

"Piloting of eco-innovative fishery supply–chains to market added–value Adriatic fish products"

Priority Axis: Blue innovation

1.1 - Enhance the framework conditions for innovation in the relevant sectors of the blue economy within the cooperation area

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.

OCTOBER / 2019

PARTNER IN CHARGE: PP2-CNR-IRBIM PARTNERS INVOLVED: PP4-CESTHA; IZOR-PP6; OGS-PP7

> Final Public document

European Regional Development Fund

www.italy-croatia.eu/web/prizefish



ORDER	CNR – IRBIM		
TYPE OF DOCUMENT	PROJECT PRIZEFISH - Piloting of eco-innovative fishery supply- chains to market added-value Adriatic fish product REPORT D3.1.1		
DELIVERY PERIOD	M10		
SUPERVISOR	Giuseppe Scarcella		
MEMBERS OF THE TEAM	Piero Polidori, Pierluigi Strafella, Giulia Sandalli, Stefano Guicciardi, Angela Santelli, Alessandra Spagnolo.	CNR- IRBIM	
	Simone D'Acunto, Sara Segati, Silvia Brandi	PP4-CESTHA	
	Nedo Vrgoč, Petra Lukic, Igor Isajlović	IZOR-PP6	
	Simone Libralato	OGS-PP7	



"This document reflects the author's views; the Programme authorities are not liable for any use that may be made of the information contained therein".

TABLE OF CONTENTS

1.	I	NTRO	DDUCTION	7
2.	ľ	METH	IODOLOGY	11
:	2.1	D	ata sources	11
	2	2.1.1	Fleet Register	11
	2	2.1.2	European Commission	11
	2	2.1.3	General Fisheries Commission for the Mediterranean (GFCM)	11
	2	2.1.4	International Commission for the Conservation of Atlantic Tunas (ICCAT)	12
	2	2.1.5	Other sources: scientific literature	12
	2.2	2 D	ata analysis and reporting	12
	2	2.2.1	Fishing fleet data: gears, metiers and fishing technique	12
	2	2.2.2	Identification of fisheries	20
3. pro	۱ عمد	MAPF ess	PING RESULT: Italian fisheries operating in the GSA17 potentially eligible for eco-labellin	1g 23
	3	3.1.	Fleet composition	23
	3	3.2.Fi	shing fleet distribution	24
	3.3	3.The	most important fisheries for volume and value of landings	25
; t	3.4 thr	l. C eshol	composition of landings (volume and value) by fishery and species according to the 75% d approach, sum 2015-2016	26
4.	(CONC	CLUSIONS	37
5.	F	REFE	RENCES	10
6.	A	Anne>	I– List of species fished in GSA 17	11
7.	A	Anne>	II– Mapping results in Excel Table	17



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.

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 nongovernmental 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 purse 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).





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 20will 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). 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/dataanalysis.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)

for shared Mediterranean demersal stocks and small pelagic fish stocks.

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 <u>§§§ttps://stecf.jrc.ec.europa.eu/dd/medbs/ram</u>. Detailed information is also available, in the form of reports, on the webpage: <u>https://stecf.jrc.ec.europa.eu/reports/medbs</u>. In parallel to the STECF, the Scientific Advisory Committee (SAC) to the GFCM, runs stock assessments

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 decisions 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, metiers and fishing technique

The composition of the Italian fishing fleet in GSA 17was 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 classification¹ 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 in the fisheries sector for the period 2011-2013 (2010/93/EC). These data are summarised in Table 1.

¹Also adopted by the GFCM (GFCM, 2018).



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

Gear acronym	Gear description
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 ²
NO	NO GEAR
ОТВ	Bottom otter trawl
ОТМ	Mid water otter trawl
ΟΤΤ	Otter twin trawl
PS	Purse seines
РТВ	Bottom pair trawl
ΡΤΜ	Pelagic pair trawl
SB	Beach seines
SDN	Danish seines
SPR	Pair seines

² NK, Not Known is allowed in case of confidentiality issues.



Gear acronym	Gear description	
SSC	Scottish seines	
SV	Beach and boat seines	
ТВВ	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 (<u>https://datacollection.jrc.ec.europa.eu/wordef/fishing-activity-metier</u>).

Level 1	Level 2	Level 3	Level 4		
Activity	Activity Gear classes		Gear type		
	Dredges	Dredges	Boat dredge [DRB]		
Fishing Activity	Trawls	Bottom trawls	Bottom otter trawl [OTB]		
			Bottom otter trawl [OTB] Multi-rig otter trawl [OTT] Bottom pair trawl [PTB] Beam trawl [TBB]		
			Level 4 Gear type Boat dredge [DRB] Bottom otter trawl [OTB] Multi-rig otter trawl [OTT] Bottom pair trawl [OTT] Beam trawl [TBB] Midwater otter trawl [OTM] Pelagic pair trawl [PTM]		
			Beam trawl [TBB]		
		Pologic trawle	Midwater otter trawl [OTM]		
		relayic trawis	Pelagic pair trawl [PTM]		

Table 2 – List o	of metiers i	in the I	Mediterranean	Sea up	to level 4.



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

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.

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	

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

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	on of vessels for capacities	(MP)		
	Vessel length	< 12 m 1	12 - < 24 m	24 - < 40 m	≥ 40 m
	Type of fishing technique				
Mobile gears	Beam trawl				
	Demersal trawl and demersal seiner				
	Pelagic trawl and seiners				
	Dredges				
	Polyvalent				
Passive gears	Gears using hooks				
	Drift and fixed nets	(1)			
	Pots and traps				
	Polyvalent]			
Polyvalent gears	Combining mobile and passive gears				
(1) This segment is aggregated for all pa	ssive gears.				
Note 1: If a gear category contains fewer	than 10 vessels, then the cell can be merged with a neighbouring length	gth category to be specified in th	e national programme.		
Note 2: If a vessel spends more than 50	% of its time using a specific type of fishing technique, it should be in	cluded in the corresponding segr	nent.		
Note 3: Length is defined as length overa	II (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
нок	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
РМР	Vessels using active and passive gears (polyvalent)
PS	Purse seiners
тм	Pelagic trawlers
ТВВ	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.



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

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



Italian administrative regions	Registration ports
	NUMANA
	PEDASO
	PESARO
	PORTO RECANATI
	PORTO SAN GIORGIO
	SAN BENEDETTO DEL TRONTO
	SENIGALLIA
Molise	TERMOLI
Veneto	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 fisheries³.

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

³For 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.

Gear_target assemblage	"Fishery" description
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
	Bottom otter trawl for mixed demersal and
OTB_MDD	deep-water species
	Midwater otter trawl for mixed pelagic and
OTM_MPD	demersal fish
PS_LPF	Purse seines for large pelagic fish
PS_SPF	Purse seines for small pelagic fish

Table 6–Main fisheries identified in the GSA 17



Gear_target assemblage	"Fishery" description	
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/		

European Regional Development Fund



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.

(length overall, LOA) as of 31 December 2018						
		Number of		Engine	Average	Average age
Fishing technique	LOA classes	vessels	Tonnage (GT)	power (kW)	LOA	ofvessels
DRB	VL1218	583	7,993	63,305	14	29
DTS	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
PGP	VL0006	623	623	8,000	5	33
	VL0612	1,080	2,510	51,550	8	27
	VL1218	13	186	2,676	13	17
PS	VL1218	15	147	1,868	12	37
	VL2440	21	1,989	8,282	25	32
	VL40XX	1	240	412	47	14
ТВВ	VL1218	7	194	1,494	16	38
	VL1824	37	3,216	15,798	22	27
	VL2440	11	1,124	4,071	25	28
тм	VL1218	41	1,075	8,808	16	25
	VL1824	29	2,575	12,135	23	22
	VL2440	26	2,809	12,221	26	24
Total GSA 17		3,049	48,248	307,446	11	29

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

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



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).

FISHERY		Landing volume (tons, mean 2015- 2016)	Landing value (€, mean 2015- 2016)	Effort (days at sea, mean 2015-2016)
Bost dredges for molluscs	VI 1218	15 805	38 373 /61	46 536
Boat dredges for molluses Total	VL1210	15.005	29 272 461	40.550
Bots and trans for demorsal fish	VI.0006	102	1 602 228	9 122
Pots and traps for demensarinsin	VL0612	577	1.002.228	9.132
	VI 1218	3,7	28.450	71
	VI 2440	E1	071 245	690
Pots and trans for domorral fish Total	VL2440	796	6 956 404	17 925
	V/L0006	/30	1 290	17.555
Fyke hets for catadromous	VL0612	7	1.200	770
Fulle note for estadyour our Tatal	V L0012	/	70.435	775
Fyke nets for demorsel fish	V/L0006	150	1 592 259	785
Fyke hets for demersal fish	VL0612	1 211	7 700 415	3.303
	VL0012	1.211	7.766.415	25.145
Participants for descent field Parts	VLIZIO	0	55.740	105
Fyke nets for demersal fish Total		1.3//	9.425.513	29.151
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
Set gillnets (anchored) for demersal fish Total		2.372	17.571.840	51.799
Set gillnets (anchored) for small pelagic fish	VL0612	1	6.433	25
Set gillnets (anchored) for small pelagic fish Total		1	6.433	25
Trammel nets for demersal fish	VL0006	106	887.212	4.446
	VL0612	890	6.121.307	14.237
Trammel nets for demersal fish Total		996	7.008.519	18.682
Drifting longlines for large pelagic fish	VL0006	0	2.946	122
	VL0612	2	20.150	429
Drifting longlines for large pelagic fish Total		2	21.622	490
Set longlines for demersal fish	VL0612	11	107.963	353
Set longlines for demersal fish Total		11	107.963	353
Miscellaneous gears for miscellaneous fish	VL0006	203	654.904	3.887
	VL0612	1.851	5.954.081	18.845
	VL1218	14	78.944	168
Miscellaneous gears for miscellaneous fish Total		2.068	6.687.928	22.900
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
Bottom otter trawl for demersal fish Total		15.800	101.399.449	60.673
Bottom otter trawl for deep water species	VL2440	7	209.247	164
Bottom otter trawl for deep water species Total		7	209.247	164
Bottom otter trawl for mixed demersal and deep-water species	VI 1824	58	434,837	218
	VI2440	11	34.290	30
Bottom otter trawl for mixed demersal and deen-water species Total	11110	64	451.982	233
Midwater otter trawl for mixed belagic and deep-water species rotal	VI 1218	124	345 944	243
Midwater otter trawl for mixed pelagic and demersal fish Total	VL1210	124	345.944	243
Burso soines for large polagic fich	VI 2440	224	15 124	245
	VLIOXX	421	4 072 645	15
Burro soines for large polagis fich Total	V LHUXX	431	4.073.043	19
Purce coines for small pologic fish	VI 1219	432	1 707 615	1 5 2 5
ruise senies iui silidii pelagic lisii	VL1210	0/8	1.767.015	1.525
	V L2440	2.640	2.020.792	1.4/8
Durse seines fer small palagis fick Tatal	VL4UXX	214	329.604	2 2 2 2 2
Purse series for small pelagic fish Total	1// 4240	2.315	3.427.615	2.323
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
Pelagic pair trawl for small pelagic fish Total		42.555	44.197.957	15.851
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
	VL1824 VL2440	2.579	4.258.388	1.773

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

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 squllid 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.).







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, Mullets 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 demersal fish fished by trammel nets, Spottail mantis squillid and the Mullets nei are the most important species in terms of value and volume of landings respectively. Other important species in terms of value are Common cuttlefish, Common sole, European seabass, Gilthead seabream, Mullets nei, Turbot. In terms of volume: Common cuttlefish, Spottail mantis squillid, Gilthead seabream, Common sole, European seabass (fig. 3.4.8.).



Fig. 3.4.8: Landing value (a) and volume (b) of demersal fish fished by trammel nets 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 volumeare 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).







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 bypelagic pair trawl;
- Spottail mantis squillid fished by bottom otter trawl;
- European pilchard(=Sardine) fished bypelagic 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 5.1.) should be considered as potentially interested in applying for certification process, taking into account also the sustainability of the fishing techniques.



N°	Spp (3	Common name (English)	Fishing technique	Fishing technique	Mean value of
	alpha		acronym	description	landings 2015-
	code)				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	ОТВ	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	ТВВ	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	ОТВ	Bottom otter trawl	4,835.9
16	SOL	Common sole	ОТВ	Bottom otter trawl	4,799.8
17	BFT	Atlantic bluefin tuna	PS	Purse seines	3,836.0
18	SQR	European squid	ОТВ	Bottom otter trawl	3,752.1
19	CTC	Common cuttlefish	ТВВ	Beam trawl	3,478.8
20	MTS	Spottail mantis squillid	GNS	Set gillnets(anchored)	3,299.2

Table. 5.1. First 20 Fisheries in the Italian side of the GSA 17 by value of landings

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 5.1.) 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 provisionary list reported in Table 5.1., 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.



5. REFERENCES

Colloca F, Scarcella G and Libralato S (2017) Recent Trends and Impacts of Fisheries Exploitation on Mediterranean Stocks and Ecosystems. Front. Mar. Sci. 4:244. doi: 10.3389/fmars.2017.00244

Froese, R., Winker, H., Coro, G., Demirel, N., Tsikliras, A.C., Dimarchopoulou, D., Scarcella, G., Quaas, M., Matz-Lück, N. (2018). Status and rebuilding of European fisheries. Marine Policy 93 (2018) 159–170.

Grati, F., Polidori, P., Scarcella, G., Fabi, G. 2010. Estimation of basket trap selectivity for changeable nassa (*Nassarius mutabilis*) in the Adriatic Sea. Fisheries Research 101 (2010) 100–107.

González-Álvarez, J., García-de-la-Fuente, L., García-Flórez, L., Fernández-Rueda, Mª del P. and Alcázar-Álvarez, J.L. (2016) Identification and Characterization of Métiers in Multi-Species Artisanal Fisheries. A Case Study in Northwest Spain. Natural Resources, 7, 295-314.

GFCM Data Collection Reference Framework (DCRF). Version: 2018.1 RCM Med&BS, 2008. Report of the 1st Regional Co-ordination Meeting for the Mediterranean and Black seas (RCM Med & BS) under EU Council Regulation 199/2008, Sete, France, 24-28 November 2008.

STECF, 2015. Scientific, Technical and Economic Committee for Fisheries (STECF) –Landing Obligation -Part 6 (Fisheries targeting demersal species in the Mediterranean Sea) (STECF15-19) 2015. Publications Office of the European Union, Luxembourg, EUR 27600 EN, JRC 98678, 268 pp.



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

The table below (Table 6.1.) 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-	Scientific name	Common name (Italian)	Common name (English)
		N4	Dura da como de
AGK	Gymnothorax unicolor	Murena nera	Brown moray
ALB	Thunnus alalunga	Alalunga	Albacore
ALV	Alopias vulpinus	Pesce volpe	Thresher
AMB	Seriola dumerili	Ricciole	Greater amberjack
ANE	Engraulis encrasicolus	Alici	European anchovy
ANK	Lophius budegassa	Budego	Blackbellied angler
ANN	Diplodus annularis	Sarago sparaglione o sparlotto	Annular seabream
ARA	Aristeus antennatus	Gambero viola	Blue and red shrimp
ARG	Argentina spp	Argentine	Argentines
ARS	Aristaeomorpha foliacea	Gamberi rossi	Giant red shrimp
BBS	Scorpaena porcus	Scorfano nero	Black scorpionfish
BFT	Thunnus thynnus	Tonno rosso	Atlantic bluefin tuna
BIL	Istiophoridae	Istiophoridae	Marlins, sailfishes, etc. nei
BLL	Scophthalmus rhombus	Rombo liscio	Brill
BLU	Pomatomus saltatrix	Pesce serra	Bluefish
BOG	Boops boops	Boghe	Bogue
BON	Sarda sarda	Palamita	Atlantic bonito
BOY	Bolinus brandaris	Murice spinoso	Purple dye murex
BPI	Spicara maena	Mendola, mennola	Blotched picarel
BRB	Spondyliosoma cantharus	Tanute	Black seabream
BRF	Helicolenus dactylopterus	Scorfani di fondale	Blackbelly rosefish
BSH	Prionace glauca	Verdesca	Blue shark
BSS	Dicentrarchus labrax	Spigole	European seabass
BSX	Serranidae	Serranidae	Groupers, seabasses nei
CBC	Cepola macrophthalma	Cepola	Red bandfish
СВМ	Sciaena umbra	Corvine	Brown meagre
CIL	Citharus linguatula	Linguattola	Spotted flounder
CLV	Veneridae	Altri veneridi	Venus clams nei



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



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



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



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



Spp. (FAO 3- alpha code)	Scientific name	Common name (Italian)	Common name (English)
YRS	Sphyraena sphyraena	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