	<i>Auxis thazard, A. rochei</i>	Scombroidei	Frigate and bullet tunas
GAR	<i>Belone belone</i>	Aguglie	Garfish
GAS	<i>Gastropoda</i>	Gasteropodi	Gastropods nei
GAU	<i>Galeus spp</i>	Gattucci	Crest-tail catsharks nei
GFB	<i>Phycis blennoides</i>	Musdea bianca	Greater forkbeard
GPA	<i>Gobiidae</i>	Ghiozzi	Gobies nei
GPD	<i>Epinephelus marginatus</i>	Cernia di scoglio	Dusky grouper
GUG	<i>Eutrigla gurnardus</i>	Capone	Grey gurnard
GUM	<i>Chelidonichthys obscurus</i>	Capone gavotta	Longfin gurnard
GUN	<i>Trigla lyra</i>	Capone testola	Piper gurnard

Spp. (FAO 3-alpha code)	Scientific name	Common name (Italian)	Common name (English)
GUR	<i>Aspitrigla cuculus</i>	Capone cocchio	Red gurnard
GUU	<i>Chelidonichthys lucerna</i>	Gallinella o cappone	Tub gurnard
HKE	<i>Merluccius merluccius</i>	Nasello	European hake
HMM	<i>Trachurus mediterraneus</i>	Sugarello maggiore	Mediterranean horse mackerel
HOM	<i>Trachurus trachurus</i>	Sugarello o suro	Atlantic horse mackerel
HXT	<i>Heptranchias perlo</i>	Squalo manzo	Sharpnose sevengill shark
JAA	<i>Trachurus picturatus</i>	Sugarello pittato	Blue jack mackerel
JAI	<i>Raja miraletus</i>	Razza quattrocchi	Brown ray
JOD	<i>Zeus faber</i>	Pesce san pietro	John dory
JRS	<i>Raja asterias</i>	Razza stellata	Mediterranean starry ray
KLK	<i>Callista chione</i>	Fasolari	Smooth callista
LBE	<i>Homarus gammarus</i>	Astice	European lobster
LEE	<i>Lichia amia</i>	Leccia	Leerfish
LTA	<i>Euthynnus alletteratus</i>	Tonnetto	Little tunny(=Atl.black skipj)
LZS	<i>Liza saliens</i>	Cefalo verzelata	Leaping mullet
MAC	<i>Scomber scombrus</i>	Sgombro	Atlantic mackerel
MAS	<i>Scomber japonicus</i>	Lanzardo	Chub mackerel
MGA	<i>Liza aurata</i>	Cefalo dorato	Golden grey mullet
MGC	<i>Liza ramada</i>	Cefalo calamita	Thinlip grey mullet
MMH	<i>Muraena helena</i>	Murene	Mediterranean moray
MOL	<i>Mollusca</i>	Molluschi	Marine molluscs nei
MON	<i>Lophius piscatorius</i>	Rana pescatrice	Angler(=Monk)
MPT	<i>Mustelus punctulatus</i>	Palombo	Blackspotted smooth-hound
MSF	<i>Arnoglossus laterna</i>	Zanchetta	Mediterranean scaldfish
MTS	<i>Squilla mantis</i>	Pannocchie	Spottail mantis squillid
MUE	<i>Murex spp</i>	Murici	Murex
MUF	<i>Mugil cephalus</i>	Cefalo volpina	Flathead grey mullet
MUL	<i>Mugilidae</i>	Cefali altri	Mulletts nei
MUR	<i>Mullus surmuletus</i>	Triglie di scoglio	Surmullet
MUT	<i>Mullus barbatus</i>	Triglie di fango	Red mullet
MZZ	<i>Osteichthyes</i>	Altri pesci	Marine fishes nei
NAU	<i>Naucrates ductor</i>	Pesce pilota	Pilotfish
NEP	<i>Nephrops norvegicus</i>	Scampi	Norway lobster
NSQ	<i>Nassarius mutabilis</i>	Lumachini	Changeable nassa

Spp. (FAO 3-alpha code)	Scientific name	Common name (Italian)	Common name (English)
OCC	<i>Octopus vulgaris</i>	Polpo comune o di scoglio	Common octopus
O UW	<i>Alloteuthis spp</i>	Calamaretto	Alloteuthis squids nei
PAC	<i>Pagellus erythrinus</i>	Pagello fragolino	Common pandora
PIL	<i>Sardina pilchardus</i>	Sardine	European pilchard(=Sardine)
POA	<i>Brama brama</i>	Pesce castagna	Atlantic pomfret
POD	<i>Trisopterus minutus</i>	Cappellano	Poor cod
POP	<i>Trachinotus ovatus</i>	Leccia stella	Pompano
POR	<i>Lamna nasus</i>	Smeriglio	Porbeagle
PRA	<i>Pandalus borealis</i>	Gamberelli pandalidi o di nassa	Northern prawn
RAE	<i>Solen marginatus</i>	Cannolicchio	European razor clam
RJA	<i>Raja alba</i>	Razza bianca	White skate
RJC	<i>Raja clavata</i>	Razza chiodata	Thornback ray
RJM	<i>Raja montagui</i>	Razza maculata	Spotted ray
RPG	<i>Pagrus pagrus</i>	Pagro comune	Red porgy
RSE	<i>Scorpaena scrofa</i>	Scorfano rosso	Red scorpionfish
SAA	<i>Sardinella aurita</i>	Alaccia	Round sardinella
SAN	<i>Ammodytes spp</i>	Cicerello	Sandeels(=Sandlances) nei
SAU	<i>Scomberesox saurus</i>	Costardelle	Atlantic saury
SBA	<i>Pagellus acarne</i>	Pagello mafrone	Axillary seabream
SBG	<i>Sparus aurata</i>	Orate	Gilthead seabream
SBL	<i>Hexanchus griseus</i>	Squalo capopiatto	Bluntnose sixgill shark
SBR	<i>Pagellus bogaraveo</i>	Pagello rovello	Blackspot(=red) seabream
SBS	<i>Oblada melanura</i>	Occhiate	Saddled seabream
SCF	<i>Scophthalmidae</i>	Rombi altri	Turbots nei
SCO	<i>Scorpaenidae</i>	Scorfani altri	Scorpionfishes nei
SCR	<i>Maja squinado</i>	Granceola	Spinous spider crab
SCX	<i>Pectinidae</i>	Pettini	Scallops nei
SDS	<i>Mustelus asterias</i>	Palombo stellato	Starry smooth-hound
SFS	<i>Lepidopus caudatus</i>	Pesce sciabola	Silver scabbardfish
SHR	<i>Diplodus puntazzo</i>	Sarago pizzuto	Sharpsnout seabream
SIL	<i>Atherinidae</i>	Latterino	Silversides(=Sand smelts) nei
SJA	<i>Pecten jacobaeus</i>	Capesante	Great Mediterranean scallop
SKA	<i>Raja spp</i>	Razze altre	Raja rays nei

Spp. (FAO 3-alpha code)	Scientific name	Common name (Italian)	Common name (English)
SKJ	<i>Katsuwonus pelamis</i>	Tonnetto striato	Skipjack tuna
SKX	<i>Elasmobranchii</i>	Elasmobranchi	Sharks, rays, skates, ect.
SLM	<i>Sarpa salpa</i>	Salpa	Salema
SLO	<i>Palinurus elephas</i>	Aragosta	Common spiny lobster
SMD	<i>Mustelus mustelus</i>	Palombo liscio	Smooth-hound
SNQ	<i>Scorpaena notata</i>	Scorfanotto	Small red scorpionfish
SOL	<i>Solea solea</i>	Sogliola comune	Common sole
SOX	<i>Soleidae</i>	Sogliole miste	Soles nei
SPC	<i>Spicara smaris</i>	Zerro, menola	Picarel
SPN	<i>Sphyrna spp</i>	Squalo martello	Hammerhead sharks nei
SPR	<i>Sprattus sprattus</i>	Spratti	European sprat
SQC	<i>Loligo spp</i>	Calamari	Common squids nei
SQE	<i>Todarodes sagittatus</i>	Totano viola	European flying squid
SQM	<i>Illex coindetii</i>	Totano comune	Broadtail shortfin squid
SQR	<i>Loligo vulgaris</i>	Calamaro mediterraneo	European squid
SRG	<i>Diplodus spp</i>	Saraghi altri	Sargo breams nei
SRX	<i>Rajiformes</i>	Raiformi	Rays, stingrays, mantas nei
SSB	<i>Lithognathus mormyrus</i>	Mormore	Sand steenbras
STT	<i>Dasyatidae</i>	Occhi verdi	Stingrays, butterfly rays nei
SVE	<i>Chamelea gallina</i>	Vongole	Striped venus
SWA	<i>Diplodus sargus</i>	Sarago maggiore	White seabream
SWO	<i>Xiphias gladius</i>	Pesce spada	Swordfish
SYC	<i>Scyliorhinus canicula</i>	Gattuccio	Small-spotted catshark
SYT	<i>Scyliorhinus stellaris</i>	Gattopardo	Nursehound
TDQ	<i>Todaropsis eblanae</i>	Totano tozzo	Lesser flying squid
TGS	<i>Penaeus kerathurus</i>	Mazzancolle	Caramote prawn
TRA	<i>Trachinidae</i>	Tracine	Weeverfishes nei
TUR	<i>Psetta maxima</i>	Rombo chiodato	Turbot
UUC	<i>Uranoscopus scaber</i>	Pesce prete	Stargazer
VMA	<i>Scomber colias</i>	Lanzardo atlantico	Atlantic chub mackerel
WHB	<i>Micromesistius poutassou</i>	Melu' o potassolo	Blue whiting(=Poutassou)
WHG	<i>Merlangius merlangus</i>	Merlano	Whiting
WRA	<i>Labridae</i>	Labridae	Wrasses, hogfishes, etc. nei
XKX	<i>Plesionika spp</i>	Gobetto	Plesionika shrimps nei
XYN	<i>Xyrichtys novacula</i>	Pesce pettine o pesce rasoio	Pearly razorfish

Spp. (FAO 3-alpha code)	Scientific name	Common name (Italian)	Common name (English)
YRS	<i>Sphyraena sphyraena</i>	Luccio	European barracuda

Source: <https://stecf.jrc.ec.europa.eu/data-dissemination>

## 7. Annex II– Mapping results in Excel Table

The overall results of the mapping of fisheries in the Italian side of the Adriatic Sea, detailed in Section 3 of the Report, are available in excel format at the following hypertext link:


[DELIV 3 1 1 Prizefish.xlsx](#)



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