IS THERE A FUTURE FOR ARTISANAL FISHERIES IN THE WESTERN MEDITERRANEAN?

COPEMED

FAO FIAT PANIS

Cover illustration from an old photograph of artisanal fishermen in Malaga by Luis Bellon. Courtesy of the Instituto Español de Oceanografía (IEO) of Malaga.

COORDINACIÓN PESQUERA MEDITERRÁNEA (COPEMED)

IS THERE A FUTURE FOR ARTISANAL FISHERIES IN THE WESTERN MEDITERRANEAN?

by

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PREPARATION OF THIS DOCUMENT

In 1996, the Government of Spain requested the Food and Agriculture Organization of the United Nations (FAO) to implement a regional project aimed at promoting regional cooperation and co-ordination between fishery administrations of countries in the western and central Mediterranean, particularly in the fields of fishery science and fishery resources assessment. This project, formally entitled “Advice, Technical Support and Establishment of Cooperation Networks to Facilitate Co-ordination to Support Fisheries Management in the Western and Central Mediterranean”, is referred to less formally as COPEMED (**CO**ordinación **PE**squera **MED**iterránea); it became operational in 1996.

The main objective of COPEMED is to widen scientific knowledge and regional cooperation for the sustainable management of the Mediterranean fisheries. COPEMED was also designed to facilitate as far as possible the research on shared stocks, which is being promoted by the FAO's General Fisheries Commission for the Mediterranean (GFCM). One of the main COPEMED activities was the Artisanal Fisheries Programme which included many objectives and tasks and has obtained important results, both for the countries involved and for the GFCM itself.

This Artisanal Fisheries Programme was established at the first meeting of the Project's Steering Committee (Tangier, 1997), attended by scientific representatives and managers from the fishery administrations of each of the Project's participating countries, backed by experts from the Fisheries Department of FAO. Following this decision, a working group was created to: (i) elaborate clear and general criteria; (ii) compile all available data (from national fishery offices, research centres, and existing documentation, etc.); and, to complete it, (iii) carry out field studies in all the countries, port by port, beach by beach, using previously agreed reporting forms.

As a result of this wide-ranging and complicated exercise, and for the first time in the region, a preliminary version of an “Inventory of the Artisanal Fishery Communities in the Western and Central Mediterranean”, both in hard copy and on CD–ROM, was presented to the 25th session of the GFCM in 2000; it has been progressively updated with new information from the countries concerned, and the latest version, updated to 2005, has been published in the GFCM Studies and Reviews No. 77.

An important complement to all the hard work done so far would be to bring the corresponding information to the greatest possible number of members of the Mediterranean fisheries community. To this end it was decided that, in addition to the CD–ROM, it was desirable to undertake the publication of a book with an easily understood content and, above all, written in an easy-to-understand style as free as possible from specialist technicalities.

This book has, thus, been conceived to expose to a wide public the problems of the artisanal fisheries, the obstacles to their development, and some possible avenues for such development. Also, artisanal fisheries are dispersed widely along all the region's coasts, strongly obliging them to act in an uncoordinated manner, without effective associations to represent them and to make known their real problems as an important coastal community. This community should enjoy strong institutional support, since it is a socially important sector and, even economically speaking, could be profitable.

A copy of the CD-ROM and the document titled *Inventory of the Artisanal Fishery Communities in the Western and Central Mediterranean* and a copy of the CD-ROM titled *Encyclopedia of Living Marine Resources of the Mediterranean* can be requested directly to CopeMed project (www.faocopemed.org).

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PREFACE

Artisanal fishing, as any other human activity, is subject to continual change which, depending on the circumstances, may be positive or negative. Although artisanal fishing is a prevalent activity in many Mediterranean countries, it has, in the past half century, been relegated to a marginal role, from a socio-economic point of view, manifested as a steady erosion of a longstanding tradition. And this in a period in which the demand for high-quality, fresh fish and shellfish has grown enormously while the state of the fish stocks has, overall, become greatly weakened by overfishing, especially by the industrial fisheries, and by environmental degradation due to human activities on land and in the coastal zone.

However, consideration of the rehabilitation of the artisanal fishery sector in the Mediterranean has been lost in the wider discussion on the future status of fisheries in general in the region, so has not been given more attention than in the past. Artisanal fishing, apart from its peculiarities, is the weakest element when large-scale management issues are being discussed, and the interaction between such fishing and the many other types of activity in the same area – essentially the coastal zone – calls for special attention.

First of all, more knowledge is needed to assess the observed changes carefully, so as to direct artisanal fishing and fisheries towards a more modern management framework, respectful of the fish stocks and their environment, etc. This need has been stressed for a very long time, not only with respect to the North African coast but also the European side. There is general agreement that only effective management of these fisheries – and the resources they exploit – as well as other socio-economic components in the same area of influence, could ensure a more modern and effective management of the coastal zone.

The artisanal fisheries sector concerns many countries and encompasses many kinds of social groups, fishing gear and fishing methods. Its resources, shared by various countries, often move from one part of the region to another, and the size of the fish catch varies from country to country, as does the number of people dedicated to fishing and the economic value of the catch. In the Mediterranean, artisanal fisheries have never been seriously considered as a regional priority, although the United Nations Conference on Environment and Development (UNCED) had already addressed this issue, in 1992, under its Agenda 21: Programme of Action for Sustainable Development; chapter 17: the Protection of the Ocean and All Kinds of Seas, including Enclosed and Semi-enclosed Seas, and Coastal Areas and their Protection, Rational Use and Development of their Living Resources.

We and many others strongly believe that the future of the artisanal fisheries in the Mediterranean requires the formulation of new strategies for the rational management of the coastal zone and its resources, provided that they cover all the zone's stakeholder communities that interact directly or indirectly with artisanal fisheries and take into account the interactions, conflicting or otherwise, and synergies amongst these communities. However, at present, no innovative and courageous measures are in sight, nor are there regulatory and managerial tools to give effect to such measures to renew the artisanal fisheries of the region in the context of a drastic but necessary policy of conservation of the resources and their environment. With this in mind, the FAO–COPEMED Project decided to make an inventory of all the artisanal fishery communities in the western Mediterranean, aimed at assessing their actual state and at promoting a debate that could bring the artisanal fisheries to the fore in the context of national and regional development.

Today, after several years of difficult and hard work, in which many colleagues on both sides – north and south – of the region have collaborated in the publication of the regional inventory and the completion of two pilot studies – in the Cilento area (in Italy) and in the Nador Lagoon (in Morocco) – we have considered it useful also to prepare a book for as wide a readership as possible and broader than the interests of the specialists working in the field of fishery research in the Mediterranean. It will, we think, also be of use to those in possession of the published CD–ROM which contains precise information (not included in the present book), by country, port, fishery or fishing gear, among many other aspects.

Through this book we are trying to render comprehensible and popularize the world of artisanal fisheries to those who wish, for the first time, to know more about them. We also want to reach those social and cultural groupings that were not taken into consideration as being possibly interested when the CD–ROM (*Inventory of the Artisanal Fishery Communities in the Western and Central*

Mediterranean) was undertaken. We therefore wanted the readership to include not only the artisanal fisheries community in the strict sense (fishermen and their families, their cooperatives and associations plus the fishery administrators) but also the local, regional and national persons and entities which, through their professional activities – social services, teachers, doctors, sociologists, psychologists, historians, statistical services, etc. – are in contact with the fishermen, whether artisanal or not. The book is also aimed at all those – persons and organizations – that work in or take initiatives in the coastal zone (tourism, industry, coastal-zone managers and conservationists, NGOs, etc.) or whose responsibilities or activities in some way interact with artisanal fishing. And, obviously, the book is aimed at all non-artisanal fishermen, who often see the artisanal fishermen as poor brothers or even as close competitors. And if, after all, this book reaches schools, training centres and universities, it will have covered the whole spectrum of possible readers that have come to mind during the many discussions leading up to its drafting.

We have tried to make the book as readable as possible without sacrificing the necessary precision, and to make the book as easy to use as possible; in any case, no technical background is needed for reading it. We also think that books have a great advantage: they may be left anywhere or even lost without forfeiting the chance to be picked up and read by someone who might thus discover an interest in artisanal fishing.

In this way, the COPEMED Project has been able to contribute to a better understanding of this sector that is so frequently referred to but always, finally, forgotten. We believe that, inevitably, it must be taken into account if the sustainable management of Mediterranean fisheries is to be publicly recognized as an important objective in the region's overall socio-economic development. In this way, we hope that the work done on the artisanal fisheries will be found useful for achieving similar objectives in the eastern Mediterranean.

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CONTENTS

INTRODUCTION

This book concerns the artisanal fisheries in the western part of the Mediterranean bound approximately by the coasts of (in clockwise direction from the Strait of Gibraltar) Spain, France (and Monaco, as well as Corsica), Italy (as well as Sardinia and Sicily, but excluding the Adriatic), Malta, Tunisia, Algeria and Morocco). Since Libyan Arab Jamahiriya is a participant in COPEMED, it is also included.

We have understood artisanal fisheries, herein, as referring only to the marine kind, including, nevertheless, those conducted in coastal lagoons and river estuaries. And we have used the term "fisherman" to mean a person engaged in catching fish in the sea. The main reason this word is preferred to, say, "fishers" or "fisherfolk", now sometimes used to avoid a gender reference, is that "fisherman/men" is a traditional term, reflecting the fact that women are not usually involved in fishing itself, even today, in the Mediterranean, although they are often involved in the complementary shoreside manipulation of the catch. The word "fisher" is archaic and "fisherfolk" is a recent "social scientific" invention with, however, a slightly patronizing tone.

When you try to define an artisanal fisherman, it seems initially straightforward. Originally, it meant someone who made his own fishing gear and perhaps even built his own boat, and fished to feed his immediate family, possibly with some excess catch to sell or barter in his community. Although taking advantage of mechanical devices (oars in the boat being the primary example), artisanal fishing was originally unmotorized: wind and muscles were the source of power – to get to the fishing place, cast the net or line, haul it in, then return home. In more recent decades, and especially since World War II – from which the Mediterranean was not spared, by a long way – motorization in the form mainly of outboard motors was progressively adopted, though at different rates and/or at different periods, from country to country or even from place to place. In more recent decades some fairly simple motorization of net or line hauling has become more common. Otherwise, artisanal fisheries have always been characterized by the modest quantities of their catch per fisherman or per fishing boat. Their catch does not, as a rule, go to industrial fish-processing plants which usually require large and sustained quantities of fish to justify such processing.

Artisanal fisheries range from men standing on a pier with a handline catching a few fish a day, to a couple of men in a small boat with oars or, at best, an outboard motor, landing their catch on a pebble beach of difficult access from the landside, to a rather well mechanized boat several metres long, with a small crew, setting a net or a longline many hundreds of metres long, if not more, and landing their catch in a formal port – all of them for themselves and their families and for the local food trade (especially fish shops and restaurants). Some of these fisheries are pursued all year round or just for two or three months of the year – their "season".

The term "artisanal fishery" has no fixed meaning for all regions, times and places. Sometimes, terms such as traditional or subsistence fisheries are used here and there, but this does not clarify the desired definition. In view of the wide variety of gears, ports and target species, it is feasible, and even desirable, to define many artisanal fisheries in the region of interest. Also, many artisanal fisheries are, practically speaking, "personal" fisheries. Although three types of gear (gillnets, trammel nets and longlines) constitute 80% of the artisanal gears used, this does not imply that 80% of all artisanal fishermen use one or other of these three types; a large proportion use handlines, pots, dredges and other "personal" devices to catch small quantities of fish or shellfish.

This complexity notwithstanding, COPEMED felt it important and necessary to define what an artisanal fishery is. In practice, it was only able, like its predecessors, to define what an artisanal fishery is not: that is, neither semi-industrial nor industrial. So, for practical purposes, artisanal fisheries exclude fisheries using: large trawlnets (bottom and midwater trawls, whether towed by one fishing vessel or two); large seines for small-pelagic species (mostly sardines and anchovies), other than those using lampara nets; gear (purse seines, longlines, drift nets, stationary uncovered pound nets, often known as madragues, tuna-fishing rods, troll lines) targeting large-pelagic species (especially tunas and related species), hydraulic mollusc dredges, and very long gillnets and surface longlines.

In spite of adopting this "exclusive" definition (what artisanal fisheries are not), COPEMED noted that three criteria are always implicit in the term "artisanal fishery": boat length; tonnage and fishing

gear; and target species. COPEMED also summarized the technical and socio-economic features of these fisheries:

Boats and fishing gear

- Low boat tonnage (≤10 gross registered tons)
- Low power (<100HP)
- With or without outboard motor
- Limited autonomy (<24 h)
- Minimal or non-existent safety equipment
- Use of various types of fishery gear determined by:
  - the presence of target species, in space and time
  - the nature of the sea bed
  - the existence of specific regulations
  - high level of knowledge of target species and their behaviour
  - accessibility of "noble" (i.e. high-demand/high-value) species
  - socio-economic status of the artisanal fishermen

Socio-economic factors

- Boat is owned by the fisherman or his family
- The fishermen have other professional activities
- Crews are small (1–5 fishermen)
- Weak hierarchy in the work at sea
- High level of employment relative to investment
- Direct sale of most of the catch to fish shops, restaurants or the general public
- Individual catches of low tonnage but high value

We should also briefly mention here that the important lampara fishery for small-pelagic species is practised sometimes from large vessels (notably in Italy and Spain), sometimes using accessory boats, but also often by artisanal fishermen, sometimes only one man to a boat. Since it is, at present, not feasible to distinguish these two levels in the landings, all lampara fisheries are tentatively classified as artisanal, in spite of the difficulty this causes, especially in Spain, where the vessels fish lampara nets in the Mediterranean for half the year, and other gears, elsewhere, for the other half.

Although Mediterranean artisanal fisheries are not fundamentally different from such fisheries elsewhere, they have acquired some distinctive characteristics. The artisanal fishing boats are very diverse but are grouped around small fishing communities based on small ports or beaches. These fisheries target a wide variety of species, so they use various types of fishing gear at different times of the year, depending on the local availability of the target species; this availability in turn tends to reflect the differences in life-histories amongst the key species – spawning migrations and seasons, feeding migrations etc. The involvement of families in the artisanal fisheries – from the making and repair of the gear to the handling and sale of the catches – is also typical and traditional. Some artisanal fisheries are also pursued in coastal lagoons, sometimes illegally.

It is often convenient to consider artisanal fisheries in terms of a "métier" (French for, among other things, trade, profession, business, craft). In the present context it is basically a method of fishing defined by the target species, the fishing gear/method itself, the base port or landing place of the catch, and the season of operation. Even so, there is a certain arbitrariness with respect to, for example, fishing boat size and variety of fishing gear. In Spain alone, there are about 135 métiers, around 50 varieties of trammel net and over 35 varieties of longline; and even more if the small dimensional differences are considered. These varieties represent adaptations to local circumstances:

- ecological (e.g. water depth, nature of the sea bed);
- biological (e.g. the target species, its behaviour and its availability to the fishermen at any given time);

- economic (e.g. the possibilities of the fishermen to acquire and maintain specific qualities and quantities of gear, up-to-date boats and boat equipment).

The foregoing information also brings out another important underlying fact: that the industrial and semi-industrial fisheries are much less constrained by (hence less adapted to) specific local circumstances.

But the question remains: Why, in a generally well developed region like the Mediterranean, are artisanal fisheries still so important, in spite of their modest level of technological development? The answer may be, in no particular order, that:

- ecologically, there is a high diversity of fish species in the Mediterranean coastal zone;
- technically, artisanal fishing gear is usually species-selective and size-selective, unlike industrial trawl fishing;
- economically, artisanal fisheries contribute to the local food supply and to the income of a part of the local population;
- socially, artisanal fisheries contribute to the social fabric of the coastal population, in particular, and to the national life, in general;
- culturally, they contribute to the local and national tradition and cohesion through the promulgation of cultural diversity and community heritage.

There are also several reasons for their historical existence, lying in the geological, ecological and cultural history of the region, which we discuss further here below.

Although we are concerned here mainly with the western Mediterranean, these various factors apply generally to the whole basin. Moreover, in spite of a definite geological division into eastern and western basins, there are strong oceanographic and biological connexions between the two.

The physical context

The geological and ecological history of the Mediterranean Sea (see p. 4) goes a long way in explaining the Mediterranean marine environment and its resources. It comprises two main basins connected principally by the Strait of Sicily. The western basin, covering an area (at the sea surface) of some 0.85 million km^2, has a secondary basin: the Tyrrhenian Sea.

Figure 1-1
Map of the Mediterranean showing the main geographical features – mountain ranges, major rivers, major cities
(The basic bathymetrical features are shown in Fig. 1-2, below)

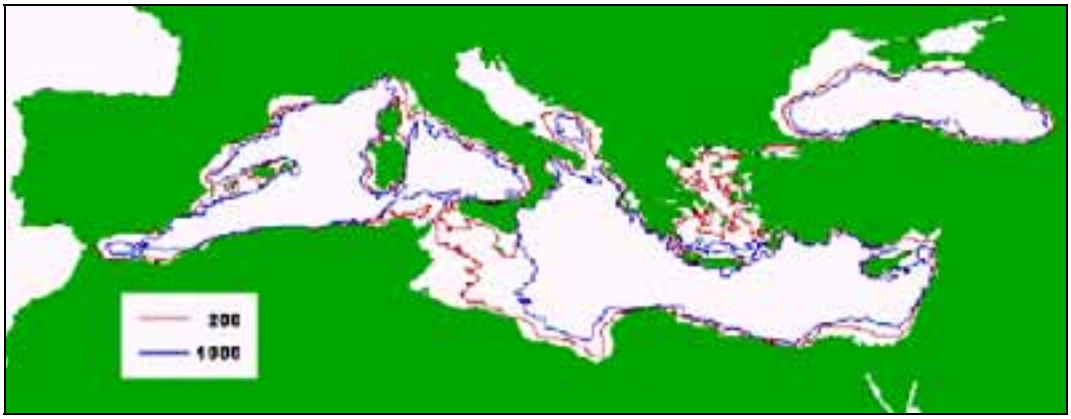


Figure 1-2
Map showing the 200- and 1 000-m isobaths. *(From Oliver, 2002)*

The Mediterranean is almost an enclosed sea, but it is connected to the Atlantic Ocean by the Strait of Gibraltar, which has a sill 15 km wide and a maximum depth of 350 m, and to the Sea of Marmara (and thus the Black Sea) by the Dardanelles Strait, which has a width between 1.3 km and 7 km and an average depth of 55 m. Since the late-nineteenth century, it has also been connected to the Red Sea by the Suez Canal (120 m wide and 12 m deep).

The Mediterranean Sea is essentially a relic of the once great Tethys Sea that largely separated the northern tectonic or crustal plate (European continent) from the southern plate (African continent), some 200 million years ago. The Tethys Sea linked what is now the North Atlantic Ocean with what is now the Indian Ocean. The eastward, then northward, movement of the African plate gradually enclosed a part of

the Tethys Sea. The Mediterranean Sea, however, was not established until the passage to the Indian Ocean was closed off, some 16 million years ago, then the passage to the Atlantic Ocean, with the closure of the Betis Channel (along the south coast of Iberian Peninsula), between 7 and 6.6 million years ago, and the closure of the el-Rif pass (off the North African coast) some 6.3 million years ago. But, even so, the newly formed enclosed sea had to undergo the so-called Messinian crisis, some 5.6 million years ago, which opened the Strait of Gibraltar, before the Mediterranean Sea proper could come into being much as we know it today.

These plate tectonics, together with climate changes, have played a major role in determining the biodiversity of the Mediterranean. (See the next chapter on The species, their habitats and the fisheries).

The main physical results of the clash between the African plate and the Eurasian plate (the subduction of the African plate under the European one) are:

1. the creation of a virtually enclosed sea;
2. the elevation of mountain ranges all along the northern side – the Sierra Nevada (Spain); the Pyrenees (Spain–France); the Alps (France–Switzerland–Austria–Italy–Slovenia); the Apennines (Italy); the Dinaric Alps (Croatia/Bosnia and Herzgovina); the Taurus (Turkey) – and, on the southern side, the Atlas mountains in north-western Africa;
3. the area of land (~3.5 million km²) that drains into the Mediterranean Sea forms a relatively small part of the total drainage basin area (~6 million km² – land plus sea surface), thus constituting a relatively narrow rim around the Mediterranean Sea itself;
4. the comparatively narrow continental shelf (Fig. 1-2; in the western Mediterranean, the Balearic Islands plateau and the Gulf of Gabès are notable but limited exceptions);
5. the creation of marine basins of considerable maximum depth (>4 000 m);
6. the high level of volcanic and seismic activity;
7. the much damped tidal regime;
8. the specific wind regime.

The consequences of these eight features may be quickly indicated.

Being a semi-enclosed sea (1) means a slow replacement of the sea water from the Atlantic and, to a much lesser extent, from the Black Sea, hence the means for the Mediterranean region to leave a very strong "imprint" on its sea water (very high salinity, for example, due to high evaporation), which can be traced at depth (between about 500 and 1 000 m depth) throughout the central Atlantic Ocean after having exited over the Gibraltar sill below the incoming Atlantic surface water. The Mediterranean would have a quite different marine regime if, for example, the Atlantic Ocean water entered at the bottom of the Strait of Gibraltar.

The mountain ranges (2) have important effects on the weather, especially the rainfall and wind regimes (see here below). It should also be noted that, between Tunisia and the Near East, there is a vast mountainless desert, which is also of considerable relevance to the present-day marine and coastal environment.

The small land drainage-basin area (excluding the Nile valley upstream of the Aswan dam) relative to the total basin area (3) is due to the fact that the coastal mountains slope steeply into the sea, creating: a very narrow littoral zone (enhanced also by factor 7); a narrow continental shelf (4) which leads to a low volume of shelf sea water, hence a limited amount of marine resources, living and non-living, within easy reach of the human populations on land; a generally limited natural freshwater supply; and, until relatively recently, a certain isolation of coastal populations around ports and landing places themselves isolated by the same mountains. This isolation has disappeared, superficially at least, as a result of modern transport and communication systems, but remains ingrained in the culture of coastal populations which have traditionally shown considerable independence, hence resistance to co-ordination on a regional basis, but also a disposition to regional trade.

Having deep basins (5) is essentially an obstacle to nature in the renewal of the sea water in these basin depths, and to the human population in the exploitation of the deep-sea resources, as well as being an encouragement to the use of such basins as a place to dump, in one way or another, human waste (especially litter and garbage).

High volcanic and seismic activities (6) speak for themselves, representing, especially in the eastern Mediterranean, an ever present risk to the human population and to the natural resources of the region.

The damped tidal regime (7) generally favours coastal stability, but reduces coastal faunal and floral diversity; it favours maritime trade and fishery, but slows the degradation and spread of floating or suspended marine pollutants such as oil.

The specific wind regime (8), comprising strong but local winds, tends to act against maritime trade and fishing. This regime is due mainly to the fact that the northern mountain ranges present significant barriers to air movement which is channelled by the mountains, leading to strong local wind systems; of these, the most notable are: the *tramontane* or *cers*, channelling air south-eastwards across the Languedoc region in south-western France north of the Pyrenees; the *mistral*, channelling air southwards down the Rhone valley; the *bora*, likewise, at the head of the Adriatic Sea; and the *meltemi* wind at the head of the Aegean Sea. These are essentially venting systems imposed by the local topography but related to the major high/low pressure fields competing over the European continent; these strong winds are of comparatively short duration, as well as being seasonal, mainly spring and summer. They impede all types of fishing.

On the other hand, the *scirocco* or the *khamsin* wind blows more persistently and northwards from the African or Arabian subcontinents bringing hot desert air (subsequently humidified while traversing the Mediterranean) and desert dust to the northern side of the region.

The same mountains play a major role in the rainfall patterns of the Mediterranean Sea, the northern side being subject to seasonally heavy rains in spring and autumn, the southern side, to annual rainfall of <200 mm in certain regions, mainly in the winter. The mountains also ensure a rapid and sometimes disastrous run-off leading from time to time to heavy flooding in the main river plains and deltas, notably those of the Rhone and Po.

Only five river basins in the region exceed an area of 50×10^6 km^2. Nevertheless, nearly 60% of the land area of the Mediterranean basin is occupied by river valleys of less than 10^4 km^2 individual area. The broken geomorphology of the Mediterranean basin, especially in its northern, south-western and eastern parts, ensures relatively rapid riverine run-off.

The climate change now considered to be in progress is due principally to the "greenhouse" effect which is raising the Earth's mean temperature; this can be expected to have a significant impact on, *inter alia*, the marine environment and the adjacent coastal zone in the coming decades, most likely leading to changes in: wind systems; air–sea interaction (evaporation, precipitation, the exchange of gases – notably carbon dioxide and oxygen – and of salt); mean sea level; and marine currents.

A detailed study of the period 1992–2001 has shown that there has been a strong warming trend in the Alboran Sea on the continental shelf off Málaga. The rate of increase is about 0.01°C per year, which is greater than that observed in the deep water of the Mediterranean. Whether this trend is attributable to climate change or rather to changes in circulation is not clear, however. Nevertheless, the number of species of "Mauritanian" origin has been increasing as well. The abundance of the gilt sardine, *Sardinella aurita*, has also increased in the last decade, mainly in the Levantine and Spanish Tramontana regions.

We consider briefly the probable role of climate change in the future of artisanal fisheries in the western Mediterranean in the chapter on this future.

The ecological context

Given the technical and economic difficulties of fishing the continental slope, the bulk of the readily available living marine resources are found and exploited on the continental shelf (depth less than about 200 m) or in the upper 100 m of the open sea. Some trawling is done on the continental slope, but catches are rarely taken below 300–400 m depth, although modern trawlers can now fish down to about 800 m depth.

The species living on or close to the sea bed are referred to as *benthic*. Those that swim above the sea bed over the continental shelf are referred to as *neritic*, and those that swim in the body of the sea, not normally near the sea bed, are referred to as *pelagic*. In practice, pelagic species are only fishable if they form schools (examples: sardine, anchovy) or are individually large enough to justify the fishing effort

required to capture them (examples: tuna, sharks). A general fishery term, *demersal*, is used for species caught just above the sea bed.

Because of its high temperature and high salinity, especially in the eastern basin, its rapid freshwater run-off (which does not allow the water to build up a high mineral content), and its deep basins with their relatively slow replenishment times, the Mediterranean has always been considered *oligotrophic*; that is, not allowing a generally high primary production (by the microscopic green algae that mainly constitute the phytoplankton), hence not a generally high food supply for the other marine organisms. Thus it imposes on its marine organisms a relatively severe set of living conditions, biologically and physically, except in sheltered bays.

Under difficult ecological conditions, there is a tendency for only a comparatively few species to survive, whereas, under easy ecological conditions (known as *eutrophic*) a comparatively large number of species can survive.

Where does the Mediterranean stand in this respect? In its bulk – open sea, deep basins – it is oligotrophic. Inshore, close to the land, it is more nearly eutrophic. The discharge of excess fertilizers and animal wastes from coastal agriculture and, nowadays, intensive horticulture, which has been a feature of the Mediterranean environment in recent decades, has promoted this coastal eutrophication, occasionally to excess, so that the frequency of harmful algal blooms has also considerably increased inshore, often to the detriment of marine fishery resources, whether artisanal or industrial. Thus, the dilemma of the River Po, for example, is essentially whether it is socio-economically more beneficial to the overall economy and the regional environment to raise animals for food in the Po valley (and almost inevitably to dump much of the waste into the Po River system) than to harvest shrimp and other sea food off the Po delta (otherwise adversely affected by the poor ecological conditions caused by the Po discharge), or vice-versa. Similar arguments can be put forward for the other major (and indeed many minor) river basins and for other activities (e.g. siting of power plants and other industries on river banks or in the coastal zone; and, notably for the Nile, the effect of the establishment, at Aswan, of a major hydroelectric dam on the sediment discharge to the coastal area – with a good deal of agricultural wastes as well).

Upwelling is a relevant feature of the western Mediterranean; it has two causes: the more important is due to the wind stress on coastal water, mainly along the south-facing coasts in the northern part, which forces surface water offshore and subsurface water to well up into the surface layer to replace the surface water driven offshore. The other is less drastic and steadier, arising from the basically cyclonic (anti-clockwise) circulation of the low-density Atlantic Ocean surface water. The water near the centre of the gyre – a "spinning wheel" of water – created by this circulation is, initially, higher (relative to the mean sea height) at the centre than at the edges, producing a centrifugal flow (from the centre outwards), which induces replacement by the upwelling of deeper water at the centre. At the edge of the main gyre, the "opposition" of the coast induces numerous secondary, anticyclonic (clockwise) gyres in which the opposite occurs, the average flow being centripetal circulation (towards the centre of each small coastal gyre and tending to produce upwelling inshore). Since upwelled water brings nutrient-rich water into the well lit surface-water layer, primary production is enhanced and eventually is a benefit to the artisanal fisheries.

We shall also look briefly at the possible role of biodiversity changes in the future development of the artisanal fisheries of the region. This biodiversity, as a measure of the variety of genes, species and species assemblages (ecosystems), is of value because we cannot be sure of the impact of removal of any component (e.g. variety, species or group of species) from a given ecosystem, owing to our weak understanding of how ecosystems function. It is therefore, in principle, important to preserve a high biodiversity, so as to confer upon an ecosystem the greatest possibility for resistance or adaptation to environmental change.

Most of these physical and biological factors affect the marine living resources and therefore the fisheries on them; whether the effects are positive or negative depends somewhat upon your point of view, but, in any case, that is the only Mediterranean we have, and whether it can be improved or not also depends on your point of view.

The cultural context

The species that evolved in the Mediterranean, or invaded it whenever geological opportunities to do so arose, have not marked and moulded the Mediterranean basin so much as human populations have.

Many of the world's major civilizations have been established or have flourished there: Egyptian, Minoan, Greek (Mycenaean, Hellenic), Etruscan, Phoenician, Roman, Arab, Ottoman, for example. And likewise, major religions (in historical order of appearance): Judaism, Christianity, Islam.

These various civilizations, many based on empire, have considerably modified the pristine environment by the same means, practically speaking, as those used today: the growth of cities and ports, agriculture, water exploitation, industry and recreation, if not tourism as well. They have also bequeathed us a major architectural wealth, now part of the World Heritage established under the auspices of UNESCO, and a history whose influence is still with us and will perhaps remain with us for many centuries to come.

Thus, culturally, there is a longstanding tradition, involving whole families, specific social or ethnic groups and communities, centred on areas, such as protected bays, environmentally favourable to artisanal fisheries and allowing the possibility to fish many different species, often with different gears, in different seasons. Artisanal fisheries meet a fundamental and immediate need – the need for food – but, as noted above, the artisanal fishing communities, through their particular way of life, contribute to the local and national cultural diversity and community heritage. There is no doubt, however, that the socio-cultural diversity, of which the artisanal fishery communities are an important part, is being reduced steadily as other forms of economic activity (notably tourism and coastal-zone urbanization) become opened up and the mass media promote "uniformization" of the population.

Two other considerations

(a) A cautionary word should be said about the concept of season, because this can be determined by several factors that do not all apply everywhere at all times. For this reason we have not emphasized this aspect, although, locally, it is quite important. These factors are:

- the availability of the target species to the fishermen (as a result of, for example, onshore–offshore migration or vertical migration of the fish, size of fish, which is particularly important with respect to gillnet mesh size, and to hook size in longlines and hand lines)
- the demand for the species, hence the market price, which is particularly influenced not only by the physical condition of a species – notably with respect to spawning or feeding periods – but also by the affluence of piscivorous tourists in summer
- the availability of alternative forms of seasonal employment that may be more economically rewarding
- fishery management/conservation measures in force (e.g. obligatory closed seasons or fishing areas)

(b) This book is not a suitable place to consider in any detail the legislative context, which is very complex and variable not only from country to country, but also from one government level to another. However, artisanal fisheries cannot expect to operate and develop outside it (even small-scale mining, where the problems are often analogous, is being progressively brought within the corresponding legislative framework), so we shall try to give a broad outline, at least on the regional level, in the section on the future of artisanal fisheries.

About this book

Its purpose is to describe as briefly but as clearly as possible the artisanal fisheries of the western Mediterranean for an informed though not specifically expert readership, based on the enquiries made as part of the FAO Project, financed by Spain, on "Advice, Technical Support and Establishment of Cooperation Networks to Facilitate Coordination to Support Fisheries Management in the Western and Central Mediterranean", known more easily, and herebelow, as COPEMED (**CO**ordinación **PE**squera **MED**iterránea), and as a part of this project's contribution to the knowledge and understanding of the region's fisheries.

In describing the artisanal fisheries, we decided to start with the original reason for them: the species. From the need to capture them for food came the development of fishing gear and methods,

then the necessary onshore infrastructure, however modest, to service the fishermen. Primary interest lies with the target species – those that each type of fishery is seeking preferentially to capture. Obviously, some other species get caught at the same time; they are known as accessory species, and some of these may be target species in other types of artisanal fishery in the same vicinity. There are about 175 target and closely associated accessory species; we give most attention to the target species, without ignoring the accessory species.

One great difficulty that we have had to face is that of fish names. As far as our information allows us, we have used the local names of the key species pursued and captured by the region's artisanal fisheries. Local names in Arabic have, however, been transliterated into English or French, depending on the most familiar foreign language used in each country: French in Algeria, Morocco and Tunisia; English in Libyan Arab Jamahiriya, or both these foreign languages, if appropriate; it should also be noted that many names used in the Arabic-speaking countries have been simply adapted from the relevant European language. Names in Maltese or Italian are retained as are. However, the common names may vary from region to region even within one country and even in the same language, and one common name may be used for more than one type or species of fish. Also, a common name may apply to several species within a family, usually being qualified by an adjective (e.g. *common*, *red*, *striped*) depending on the species. In spite of our wish to limit the use of technical jargon, as far as possible, we decided also to give the biological (taxonomic) names (in Latin or latinized words), since this provides some assurance that a fish can be correctly ascribed to a given species (and that the related fishery data and statistics can be protected from confounding). Our main authority in this matter is the *Species Identification Sheets for Fishery Purposes* published by FAO (Rome, Italy); FAO has adopted specific (and widely used) common names in English, French and Spanish for each species. Other authoritative sources we have relied on are the national fishery experts and the UNESCO publication *Fishes of the North-eastern Atlantic and the Mediterranean* (in three volumes) which is largely compatible with the FAO Sheets. The *Società Italiana di Biologia Marina* recommended the Italian common names of the principal species.

To describe all the varieties of fishing gear and methods used by the artisanal fisheries of the western Mediterranean goes beyond the scope and intention of the present book. Such details may be found on the FAO and COPEMED Web sites: www.fao.org and www.faocopemed.org, respectively; and CDs containing the relevant data bases may be obtained from FAO, 00153 Rome, Italy. Here we content ourselves with a brief description of all the main types of fishing gear, stressing those used particularly in artisanal fisheries.

While it is not possible here to go into the detail of the history of artisanal fisheries in the western and central Mediterranean, this past is discussed in general terms in the chapter "Is there a future for artisanal fisheries in the western Mediterranean?".

Since, at the same time and in the same chapter, we discuss in some detail the present technical, ecological and socio-economic circumstances in which the artisanal fisheries are operating, we give the reader some idea of the situation of artisanal fisheries in the western Mediterranean today and of the problems they are facing and may face in the future. This future will certainly require, or be determined by, important changes – culturally, technically and economically – if survival is to be ensured, and even more so, if successful artisanal fisheries are to be sustained in the Mediterranean basin, western and eastern.

THE SPECIES, THEIR HABITAT AND THE FISHERIES

Introduction

We should first provide some background to the biodiversity of the Mediterranean with particular regard to fishes. This biodiversity was, like so many other aspects of this region, strongly shaped by the geological and climatic history of the basin. This history has resulted in a very complex Mediterranean biota, with species of diverse origin and survival paths.

As we mentioned earlier, the Mediterranean originated from the Tethys Sea which, during the Tertiary Period (65–2 million years before the present), enabled communication among the "pre-Atlantic Ocean", the Tethys Sea and the "pre-Indian Ocean", which allowed subtropical species to mix with temperate species, thus constituting the *palaeo-mediterranean component*. During the Pliocene Epoch (at the end of the Tertiary, 5.1–2 million years before the present), communication with the Indio-Pacific region closed, thus allowing some of the *palaeo-mediterranean* species to evolve as the *endemic component*. As the Mediterranean became more temperate, species that made up the *Atlantic–Mediterranean component* could become established in the "pre-Mediterranean", and they have survived largely until today. Towards the end of the Pliocene and during the Calabrienses glacial period, boreal species settled in the Mediterranean, constituting the *septentrional component*. Successive invasions and extinctions of boreal species took place during the successive interglacial periods and ice ages, respectively, and this facilitated the introduction of species of West African origin, the *Senegalese* component.

These five different components, as just defined, constitute the fauna that now occupies the Mediterranean basin. The *Atlantic–Mediterranean* and the *endemic components* are, however, predominant.

Although the Strait of Gibraltar is a natural barrier (its maximum sill depth is about 350 m), some Atlantic species are brought in with the Atlantic Ocean surface current over the Gibraltar sill. Atlantic deep-water species can also enter the Mediterranean by means of their nocturnal vertical migrations in the water column, which many bathypelagic species undertake. However, not every species has the capacity to adapt to the Mediterranean marine environment; among other reasons, many species become introduced while still in their larval phase and cannot complete their development in this new environment.

The so-called Mediterranean endemic species had different origins**:** some remained after the "destruction" of the Tethys Sea by the plate tectonics; others are survivors in the Mediterranean after having been extinguished in other parts of their distribution by adverse climatic changes; and some arose in the Mediterranean during its isolation (for 5–6 million years) at the end of the Pliocene Epoch and the beginning of the Quaternary Period. It seems likely that the pteropod mollusc (sea butterfly), *Cavolina gibbosa gibbosa*, which is confined to the eastern Mediterranean, and the sea grass, *Posidonia oceanica*, are representatives of the original Tethys fauna. A few fishes also form part of the endemic component: the blotched picarel, *Spicara maena*, the picarels, *S. smaris* and *S. flexuosa* (or *Smaris chryselis*), the Maltese brown ray, *Raja melitensis*, and the speckled ray, *R. polystigma*.

One of the examples of a Lessepsian species (Indo-Pacific species entering the Mediterranean via the Suez Canal) is the sea grass *Halophila stipulacea*, which is distributed throughout the Greek islands. Others are the bivalve molluscs: the rayed pearl oyster, *Pinctada radiata*; the straight hammer oyster, *Malleus regular*; and the Red Sea mussel *Brachidontes pharaonis* (this is the most recent nomenclature, replacing *Brachydontes variabilis*); all are widely distributed throughout the eastern Mediterranean.

Some species of boreal origin have persisted since the Pleistocene Epoch (first 2 million years of the Quaternary Period), having resisted the interglacial warming in the Mediterranean, and are found in areas such as the northern Adriatic Sea. Examples are: the chaetognath, *Sagitta setosa*; the copepod crustacea, *Pareuchaeta norvegica* and *Pseudocalanus elongatus*; the periwinkle, *Littorina saxatilis*, in the upper Adriatic and in the Gulf of Gabès; and the brown seaweed, *Fucus spiralis*, which is limited to the Adriatic Sea.

Regarding the comparatively recent introduction of species into the Mediterranean by human beings, the first are attributable to the pharaonic era, when canals were first dug to link the Red and the Mediterranean Seas, but it is impossible to specify particular species. The Portuguese oyster, *Crassostrea angulata*, could correspond to the introduction of the Japanese oyster, *Crassostrea gigas*, from the Far East in the sixteenth century, since the genetic difference between them is very small. A similar case could be made for the coral *Oculina patagonica* which was introduced into Spain from the Atlantic coast of South America also in the sixteenth century.

The opening of the Suez Canal in 1869 led to the introduction of between 200 and 300 species, including the largest contingent of macrophytes (plant-like seaweeds, such as wrack) ever introduced into the Mediterranean Sea.

Returning to the artisanal fisheries, there are at least 175 target and closely associated accessory species in the western and central Mediterranean. For each of the seventy species considered most important from the fishery standpoint – commercially important and fished in most, if not all, the countries of the western Mediterranean – we give:

- its scientific name;
- its common names in English (E), French (F), Spanish (S), in accordance with the FAO Species Identification Sheets for Fishery Purposes, and, if available, Arabic (A, discriminated, if necessary, by [A/A] Algerian, [A/L] Libyan, [A/M] Moroccan, [A/T] Tunisian), Italian (I) and Maltese (M), for species recognized in national fishery statistics for these countries' respective artisanal fisheries; the Italian common names were recommended by the Società Italiana di Biologia Marina;
- its distribution in the marine environment and in the Mediterranean as a whole;
- its individual sizes (in centimetres) usually found in the sea (the largest sizes being very rare in the catches);
- the types of fishery exploiting it in the Mediterranean (including the semi-industrial and industrial fisheries, since the artisanal fisheries do not operate in a vacuum);
- the types of gear that may be used (not only in the artisanal fishery);
- the usual products or uses of the landed species;
- the countries of the western Mediterranean in which they are artisanal fishery target species.[1]

For the remainder, we just provide a list, with scientific and common names only, for the species that may be considered "moderately important" (widely caught but not of high commercial importance) and "not important" (sometimes taken in the artisanal fisheries); the choice is based, however, mainly on the publication "Clasificación científica e indentificación de nombres vernáculos existentes en la base de datos de seguimiento informático de recursos naturales oceánicos" (Scientific classification and identification of common names in the data base on computerized monitoring of living ocean resources) by J. Crespo, J. Gajate and R. Ponce, Instituto Español de Oceanografía, 2001 (ISBN: 84-931926-0-0).

Since the family is the principal grouping for fish of a similar type in FAO statistics, it may be useful to recall that animals, such as fish, and other "kingdoms" of living creatures, are grouped, more or less conveniently, into the following categories in descending order of precision: phylum (e.g. Pisces, for fishes), class (e.g. Osteichthyes, for bony fishes), order (e.g. Scombroidei, for tuna-like fishes), family (e.g. Scombridae, for tunas and bonitos), genus (e.g. *Thunnus*, always in italics, for tuna), species (e.g. *Thunnus thynnus*, always in italics, for bluefin tuna) and subspecies (e.g. *Thunnus thynnus thynnus*, always in italics, for northern bluefin tuna).

We should also stress the fact that, at the species and subspecies levels, the specialists – ichthyologists and taxonomists – still argue about some cases, so that the current species names may have provisional scientific names, although this is not the case with the target species we are

[1] In some cases, the species are closely related and often physically similar fishes are reported only as, for example, Mullus spp. Or by family, as, for example, Mullidae, Scorpaenidae, Sparidae. The “failure” to mention a country for a particular species does not therefore necessary mean that the species is not fished at all in the country

concerned with (except possibly *Auxis rochei* [=*Auxis thazard*?] bullet tuna [=frigate mackerel], and this is more problematic elsewhere than in the Mediterranean).

We have not specified the particular ports or landing places at which each target species may be landed. In some cases these are formal ports with modern installations, and the artisanal fishermen may even provisionally deposit their fish in cold-storage facilities. In other cases, the landing place is simply a beach (possibly of difficult access from the land side) or a pier. There are several hundred such landing places in the western Mediterranean.

The Table in Annex I is intended to enable the reader to identify fishes of interest by their common names in any of the languages retained, and to relate it easily to the corresponding scientific name, notably for the "important species", in the present chapter.

Important species

Fishes

Scientific name: ***Anguilla anguilla***

Common names: **E**: European eel: **F**: anguille d'Europe; **S**: anguila europea; **A(A)**: anguille; **A(L)**: anguilla; **A(T)**: hanncha; **M**: sallura; **I**: anguilla

Distribution in sea: coastal and migratory; all coastal waters and rivers (catadromous)

Distribution in region: whole of Mediterranean; Black Sea

Common size (cm): 30–40 (male) 20–80 (fem.)

Type of fishery: semi-industrial, artisanal, sport

Type of gear: hoop nets, traps, barriers, trawls, gillnets, bottom longlines, handlines

Product/use: fresh, frozen, salt-dried, smoked, marinated, tinned

Countries: Morocco, Spain

by Zienert, S.

Scientific name: ***Auxis rochei***

Common names: **E**: bullet tuna (frigate mackerel); **F**: bonitou; **S**: melva; **A (A)**: melva; **A(L)**: matseti; **A(T)**: melva; **M**: tumbrell; **I**: biso

Distribution in sea: epipelagic, oceanic and neritic

Distribution in region: whole of Mediterranean; Sea of Marmara

Common size (cm): 20–40

Type of fishery: semi-industrial (Sicily), artisanal, sport

Type of gear: beach and purse seines, lampara nets, bottom and pelagic gillnets, handlines, drifting longlines, barriers, trolls

Product/use: fresh, tinned, salted (Greece)

Countries: Algeria, Malta, Morocco, Spain

by Randall, J.E

Common names: **E**: English; **F**: French; **S**: Spanish; **A(A)**: Arabic (Algeria); **A(L)**: Arabic (Libyan Arab Jamahiriya); **A(M)**: Arabic (Morocco); **A(T)**: Arabic (Tunisia); **M**: Maltese; **I**: Italian

Scientific name: ***Conger conger***

Common names: **E**: European conger; **F**: congre d'Europe; **S**: congrio común; **A(A)**: conger; **A(L)**: grango; **A(T)**: gringo; **M**: gringu; **I**: gronco

Distribution in sea: continental shelf, demersal

Distribution in region: whole of Mediterranean (except Baleares, Malta); SW Black Sea

Common size (cm): 60–150

Type of fishery: semi-industrial (Spain), artisanal, sport

Type of gear: beach seines, bottom trawls, gillnets and longlines, traps, handlines

Product/use: fresh

Countries: Algeria, France, Morocco, Spain, Tunisia

by Cambraia Duarte, P.M.N.

Scientific name: ***Coryphaena hippurus***

Common names: **E**: common dolphinfish; **F**: coryphène; **S**: lampuga; **A(A)**: coryphene; **A(L)**: lambuka; **A(T)**: lambouka; **M**: lampuka; **I**: lampuga, sgombro dorato

Distribution in sea: pelagic, offshore and coastal

Distribution in region: whole Mediterranean (except Adriatic)

Common size (cm): 50–100

Type of fishery: artisanal, sport

Type of gear: surrounding net without purse line; troll, handline

Product/use: fresh, dried

Countries: Libyan Arab Jamahiriya, Malta, Spain

by Cenaim

Scientific name: ***Dicentrarchus labrax***

Common names: **E**: European seabass; **F**: bar européen; **S**: lubina; **A(A)**: bar européen; **A(L)**: garous; **A(T)**: karouss; **M**: spnotta; **I**: spigola, branzino

Distribution in sea: continental shelf, coastal and brackish water

Distribution in region: whole of Mediterranean; Black Sea

Common size (cm): 20–55

Type of fishery: artisanal, sport

Type of gear: beach and purse seines, bottom and midwater trawls, bottom gillnets and longlines, drifting longlines, handlines, trolls

Product/use: fresh

Countries: France, Morocco, Spain, Tunisia

by Ticina, V.

Scientific name: ***Diplodus sargus sargus***

Common names: **E**: white seabream; **F**: sar commun; **S**: sargo; **A(A)**: sar; **A(L)**: garagous; **M**: sargi; **I**: sarago maggiore

Distribution in sea: coastal, demersal

Distribution in region: whole of Mediterranean (except Baleares); Sea of Marmara; Black Sea

Common size (cm): 15–30

Type of fishery: semi-industrial fisheries (Sicily, Morocco), artisanal, sport

Type of gear: beach seines; bottom trawls, gillnets and longlines; pelagic longlines; traps; handlines

Countries: Spain, Tunisia

by Patzner, R.

Scientific name: ***Engraulis encrasicolus***

Common names: **E**: European anchovy; **F**: anchois commun; **S**: boquerón; **A(A)**: anchouwa; **A(L)**: anshoga; **A(M)**: chtoun; **A(T)**: anchouwa; **M**: incova; **I**: acciuga, alice

Distribution in sea: coastal (euryhaline), pelagic

Distribution in region: whole of Mediterranean Sea; Black Sea

Common size (cm): 7–15

Type of fishery: industrial, semi-industrial, artisanal

Type of gear: beach and purse seines; trawls; lampara nets; barriers; traps

Product/use: fresh, frozen, salted, salt-dried, smoked, marinated, tinned; fishmeal; bait

Countries: Algeria, Malta, Spain, Tunisia

by Dammous, S.

Scientific name: ***Epinephelus guaza***

Common names: **E**: dusky grouper; **F**: mérou noir; **S**: mero; **A(L)**: farouj; **M**: cerna; **I**: cernia

Distribution in sea: coastal, continental shelf, demersal

Distribution in region: whole of Mediterranean (except Baleares, Malta)

Common size (cm): 20–80

Type of fishery: incidental in semi-industrial fisheries (Sicily), artisanal, sport

Type of gear: bottom trawls, gillnets and longlines, traps, handlines, barriers, harpoons

Product/use: fresh, refrigated, frozen

Countries: Algeria, Libyan Arab Jamahiriya

by Minguell, C.

Scientific name: ***Helicolenus dactylopterus***

Common names: **E**: rockfish; **F**: rascasse de fond; **S**: gallineta; **A(A)**: rascasse; **A(L)**: shkorfo; **A(T)**: boukacha; **M**: skorfna; **I**: scorfano di fondale

Distribution in sea: coastal, continental shelf and upper slope, demersal

Distribution in region: whole Mediterranean, except northern half of the Adriatic

Common size (cm): 15–25

Type of fishery: semi-industrial (Spain, Adriatic, Sicily, Cyprus), artisanal

Type of gear: beach seines, bottom trawls

Product/use: fresh, refrigated, frozen

Countries: Spain

by Cambraia Duarte, P.M.N.

Scientific name: ***Isurus oxyrinchus***

Common names: **E**: shortfin mako; **F**: taupe bleue; **S**: marrajo dientuso; **A(A)**: taupe bleu; **A(L)**: zergaya; **A(M)**: lkars; **M**: pixxitondu; **I**: squalo mako

Distribution in sea: oceanic, coastal, epipelagic

Distribution in region: whole of Mediterranean (except N Aegean)

Common size (cm): 150–200

Type of fishery: incidental in semi-industrial fisheries (Sicily, for swordfish, and Cyprus), artisanal

Type of gear: bottom trawls and gillnets, bottom and drifting longlines, trolls, handlines

Product/use: fresh, refrigated, frozen; liver oil; bait

Countries: Spain

by Randall, J.E.

Scientific name: ***Lamna nasus***

Common names: **E**: porbeagle; **F**: taupe commune; **S**: marrajo sardinero; **A(A)**: taupe commune; **A(L)**: zergaya; **A(M)**: lkars **M**: pixxiplamtu; **I**: smeriglio

Distribution in sea: oceanic, coastal, epipelagic, down to 370 m

Distribution in region: whole of Mediterranean

Common size (cm): 90–260

Type of fishery: occasional, artisanal

Type of gear: bottom trawls and trammel nets, bottom and drifting longlines, trolls, traps

Product/use: fresh, refrigerated, frozen (Tyrrhenian Sea); bait (Morocco); liver oil

Countries: Malta

FAO

Scientific name: ***Lepidopus caudatus***

Common names: **E**: silver scabbardfish; **F**: sabre argenté; **S**: pez cinto; **A(A)**: sabre argente; **A(L)**: semta; **A(T)**: sibtta; **M**: fjamma; **I**: pesce sciabola

Distribution in sea: coastal and continental shelf, benthopelagic

Distribution in region: W Mediterranean up to Egypt; S Adriatic; Aegean Sea

Common size (cm): 50–150

Type of fishery: semi-industrial (Spain, Sicily), artisanal, sport

Type of gear: purse seines, lampara nets, bottom trawls and longlines

Product/use: fresh, refrigated

Countries: Morocco, Spain

by Cambraia Duarte, P.M.N.

Scientific name: ***Lithognathus mormyrus***

Common names: **E**: striped seabream; **F**: marbré; **S**: herrera; **A(A)**: menkous; **A(L)**: mankus; **A(M)**: rmouli; **A(T)**: menkous; **M**: mingus; **I**: marmora

Distribution in sea: coastal, demersal

Distribution in region: whole of Mediterranean (except Baleares, Malta); Sea of Marmara

Common size (cm): 15–30

Type of fishery: semi-industrial fisheries (Adriatic, Egypt), artisanal, sport

Type of gear: beach and purse seines; bottom and pelagic trawls; bottom gillnets and longlines; trammel nets; cast nets (Tunisia); traps; handlines; cherfa cherfa (Tunisia)

Product/use: fresh, refrigated

Countries: France, Spain, Tunisia

by Freitas, R.

Scientific name: ***Lophius budegassa***

Common names: **E**: black-bellied angler; **F**: baudroie rousse; **S**: rape negro; **A(A)**: baudroie; **A(L)**: boshkara; **A(T)**: bichi chkara; **M**: petrica zghira; **I**: budego, rospo coda tripla

Distribution in sea: coastal, continental shelf and upper slope, benthic

Distribution in region: whole of Mediterranean

Common size (cm): 20–40

Type of fishery: semi-industrial fisheries

Type of gear: bottom trawls, gillnets and longlines

Product/use: fresh, refrigated, frozen

Countries: France

by Neto, G.

Scientific name: ***Lophius piscatorius***

Common names: **E**: angler; **F**: baudroie commune; **S**: rape; **A(A)**: baudroie; **A (L)**: boshkara; **A(T)**: bichi chkara; **M**: petrici; **I**: rana pescatrice

Distribution in sea: coastal, continental shelf and upper slope, benthic

Distribution in region: whole of Mediterranean

Common size (cm): 20–100

Type of fishery: semi-industrial (Spain, Cyprus), artisanal

Type of gear: bottom trawls, gillnets and longlines

Product/use: fresh, refrigated, frozen

Countries: France, Italy, Morocco, Spain, Tunisia

by Svensen, E.

Scientific name: ***Merluccius merluccius***

Common names: **E**: European hake; **F**: merlu commun; **S**: merluza europea; **A(A)**: nasalli; **A(L)**: marlutso; **A(T)**: nazalli; **M**: merluzz; **I**: nasello, merluzzo

Distribution in sea: continental shelf and slope, demersal, bathypelagic

Distribution in region: whole of Mediterranean; Sea of Marmara

Common size (cm): 12–60

Type of fishery: semi-industrial, artisanal

Type of gear: bottom and pelagic trawls, bottom gillnets and longlines, purse seines, handlines

Product/use: fresh, refrigated, frozen, salt-dried, potted

Countries: Algeria, France, Malta, Spain

by Svensen, R.

Scientific name: ***Mullus barbatus***

Common names: **E**: red mullet; **F**: rouget-barbet de vase; **S**: salmonete de fango; **A(A)**: rouget; **A(L)**: trelia bayda; **A(T)**: trilia bidha; **M**: trilja tal-quawwi; **I**: triglia di fango

Distribution in sea: continental shelf, demersal

Distribution in region: whole of Mediterranean; Black Sea

Common size (cm): 10–20

Type of fishery: semi-industrial, artisanal, sport

Type of gear: beach seines, bottom trawls and gillnets, hoop nets, handlines, harpoons

Product/use: fresh, refrigated, frozen, salted

Countries: Algeria, Malta

by Svensen, R.

Scientific name: ***Mullus surmuletus***

Common names: **E**: surmullet; **F**: rouget-barbet de roche; **S**: salmonete de roca; **A(A)**: rouget; **A(L)**: trelia; **A(T)**: trilia hamra; **M**: trilja tal-hawa; **I**: triglia di scoglio

Distribution in sea: continental slope and upper shelf, demersal, coastal

Distribution in region: whole of Mediterranean (except Baleares; Black Sea

Common size (cm): 10–25

Type of fishery: semi-industrial, artisanal, sport

Type of gear: beach and purse seine, bottom trawls, gillnets and longlines, hoop nets, harpoons, handlines

Product/use: fresh, refrigated

Countries: Algeria, France, Libyan Arab Jamahiriya, Malta, Spain

by Patzner, R.

Scientific name: ***Pagellus acarne***

Common names: **E**: axillary seabream; **F**: pageot acarné; **S**: aligote; besugo; **A(A)**: morjane; **A(L)**: bazoka; **A(M)**: pageot; **A(T)**: morjane; **M**: bazuga; **I**: pagello bastardo

Distribution in sea: coastal, continental shelf, demersal

Distribution in region: whole of Mediterranean (except Baleares)

Common size (cm): 10–25

Type of fishery: semi-industrial fisheries (Sicily, Adriatic, Cyprus), artisanal, sport

Type of gear: beach and purse seines, bottom and pelagic trawls, bottom gillnets and longlines, handlines, traps

Product/use: fresh, refrigated

Countries: France, Italy, Morocco, Spain

by Hernández-González, C.L.

Scientific name: ***Pagellus bellottii bellottii***

Common names: **E**: red pandora; **F**: pageot à tache rouge; **S**: breca chata; **I**: pagello maculato

Distribution in sea: coastal, continental shelf, demersal

Distribution in region: Morocco, Algeria

Common size (cm): 15–25

Type of fishery: artisanal

Type of gear: beach and purse seines, bottom gillnets and longlines, handlines

Product/use: fresh

Countries: Morocco

by Dammous, S.

Scientific name: ***Pagellus bogaraveo***

Common names: **E**: blackspot seabream; **F**: dorade rose; **S**: besugo; **A(A)**: morjane; **A(L)**: bazoka; **A(M)**: pageot; **A(T)**: morjane; **M**: bazuga; **I**: occhione

Distribution in sea: coastal, continental shelf and upper slope, demersal

Distribution in region: W Mediterranean (except Baleares); Adriatic, Ionian and Aegean Seas

Common size (cm): 15–50

Type of fishery: semi-industrial fisheries (Spain, Sicily), artisanal , sport

Type of gear: bottom trawls, gillnets and longlines, handlines

Product/use: fresh

Countries: France, Italy, Morocco, Spain

by Cambraia Duarte, P.M.N.

Scientific name: ***Pagellus erythrinus***

Common names: **E**: common pandora; **F**: pageot commun; **S**: breca; **A(A)**: morgen; **A(L)**: morjan; **A(M)**: pageot rouge; **A(T)**: morjane horr; **M**: pagella hamra; **I**: pagello fragolino

Distribution in sea: coastal, continental shelf and upper slope, demersal

Distribution in region: whole of Mediterranean (except Baleares); Sea of Marmara; SW Black Sea

Common size (cm): 10–30

Type of fishery: semi-industrial fisheries (Spain, Sicily, Cyprus), artisanal, sport

Type of gear: beach and purse seines; bottom trawls; gillnets and longlines; trammel nets; handlines; traps; gargoulettes (Tunisia)

Product/use: fresh, refrigated, frozen

Countries: Algeria, France, Morocco, Spain, Tunisia

by Hernández-González, C.L.

Scientific name: ***Pagrus pagrus pagrus***

Common names: **E**: common seabream; **F**: pagre commun; **S**: pargo; **A(A)**: pagre; **A(L)**: bagro; **A(M)**: pagrus pagrus; **A(T)**: pagre; **M**: pagru; **I**: pagro

Distribution in sea: coastal, continental shelf, demersal

Distribution in region: whole of Mediterranean (except Baleares, Malta)

Common size (cm): 20–60

Type of fishery: semi-industrial fisheries (Spain, Sicily, Egypt, Cyprus), artisanal, sport

Type of gear: beach seines; bottom trawls, gillnets and longlines; pelagic longlines; handlines; traps

Product/use: fresh, refrigated

Countries: Algeria, Libyan Arab Jamahiriya, Malta, Tunisia

by Patzner, R.

Scientific name: ***Phycis blennoides***

Common names: **E**: greater forkbeard; **F**: phycis de fond; **S**: brótola de fango; **A(A)**: mostia kabirah; **A(L)**: deeb; **A(M)**: bartola; **A(T)**: mostia kabirah; **M**: lipp abjad; **I**: mostella

Distribution in sea: continental shelf and slope, demersal

Distribution in region: whole of Mediterranean (except S Turkey, Cyprus, W Egypt, E Libyan Arab Jamahiriya)

Common size (cm): 20–40

Type of fishery: semi-industrial, artisanal

Type of gear: beach seines; bottom trawls, gillnets and longlines; handlines; traps

Product/use: fresh, occasionally fish-meal (Sicily)

Countries: Malta

by Luquet, D.

Scientific name: ***Phycis phycis***

Common names: **E**: forkbeard; **F**: phycis de roche; **S**: brótola de roca; **A(A)**: mostia saghirah; **A(L)**: deeb; **A(T)**: mostia saghirah; **M**: lipp tal-qawwi; **I**: musdea bianca

Distribution in sea: continental shelf and slope, demersal

Distribution in region: whole of Mediterranean (except S Turkey, Cyprus, W Egypt, Libyan Arab Jamahiriya)

Common size (cm): 10–40

Type of fishery: semi-industrial (Spain), artisanal

Type of gear: trawls, gillnets, bottom longlines, traps, handlines

Product/use: fresh

Countries: France, Spain

by Cambraia Duarte, P.M.N.

Scientific name: ***Prionace glauca***

Common names: **E**: blue shark; **F**: peau bleue; **S**: tiburón azúl; **A(A)**: bou menqar; **A(L)**: ergaya; **(M)**: huta kahla; **A(T)**: bou menqar; **M**: huta kahla; **I**: verdesca

Distribution in sea: coastal, oceanic, pelagic

Distribution in region: whole of Mediterranean

Common size (cm): 180–300

Type of fishery: incidental in semi-industrial fishery for swordfish (Sicily), artisanal, sport

Type of gear: bottom and pelagic trawls, gillnets, trammel nets, drifting longlines, handlines, trolls

Product/use: fresh

Countries: Malta

by Carvalho Filho, A.

Scientific name: ***Sarda sarda***

Common names: **E**: Atlantic bonito; **F**: bonite à dos rayé; **S**: bonito atlántico; **A(A)**: bonite; **A(L)**: mghatat; **A(M)**: cerda; **A(T)**: toumbrel; **M**: plamtu; **I**: palamita

Distribution in sea: mainly coastal epipelagic

Distribution in region: whole of Mediterranean; Black Sea

Common size (cm): 25–65

Type of fishery: semi-industrial (Spain, Turkey, Black Sea), artisanal

Type of gear: beach and purse seines; lampara nets; bottom and pelagic gillnets; handlines; trolls; traps; barriers

Product/use: fresh, salted, smoked, tinned

Countries: Algeria, France, Morocco, Spain, Tunisia

by Cambraia Duarte, P.M.N.

Scientific name: ***Sardina pilchardus***

Common names: **E**: European pilchard; **F**: sardine commune; **S**: sardine; **A(A)**: sardine; **A(L)**: sardin mabroum; **A(M)**: sardina; **A(T)**: sardina; **M**: sardin kahla; **I**: sardina

Distribution in sea: coastal, pelagic

Distribution in region: whole of Mediterranean; (except Cyprus, S Turkey, W Egypt, E Libyan Arab Jamahiriya); Sea of Marmara; Black Sea

Common size (cm): 15–20

Type of fishery: industrial, semi-industrial, artisanal

Type of gear: beach and purse seines; lampara nets; bottom and pelagic trawls; pelagic gillnets; barriers

Product/use: fresh, refrigated, salted, smoked, marinated, tinned; fishmeal and oil; bait

Countries: Algeria, Malta, Spain, Tunisia

by Dammous, S.

Scientific name: ***Sardinella aurita***

Common names: **E:** round sardinella; **F:** allache; **S:** alacha; **A(A):** latchah; **A(L):** sardinah; **A(M):** latcha; **A(T):** latchah; **M:** lacca tal-faxx; **I:** alaccia

Distribution in sea: coastal, pelagic

Distribution in region: whole of Mediterranean; Black Sea

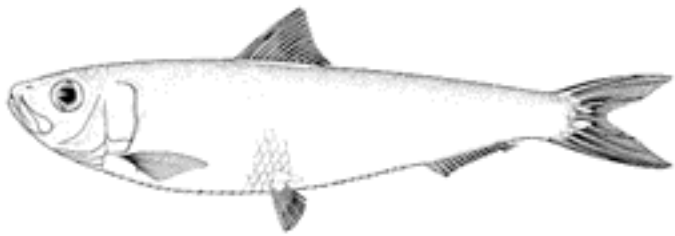
Common size (cm): 15–25

Type of fishery: semi-industrial (Spain, Tunisia, Morocco, Cyprus), artisanal

Type of gear: beach and purse seines, lampara nets, bottom and pelagic trawls, bottom gillnets, barriers

Product/use: fresh, frozen, salted, tinned; fishmeal and oil; bait

Countries: Algeria, Libyan Arab Jamahiriya



FAO

Scientific name: ***Scomber japonicus***

Common names: **E**: chub mackerel; **F**: maquereau espagnol; **S**: estornino; **A(A)**: sqoumri; **A(L)**: cawalli; **A(M)**: kabaila; **A(T)**: scombri bou inne; **M**: kavall; **I**: lanzardo

Distribution in sea: epipelagic or mesodemersal

Distribution in region: whole of Mediterranean; Sea of Marmara; occasionally SW Black Sea

Common size (cm): 15–30

Type of fishery: semi-industrial (Spain, Sicily, Italy, Morocco, Israel, Adriatic Sea); artisanal

Type of gear: beach and purse seines, lampara nets, bottom and pelagic trawls and gillnets, bottom and drifting longlines, handlines, trolls, barriers

Product/use: fresh, refrigated, frozen, salted, salt-dried, smoked, tinned; bait

Countries: Malta

by Cambraia Duarte, P.M.N.

Scientific name: ***Scomber scombrus***

Common names: **E:** Atlantic mackerel; **F:** maquereau commun; **S:** caballa del Atlántico; **A(A):** sqoumri; **A(L):** cawalli; **A(M):** kabaila; **A(T):** scombri bou richa: **M:** pizzintun; **I:** sgombro

Distribution in sea: epipelagic or mesodemersal

Distribution in region: whole of Mediterranean; S Black Sea

Common size (cm): 18–30

Type of fishery: semi-industrial (Spain, Sicily, Morocco, Cyprus, Turkey, Tyrrhenian and Adriatic Seas); artisanal

Type of gear: beach and purse seines; lampara nets; bottom and pelagic trawls, gillnets and longlines; handlines; trolls; barriers

Product/use: fresh, salted, salt-dried, smoked, marinated, tinned; bait

Countries: Malta, Tunisia

by Ueberschaer, B.

Scientific name: ***Scorpæna notata***

Common names: **E**: small red scorpionfish; **F**: petite rascasse; **S**: scorpora; **A(A)**: rascasse; **A(L)**: shkorfo aswad; **A(T)**: boukachech sghir; **M**: skorfnott; **I**: scorfanotto

Distribution in sea: coastal, continental shelf and upper slope, benthic

Distribution in region: whole of Mediterranean (except Baleares, Sardinia, most of Libyan Arab Jamahiriya and Egypt, S Turkey); E and W Black Sea

Common size (cm): 10–15

Type of fishery: semi-industrial (Adriatic, Sicily, Cyprus), artisanal

Type of gear: beach seines, bottom trawls, gillnets and longlines, handlines

Product/use: fresh, refrigated

Countries: France, Italy

by Patzner, R.

Scientific name: ***Scorpæna porcus***

Common names: **E**: black scorpionfish; **F**: rascasse brune; **S**: rascacio; **A(A)**: rascasse; **A(L)**: shkorfo aswad; **A(T)**: boukachech akhel; **M**: skorfna sewda; **I**: scorfano nero

Distribution in sea: coastal, demersal

Distribution in region: whole of Mediterranean; Sea of Marmara; Black Sea

Common size (cm): 10–20 (Med.)

7–13 (Black Sea)

Type of fishery: semi-industrial (Spain, Cyprus), artisanal

Type of gear: bottom trawls and gillnets, dredges, traps, beach seines, handlines

Product/use: fresh, refrigated

Countries: Spain

by Hernández-González, C.

Scientific name: ***Scorpæna scrofa***

Common names: **E:** red scorpionfish; **F:** rascasse rouge; **S:** cabracho; **A(A):** rascasse; **A(L):** shkorfo; **A(T):** boukachech ahmer; **M:** cipullazza; **I:** scorfano rosso

Distribution in sea: coastal, continental shelf, demersal

Distribution in region: whole of Mediterranean

Common size (cm): 20–30

Type of fishery: semi-industrial (Sicily, Cyprus), artisanal

Type of gear: bottom trawls, gillnets and longlines, beach seines, traps, handlines

Product/use: fresh, refrigated, frozen

Countries: Italy, Morocco, Spain, Tunisia

by Hernández-González, C.

Scientific name: ***Scyliorhinus canicula***

Common names: **E**: smallspotted catshark; **F**: petite roussette; **S**: pintarroja; **A(A)**: ktat; **A(L)**: gtat; **A(M)**: gata; **A(T)**: ktat; **M**: gattarel; **I**: gattuccio

Distribution in sea: coastal, demersal

Distribution in region: whole of Mediterranean; Sea of Marmara

Common size (cm): 20–50

Type of fishery: semi-industrial, artisanal

Type of gear: bottom trawls, gillnets, longlines, traps, handlines

Product/use: fresh

Countries: Algeria

by Aquarium Kiel

Scientific name: ***Seriola dumerili***

Common names: **E**: great amberjack; **F**: sériole couronnée; **S**: pez de limón; **A(A)**: poisson limon; **A(L)**: shoal; **A(M)**: seriole; **A(T)**: safraia bichi limouni; **M**: accola; **I**: ricciola

Distribution in sea: coastal, epibenthic, pelagic

Distribution in region: whole of Mediterranean

Common size (cm): 30–50

Type of fishery: semi-industrial, artisanal, sport

Type of gear: beach and purse seines, bottom and pelagic gillnets, handlines, trolls, bottom and drifting longlines, bottom trawls, barriers

Product/use: fresh, refrigated, frozen

Countries: Libyan Arab Jamahiriya, Spain

by Pontes, M.

Scientific name: ***Solea vulgaris***

Common names: **E:** common sole; **F:** sole commune; **S:** lenguado; **A(A):** sole; **A(L):** mdas; **A(T):** mdess; **M:** ingwata; **I:** sogliola comune

Distribution in sea: coastal, demersal

Distribution in region: whole of Mediterranean (except S Cyprus); Sea of Marmara; SW Black Sea

Common size (cm): 15–45

Type of fishery: semi-industrial, artisanal

Type of gear: beach seines, bottom trawls and gillnets

Product/use: fresh, frozen fillets

Countries: France, Spain

by Canosa, C. & B.F. Souto

Scientific name: ***Sparus aurata***

Common names: **E**: gilthead seabream; **F**: dorade royale; **S**: dorada; **A(A)**: ourata; **A(L)**: kerraf; **A(M)**: daurade; **A(T)**: ourata; **M**: awrata; **I**: orata

Distribution in sea: coastal, demersal

Distribution in region: whole of Mediterranean (except Cyprus); Sea of Marmara

Common size (cm): 20–50

Type of fishery: semi-industrial fisheries (Sicily, Israel, Egypt), artisanal, sport

Type of gear: beach and purse seines; bottom trawls, gillnets and longlines; trammel nets

Product/use: fresh, refrigated, frozen; aquaculture (mainly Italy, Sicily, France, Spain)

Countries: France, Malta, Spain, Tunisia

by JJPhoto

Scientific name: ***Thunnus alalunga***

Common names: **E**: albacore; **F**: germon; **S**: atún blanco; **A(A)**: ghzel; **A(L)**: albacore; **A(M)**: germon; **A(T)**: ghzel; **I**: tonno alalonga

Distribution in sea: oceanic, epipelagic, mesopelagic

Distribution in region: N Mediterranean; Egyptian waters (except Nile delta), Israel; Aegean Sea; Sea of Marmara

Common size (cm): 50–80

Type of fishery: semi-industrial (Spain, Egypt, Tyrrhenian and Adriatic Seas), artisanal, sport

Type of gear: beach and purse seines; bottom and pelagic gillnets; drifting longlines; trolls; barriers

Product/use: fresh, salted, tinned

Countries: Tunisia

by Hofinger, E.

Scientific name: ***Thunnus thynnus thynnus***

Common names: **E**: northern bluefin tuna; **F**: thon rouge; **S**: atún; **A(A)**: toun ahmar; **A(L)**: tun; **A(M)**: thone; **A(T)**: toun ahmar; **M**: tonn; **I**: tonno rosso

Distribution in sea: oceanic (migratory), epipelagic, mesopelagic

Distribution in region: whole of Mediterranean; Black Sea

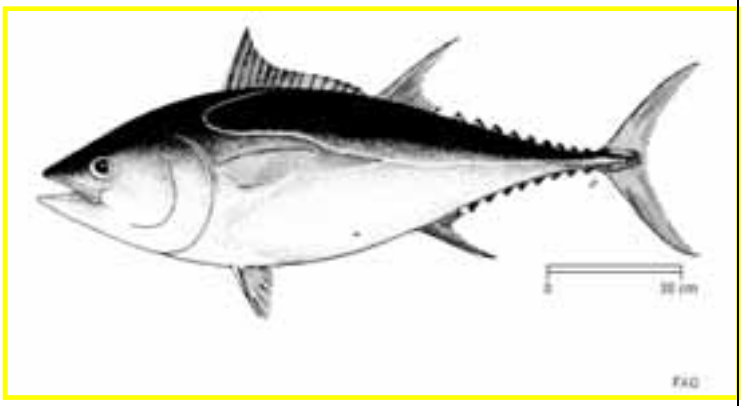
Common size (cm): 50–150

Type of fishery: semi-industrial (Spain, Sicily, Morocco, Tyrrhenian and Adriatic Seas), artisanal, sport

Type of gear: beach and purse seines; pelagic trawls and gillnets; drifting longlines; handlines; trolls; barriers

Product/use: fresh, refrigated, frozen, smoked, tinned

Countries: Algeria, Malta, Morocco, Spain, Tunisia



Scientific name: ***Trachurus mediterraneus***

Common names: **E**: Mediterranean horse mackerel; **F**: chinchard à queue jaune; **S**: jurel mediterráneo; **A(A)**: chourou farasi; **A(L)**: saurou aswad; **A(M)**: chren; **A(T)**: chourou asfer; **M**: sawrella; **I**: sugarello maggiore

Distribution in sea: oceanic, epipelagic, mesopelagic

Distribution in region: migratory; whole of Mediterranean; Black Sea

Common size (cm): 10–50

Type of fishery: industrial, semi-industrial, artisanal, sport

Type of gear: beach and purse seines, lampara nets, bottom and pelagic trawls, bottom gillnets and longlines, handlines, barriers

Product/use: fresh, refrigated, frozen, salted, dried, smoked, breaded, tinned; fishmeal; bait

Countries: Malta

by Meyer, T.

Scientific name: ***Trachurus trachurus***

Common names: **E**: Atlantic horse mackerel; **F**: chinchard d'Europe; **S**: jurel; **A(A)**: chourou europi; **A(L)**: saurou; **A(M)**: chrene; **A(T)**: chourou; **M**: sawrella kahla; **I**: suro

Distribution in sea: coastal, epibenthic, pelagic

Distribution in region: whole of Mediterranean; occasionally Black Sea

Common size (cm): 15–30

Type of fishery: industrial, semi-industrial, artisanal, sport

Type of gear: beach and purse seines; lampara nets; bottom and pelagic trawls; bottom gillnets and longlines; handlines; barriers

Product/use: fresh, refrigerated, salted; bait

Countries: Malta, Spain, Tunisia

by JJPhoto

Scientific name: ***Chelidonichthys (ex-Trigla) lucerna***

Common names: **E**: tub gurnard; **F**: grondin-perlon; **S**: bejel; **A(A)**: galinette; **A(L)**: djaj; **A(T)**: djej; **M**: gallinetta; **I**: capone, gallinella

Distribution in sea: coastal, continental shelf and upper slope, benthic

Distribution in region: whole of Mediterranean; Sea of Marmara; Black Sea

Common size (cm): 20–40

Type of fishery: semi-industrial (Spain, Sicily, Cyprus, Egypt), artisanal

Type of gear: bottom trawls, gillnets and longlines, handlines, beach seines

Product/use: fresh, refrigated, frozen

Countries: France

by Stergiou, K.I.

Scientific name: ***Xiphias gladius***

Common names: **E**: swordfish; **F**: espadon; **S**: pez espada; **A(A)**: bou sif; **A(L)**: aboucet; **A(T)**: bou sif; **M**: pixxispad; **I**: pesce spada

Distribution in sea: oceanic, epi- and meso-pelagic

Distribution in region: whole of Mediterranean; Black Sea

Common size (cm): 80–220

Type of fishery: semi-industrial (Spain, Cyprus), artisanal, sport

Type of gear: beach and purse seines; bottom and pelagic trawls, gillnets and longlines; handlines; harpoons; trolls

Product/use: fresh, refrigated, frozen and potted

Countries: Algeria, Libyan Arab Jamahiriya, Malta, Spain, Tunisia

by Cambraia Duarte, P.M.N.

Crustaceans

Scientific name: ***Maja squinado***

Common names: **E**: spinous spider crab; **F**: araignée de mer; **S**: centolla; **I**: granseola

Distribution in sea: demersal, over rocky bottoms or sandy bottoms covered with algae, sublittoral, down to 150 m, even 500 m

Distribution in region: whole Mediterranean, except southern Turkey

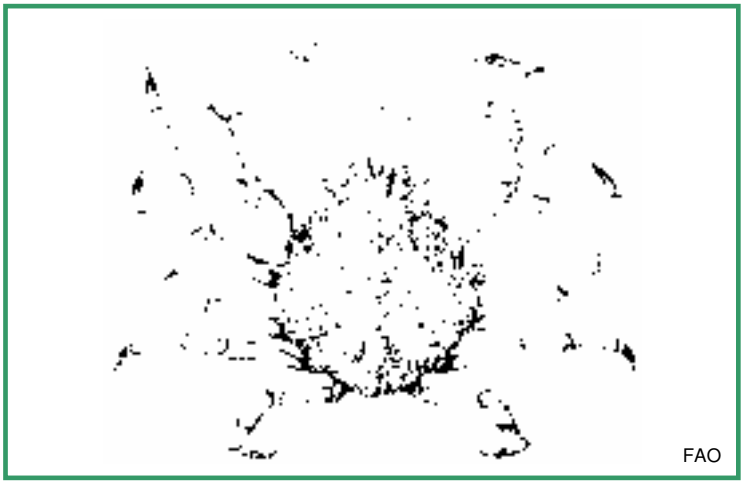
Common size (cm): 10 (carapace width)

Type of fishery: artisanal

Type of gear: bottom trawls, beach seines, trammel nets, by hand or tongs (divers)

Product/use: fresh

Countries: Morocco


FAO

Scientific name: ***Homarus gammarus***

Common names: **E:** European lobster; **F:** homard européen; **S:** bogavante; **I:** astice

Distribution in sea: demersal over rocky bottoms, 0–150 m

Distribution in region: whole Mediterranean, except Malta and the Levant

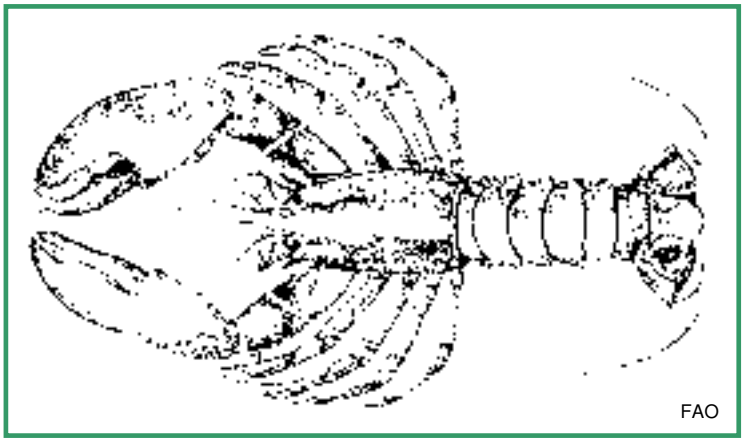
Common size (cm): 23–50

Type of fishery: semi-industrial, artisanal

Type of gear: pots, bottom trammel nets, handlines, by hand

Product/use: fresh, frozen

Countries: Italy


FAO

Scientific name: ***Nephrops norvegicus***

Common names: **E**: Norway lobster; **F**: langoustine; **S**: cigala; **M**: skampu; **I**: scampo

Distribution in sea: demersal over muddy or sandy-muddy bottoms, 20–800 m (common at 100–300 m)

Distribution in region: whole Mediterranean, except in Levant

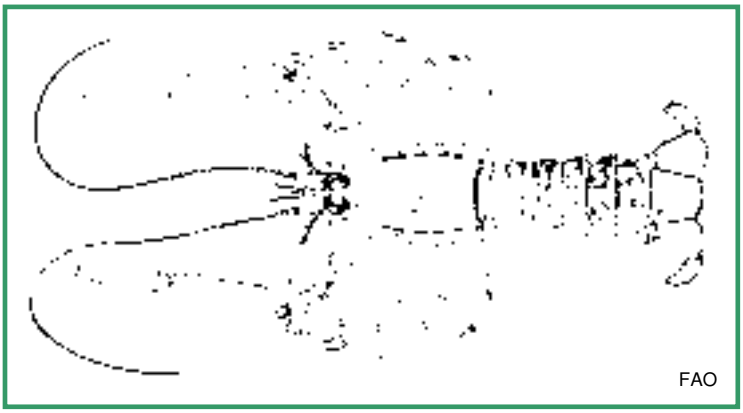
Common size (cm): 10–19

Type of fishery: semi-industrial, artisanal

Type of gear: bottom trawls, pots

Product/use: fresh, refrigerated, frozen

Countries: Algeria, Italy, Spain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Scientific name: ***Palinurus elephas***

Common names: **E**: common spiny lobster; **F**: langouste rouge; **S**: langosta común; **M**: awwista; **I**: aragosta mediterranea

Distribution in sea: demersal, rocky bottoms, 15–160 m

Distribution in region: whole Mediterranean except Levant, Egypt, eastern Libyan Arab Jamahiriya

Common size (cm): 20–40

Type of fishery: artisanal, semi-industrial (Ligurian Sea, Sicily)

Type of gear: traps, trawls, bottom gillnets, handlines, by hand

Product/use: fresh, refrigerated, frozen

Countries: Algeria, France, Malta, Morocco, Spain


FAO

Scientific name: ***Scyllarides latus***

Common names: **E**: Mediterranean slipper lobster; **F**: grande cigale; **S**: cigarra; **A(L)**: shcala; **I**: cicala di mare

Distribution in sea: demersal over rocky and sandy bottoms, 4–100 m

Distribution in region: whole Mediterranean except northern Adriatic and Malta

Common size (cm): 5–36

Type of fishery: artisanal or incidental in semi-industrial fisheries

Type of gear: bottom trawls and gillnets

Product/use: fresh, refrigerated, frozen

Countries: Libyan Arab Jamahiriya


FAO

Scientific name: ***Aristæomorpha foliacea***

Common names: **E**: giant red shrimp; **F**: gambon rouge; **S**: langostino moruno; **I**: gambero rosso

Distribution in sea: demersal over muddy bottoms, 120–300 m, down to 700 m

Distribution in region: whole Mediterranean, except north and central Adriatic, northern Aegean

Common size (cm): 13–14 (males); 17–20 (females)

Type of fishery: artisanal, semi-industrial

Type of gear: bottom trawls

Product/use: fresh, refrigerated, frozen

Countries: Spain


FAO

Scientific name: ***Aristeus antennatus***

Common names: **E**: blue and red shrimp; **F**: crevette rouge; **S**: gamba rosada; **M**: gamblu homor; **I**: gambero imperiale

Distribution in sea: demersal, muddy bottoms, 80–1 400 m

Distribution in region: whole Mediterranean except Adriatic Sea, eastern Aegean Sea, western Turkey

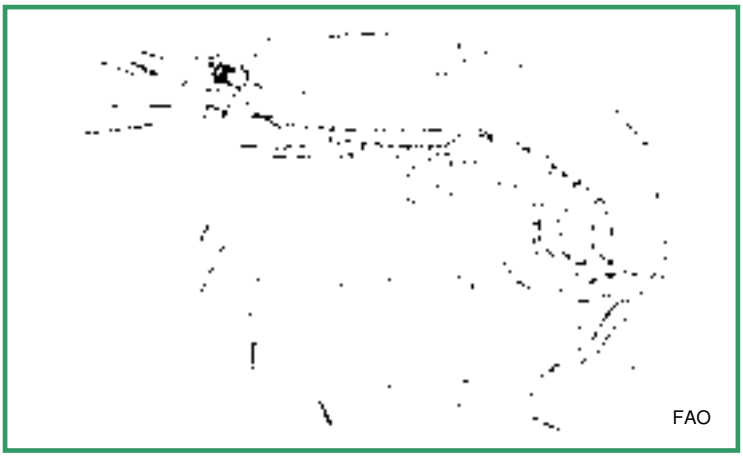
Common size (cm): 10–18

Type of fishery: artisanal, semi-industrial

Type of gear: trawls

Product/use: fresh, refrigerated, frozen

Countries: Malta, Spain



Scientific name: ***Crangon crangon***

Common names: **E**: common shrimp; **F**: crevette grise; **S**: quisquilla; **I**: gambero grigio

Distribution in sea: demersal over muddy or muddy-sandy bottoms or seagrass beds, 0–20 m, lagoons and estuaries

Distribution in region: whole Mediterranean, except Malta

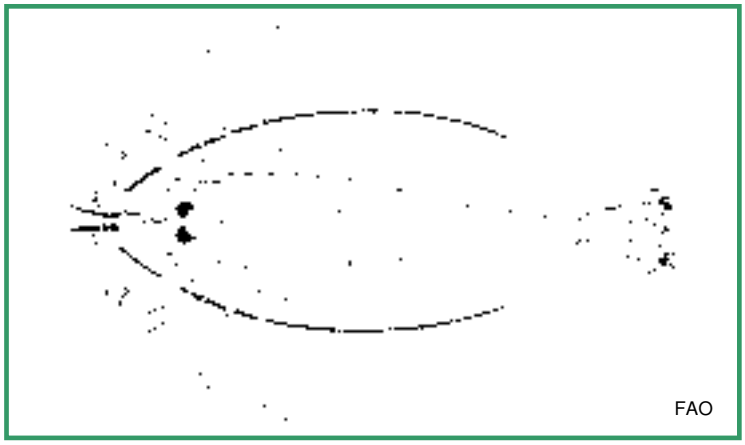
Common size (cm): 5–8

Type of fishery: artisanal

Type of gear: bottom trawls (ganguis), dredges, beach seines, barriers, pots and bags

Product/use: fresh; bait

Countries: Spain



Scientific name: ***Parapenæus longirostris***

Common names: **E**: deepwater rose shrimp; **F**: crevette rose du large; **S**: gamba de altura; **M**: gamblu bojot; **I**: gambero rosa mediterraneo

Distribution in sea: demersal, muddy/sandy bottoms, 20–700 m

Distribution in region: whole Mediterranean except N. Adriatic Sea

Common size (cm): 8–14 (males) 12–16 (females)

Type of fishery: artisanal, semi-industrial

Type of gear: trawls, palanzas (Morocco)

Product/use: fresh, refrigerated, frozen, tinned

Countries: Malta, Morocco

Scientific name: ***Penæus kerathurus***

Common names: **E**: caramote prawn; **F**: caramote; **S**: langostino; **A(L)**: gamberi kebir; **I**: mazzacolla, gambero imperiale

Distribution in sea: demersal, coastal zone, estuaries (young), muddy/sandy bottoms, 50–90 m

Distribution in region: whole Mediterranean

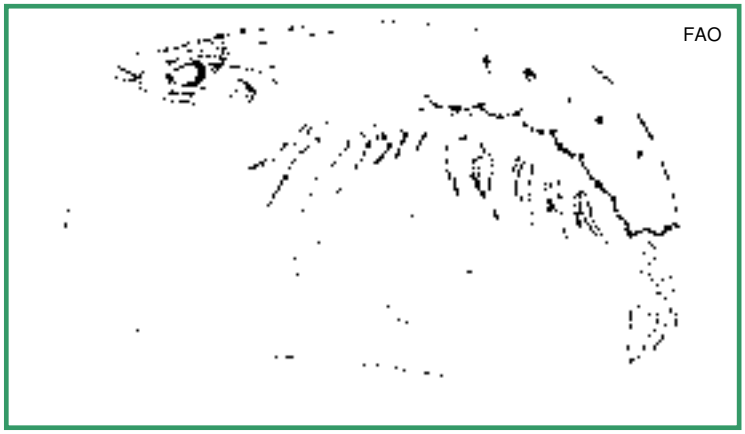
Common size (cm): 8–14 (males), 17 (females)

Type of fishery: artisanal, semi-industrial

Type of gear: trawls; beach seines (occasionally); trammel nets; traps (palanzas for young shrimp, Morocco); barriers

Product/use: fresh, refrigerated, frozen

Countries: Libyan Arab Jamahiriya, Morocco, Spain, Tunisia



Scientific name: ***Plesionika martia***

Common names: **E:** golden shrimp; **F:** crevette dorée; **S:** camarón marcial; **I:** gobbetto liscio, gobbetto dorato

Distribution in sea: demersal, muddy bottoms, 180–1 200 m

Distribution in region: whole of W. Mediterranean, S. Adriatic Sea, Ionian Sea, W. Aegean Sea, N. Crete; Nile delta

Common size (cm): 7–12

Type of fishery: artisanal, semi-industrial

Type of gear: bottom trawls, traps, longlines

Product/use: fresh, refrigerated, frozen

Countries: Malta, Spain

Scientific name: ***Plesionika edwardsii***

Common names: **E**: striped soldier shrimp; **F**: crevette Edward; **S**: camarón soldado; **I**: gobbetto striato

Distribution in sea: demersal, muddy bottoms, coral bottoms, 110–680 m (usually 250–380 m)

Distribution in region: whole of W. Mediterranean, S. Adriatic Sea, Ionian Sea, W. Aegean Sea, Crete, S. Turkey; Nile delta

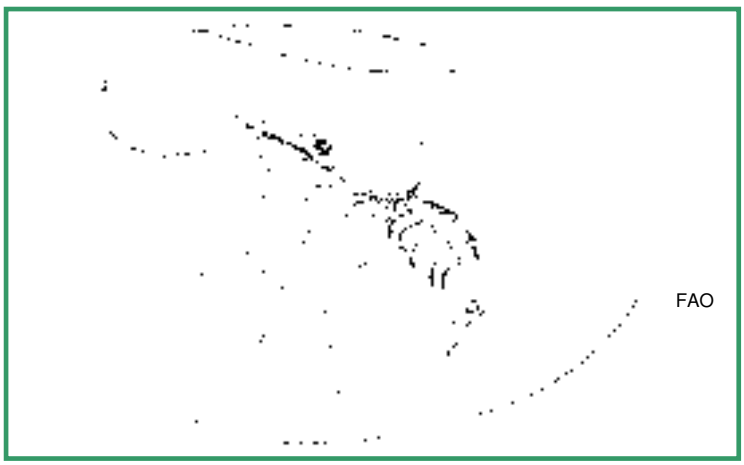
Common size (cm): 8–12

Type of fishery: artisanal, semi-industrial

Type of gear: bottom trawls, traps, longlines

Product/use: fresh, refrigerated, frozen, conserves

Countries: Malta, Spain



Scientific name: ***Squilla mantis***

Common names: **E**: spottail mantis squillid; **F**: squille ocellé; **S**: galera ocelada; **I**: pannocchia, canocchia

Distribution in sea: demersal over muddy bottoms, sublittoral, usually 50 m, down to 200 m

Distribution in region: whole Mediterranean

Common size (cm): 12–18

Type of fishery: semi-industrial, artisanal

Type of gear: bottom trawls, trammel nets, traps, dredges, beach seines

Product/use: fresh

Countries: Italy, Spain

FAO

Molluscs

Scientific name: ***Acanthocardia tuberculata***

Common names: **E**: tuberculate cockle; **F**: bucarde tuberculée; **S**: corruco; **I**: cuore rosso

Distribution in sea: benthic, sandy, sandy-muddy, gravelly bottoms (down to 80 m) in the littoral zone

Distribution in region: whole Mediterranean (except Malta)

Common size (cm): 5–7

Type of fishery: artisanal, occasionally semi-industrial

Type of gear: bottom trawls, drags/dredges, bottom gillnets and trammel nets, rakes, by hand (diving)

Product/use: fresh or tinned

Countries: Spain

FAO

Scientific name: ***Chamelea gallina***

Common names: **E**: striped venus; **F**: petite praire; **S**: chiurla; **I**: vongola comune

Distribution in sea: benthic, sandy or sandy/muddy bottoms

Distribution in region: whole Mediterranean

Common size (cm): 2.5–3.5

Type of fishery: artisanal, industrial, semi-industrial, aquaculture

Type of gear: dredges, rakes, by hand

Product/use: fresh, frozen, marinated, tinned

Countries: Morocco, Spain

FAO

Scientific name: ***Donax trunculus***

Common names: **E**: truncate donax; **F**: flion tronqué; **S**: coquina; **I**: tellina, arsella

Distribution in sea: demersal, sandy bottoms, 0–15 m

Distribution in region: whole Mediterranean except Malta

Common size (cm): 2.5–3.5

Type of fishery: artisanal, semi-industrial

Type of gear: bottom trawls, dredges, rakes, by hand

Product/use: fresh

Countries: Spain

FAO

Scientific name: ***Mytilus galloprovincialis***

Common names: **E**: Mediterranean mussel; **F**: moule méditerranéenne; **S**: mejillón mediterráneo; **I**: mitilo comune

Distribution in sea: intertidal rocks

Distribution in region: whole Mediterranean, except Malta

Common size (cm): 5–8

Type of fishery: culture (semi-industrial), artisanal, occasional, semi-industrial (Sicily)

Type of gear: rakes, by hand but now almost all by mariculture

Product/use: fresh, refrigerated, frozen, tinned; as bait

Countries: Spain

FAO

Scientific name: ***Pecten jacobæus***

Common names: **E**: great Mediterranean scallop; **F**: coquille St-Jacques de Méditerranée; **S**: concha de peregrino del Mediterráneo; **I**: cappasanta comune

Distribution in sea: inshore (various bottom types), offshore zone (detritic bottom type)

Distribution in region: whole Mediterranean except Malta

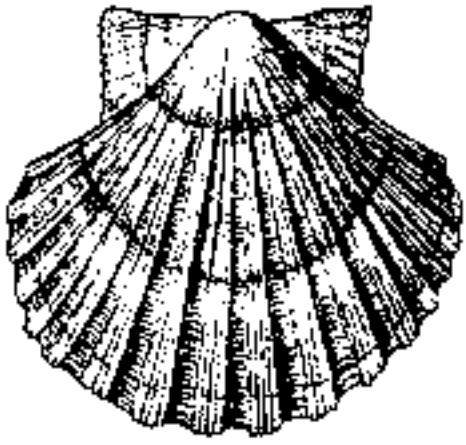
Common size (cm): 8–10

Type of fishery: artisanal, industrial

Type of gear: bottom trawls, dredges, occasionally beach seines, by hand

Product/use: fresh, refrigerated, tinned

Countries: Spain



FAO

Scientific name: ***Ruditapes decussatus***

Common names: **E**: grooved carpetshell; **F**: palourde croisée d'Europe; **S**: almeja fina; **I**: vongola verace

Distribution in sea: benthic, inshore, muddy sandy/gravelly bottoms or compact muddy bottoms, coastal lagoons

Distribution in region: whole Mediterranean except Cyprus

Common size (cm): 4–5

Type of fishery: artisanal, industrial, semi-industrial, aquaculture

Type of gear: dredges, rakes, occasionally bottom trawls

Product/use: fresh, marinated, tinned

Countries: Spain


FAO

Scientific name: ***Eledone cirrhosa***

Common names: **E**: horned octopus; **F**: poulpe blanc; **S**: pulpo blanco; **I**: moscardino bianco

Distribution in sea: benthic, sandy and muddy bottoms, 30–500 m, especially 60–150 m

Distribution in region: western Mediterranean, west of Libyan Arab Jamahiriya and Aegean Sea, sometimes in Crete, Cyprus and Nile delta

Common size (cm): 12 (female, mantle length), 8 (male, mantle length)

Type of fishery: artisanal, incidental in industrial and semi-industrial fisheries

Type of gear: bottom trawls

Product/use: fresh, refrigerated, frozen

Countries: Italy, Tunisia


FAO

Scientific name: ***Eledone moschata***

Common names: **E**: musky octopus; **F**: élédone ou poulpe musquée; **S**: pulpo almizclado; **I**: moscardino bianco

Distribution in sea: benthic, sandy and muddy bottoms, 150–90 m, down to 300 m

Distribution in region: whole Mediterranean

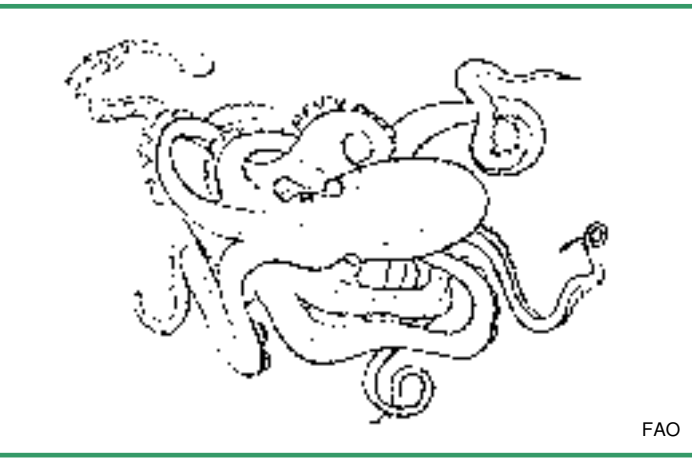
Common size (cm): 11 (mantle length)

Type of fishery: artisanal, incidental in industrial and semi-industrial fisheries

Type of gear: bottom trawls, bottom gillnets, trammel nets

Product/use: fresh, refrigerated, frozen, dried

Countries: Italy, Tunisia


FAO

Scientific name: ***Illex coindetii***

Common names: **E**: broadtail shortfin squid; **F**: encornet rouge; **S**: pota voladora; **I**: totano

Distribution in sea: pelagic, semi-demersal, 0–600 m

Distribution in region: whole Mediterranean

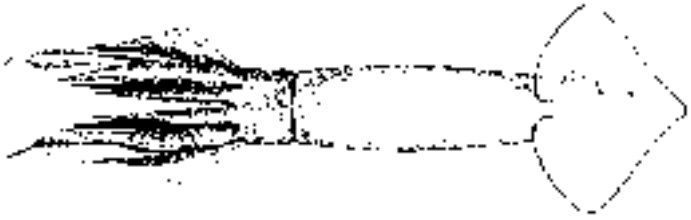
Common size (cm): 15–22

Type of fishery: incidental in industrial, semi-industrial and artisanal fisheries

Type of gear: bottom trawls, midwater trawls, handlines

Product/use: fresh, refrigerated, frozen

Countries: France, Italy



FAO

Scientific name: ***Octopus vulgaris***

Common names: **E**: common octopus; **F**: pieuvre; **S**: pulpo común; **A(L)**; garnet; **M**: garnita; **I**: polpo comune

Distribution in sea: benthic; coastal zone, to 100 m, rocky/sandy bottoms

Distribution in region: whole Mediterranean

Common size (cm): 10–20 (mantle)

Type of fishery: artisanal; incidental catch in industrial and semi-industrial fisheries

Type of gear: bottom trawls; trammel nets; handlines; traps; pots; beach seines; gargoulettes (Tunisia; A/T: drina); by hand

Product/use: fresh, refrigerated, frozen, dried

Countries: Libyan Arab Jamahiriya, Malta, Morocco, Spain, Tunisia

FAO

Scientific name: ***Sepia officinalis***

Common names: **E**: common cuttlefish; **F**: seiche commune; **S**: choco; **A(L)**: sebia; **M**: sicca; **I**: seppia comune

Distribution in sea: demersal, neritic, 0–150 m; muddy or sandy bottoms, seagrass beds

Distribution in region: whole Mediterranean

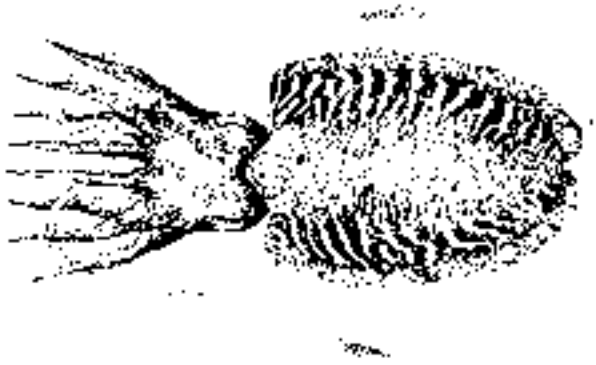
Common size (cm): 15–25 (mantle)

Type of fishery: artisanal, industrial, semi-industrial

Type of gear: bottom trawls and gillnets; trammel nets; pots and traps; handlines; barriers; cherfa cherfa (Tunisia)

Product/use: fresh, refrigerated, frozen, salt-dried; bait

Countries: Algeria, France, Libyan Arab Jamahiriya, Malta, Morocco, Spain, Tunisia



FAO

Scientific name: ***Todarodes sagittatus***

Common names: **E**: European flying squid; **F**: toutenon commun; **S**: pota europea; **M**: totlu; **I**: totano viola

Distribution in sea: semidemersal, 0–800 m

Distribution in region: whole Mediterranean, coastal and offshore

Common size (cm): 20–25

Type of fishery: artisanal, incidental catch in industrial, semi-industrial fisheries

Type of gear: bottom trawls, handlines (turluttes)

Product/use: fresh, refrigerated, frozen; bait

Countries: Italy, Malta

FAO

Moderately important species

Scientific name	Common names
Fishes	
Aphia minuta	**E:** transparent goby, **F:** nonnat, **S:** chanquete, **I:** rossetto
Atherina boyeri	**E:** bigscale sand smelt, **F:** joël, **S:** pejerrey, **I:** latterino capoccione
Boops boops	**E:** bogue, **F:** bogue, **S:** boga, **A(L):** bougah, **M:** vopa, **I:** boga
Brama brama	**E:** Atlantic pomfret, **F:** grande castagnole, **S:** japuta, **I:** pesce castagna
Centrophorus granulosus	**E:** gulper shark, **F:** squale-chagrin commun, **S:** quelvacho, **M:** zaghrun, **I:** centroforo comune
Cheilopogon heterurus	**E:** Mediterranean flyingfish, **F:** exocet méditerranéen , **S:** juriola, **I:** rondone di mare
Chelidonichthys (ex-Aspitrigla) cuculus	**E:** red gurnard, **F:** grondin rouge, **S:** arete, **I:** capone coccio
Dasyatis pastinaca	**E:** common stingray, **F:** pastenague commune, **S:** raya látigo común, **A(L):** bugrah bahar, **I:** pastinaca
Dentex dentex	**E:** common dentex, **F:** denté commun, **S:** dentón, **A(L):** dendichi, **M:** dentici, **I:** dentice
Dicentrarchus punctatus	**E:** spotted seabass, **F:** bar tacheté, **S:** baila, **I:** spigola macchiata
Diplodus annularis	**E:** annular seabream, **F:** sparaillon commun, **S:** raspalión, **A(L):** sbarus, **I:** sarago sparaglione
Diplodus vulgaris	**E:** common two-banded seabream, **F:** sar à tête noire, **S:** sargo mojarra, **A(L):** garagous mwashim, **I:** sarago fasciato
Euthynnus alleteratus	**E:** little tunny (tuna), **F:** thonine commune, **S:** bacoreta, **A(L):** rzam, **M:** kubrita, **I:** tonnetto
Gaidropsarus mediterraneanus	**E:** shore rockling, **F:** motelle de Méditerrannée, **S:** bertorella, **I:** motella mediterranea
Gaidropsarus vulgaris	**E:** three-bearded rockling, **F:** motelle commune, **S:** lota, **I:** motella maculata
Gymnammodytes cicerellus	**E:** Mediterranean sand eel, **F:** cicerelle, **S:** barrinaire, **I:** cicerello
Heptranchias perlo	**E:** sharpnose seven-gill shark, **F:** requin perlon, **S:** cañabota bocadulce, **M:** murruna, **I:** squalo manzo
Hexanchus griseus	**E:** bluntnose six-gill shark, **F:** requin-griset, **S:** cañabota gris, **M:** murruna, **I:** squalo capopiatto
Labrus merula	**E:** brown wrasse, **F:** merle, **S:** merlo, **A(L):** abukheder, **I:** tordo nero
Liza aurata	**E:** golden grey mullet, **F:** mulet doré, **S:** galupe, **I:** cefalo dorato, cefalo lotregano
Liza ramada	**E:** thinlip mullet, **F:** mulet porc, **S:** morragute, **I:** cefalo calamita
Merlangius merlangus euxinus	**E:** whiting, **F:** merlan, **S:** plegonero, **I:** merlano, molo
Mugil cephalus	**E:** flathead grey mullet, **F:** mulet à grosse tête, **S:** pardete, **A(L):** buri, **I:** cefalo comune
Mustelus mustelus	**E:** smoothhound, **F:** émissole lisse, **S:** musola, **I:** palombo comune
Oblada melanura	**E:** saddled seabream, **F:** oblade, **S:** oblada, **A(L):** kahla, **M:** kahlija, **I:** occhiato
Polyprion americanus	**E:** wreckfish, **F:** cernier commun, **S:** cherna, **M:** dott, hanzir, **I:** cernia di fondale
Pomatomus saltatrix	**E:** bluefish, **F:** tassergal, **S:** anjova, **A(L):** magres, **I:** pesce serra
Psetta maxima	**E:** turbot, **F:** turbot, **S:** rodaballo, **I:** rombo chiodato
Raja alba	**E:** white skate, **F:** raie blanche, **S:** raya bramante, **I:** razza bianca
Raja asterias	**E:** starry ray, **F:** raie étoilée, **S:** raya estrellada, **I:** razza stellata
Scophthalmus rhombus	**E:** brill, **F:** barbue, **S:** rémol, **I:** rombo liscio
Scyliorhinus stellaris	**E:** nursehound, **F:** grande roussette, **S:** alitán, **I:** gattopardo

Solea senegalensis	**E:** Senegalese sole, **F:** sole du Sénégal, **S:** lenguado senegalés, **I:** sogliola del Senegal
Sphyræna sphyræna	**E:** European barracuda, **F:** bécune européenne, **S:** espetón, **I:** luccio marino, barracuda
Sphyræna viridensis	**E:** yellowmouth barracuda, **F:** bécune bouche jaune, **S:** espetón boca amarilla, **A(L):** mughzel asfar, **I:** barracuda bocca gialla, luccio boccagialla
Sphyrna zygæna	**E:** smooth hammerhead, **F:** requin-marteau commun, **S:** cornuda cruz, **M:** kurazza, **I:** pesce martello
Spicara smaris	**E:** picarel, **F:** picarel, **S:** caramel, **M:** arznella, **I:** zerro
Spondyliosoma cantharus	**E:** black seabream, **F:** dorade grise, **S:** chopa, **A(L):** tannut, **I:** tanuta
Squalus acanthias	**E:** piked dogfish, **F:** aiguillat commun, **S:** mielga, **A(L):** abushoka, **M:** mazzola, **I:** spinarolo
Squatina squatina	**E:** angelshark, **F:** ange de mer commun, **S:** angelote, **A(L):** sfen, **I:** squadro
Trachinus draco	**E:** greater weever, **F:** grande vive, **S:** escorpión, **I:** tragina drago
Trigla (ex-Eutrigla) gurnardus	**E:** grey gurnard, **F:** grondin gris, **S:** borracho, **M:** gallina, **I:** capone corno
Trisopterus minutus capelanus	**E:** poor cod, **F:** capelan, **S:** capellán, **I:** merluzzetto
Umbrina canariensis	**E:** canary drum, **F:** ombrine bronze, **S:** verrugato de fango, **I:** ombrina delle Canarie
Umbrina cirrosa	**E:** shi drum, **F:** ombrine côtière, **S:** verrugato fusco, **A(L):** baghlah, **I:** ombrina
Uranoscopus scaber	**E:** stargazer, **F:** uranoscope, **S:** miracielo, **I:** pesce prete
Xyrichthys novacula	**E:** pearly razorfish, **F:** donzelle lame, **S:** rao, **I:** pesce pettine
Zeus faber	**E:** John dory, **F:** Saint-Pierre, **S:** pez de San Pedro, **M:** pixxi San Pietru, **I:** pesce San Pietro

Crustaceans

Carcinus æstuarii	**E:** Mediterranean shore crab, **F:** crabe vert de la Méditerranée, **S:** cangrejo mediterráneo, **I:** granchio comune, granchio ripario, moleca

Molluscs

Bolinus brandaris	**E:** purple dye murex, **F:** murex-droite épine, **S:** canaille, **I:** murice spinoso
Callista chione	**E:** smooth callista, **F:** vernis fauve, **S:** almejón, **I:** fasolaro
Loligo vulgaris	**E:** European squid, **F:** encornet, **S:** calamar, **M:** klamaru, **I:** calamaro comune
Mytilus edulis	**E:** common mussel, **F:** moule commune, **S:** mejillón, **I:** mitilo atlantico
Nassarius mutabilis	**E:** changeable nassa, **F:** nasse-ceinture, **S:** mugarida lisa, **I:** lumachina di mare
Phyllonotus trunculus	**E:** banded murex, **F:** murex tuberculé, **S:** busano, **I:** murice troncato
Venerupis aurea	**E:** golden carpetshell, **F:** clovisse (palourde) jaune, **S:** almeja dorada, **I:** vongola gialla
Venerupis rhomboides	**E:** banded carpetshell, **F:** palourde rose, **S:** almeja rubia, **I:** vongola rombo
Venus verrucosa	**E:** warty venus, **F:** praire commune, **S:** escupiña grabada, **I:** tartufo

Not important species

Scientific name	Common names
Fishes	
Alosa alosa	**E:** allis shad, **F:** alose vraie, **S:** sábalo común, **M:** lacca, **I:** alosa
Atherina hepsetus	**E:** Mediterranean sand smelt, **F:** sauclet, **S:** chucleto, **I:** latterino
Balistes carolinensis	**E:** grey triggerfish, **F:** baliste-cabri, **S:** pez ballesta, **A(L):** hallouf, **I:** pesce balestra
Belone belone gracilis	**E:** garfish, **F:** orphie, **S:** aguja, **A(L):** yebrah, **I:** aguglia
Belone belone euxini	**E:** garfish, **F:** orphie, **S:** aguja, **A(L):** yebrah, **I:** aguglia
Caranx crysos	**E:** blue runner, **F:** carangue coubali, **S:** jurel azúl, **A(L):** sawro imbriali, **I:** carango mediterraneo
Caranx rhonchus	**E:** false scad, **F:** comète coussut, **S:** jurel real, **A(L):** sawro asfar, **I:** carango ronco
Carcharhinus brevipinna	**E:** spinner shark, **F:** requin-tisserand, **S:** tiburón aleta negra, **I:** squalo tessitore
Carcharhinus falciformis	**E:** silky shark, **F:** requin soyeux, **S:** tiburón jaquetón
Carcharhinus obscurus	**E:** dusky shark, **F:** requin sombre, **S:** tiburón arenero, **I:** squalo scuro
Carcharhinus plumbeus	**E:** sandbar shark, **F:** requin gris, **S:** tiburón trozo, **I:** squalo grigio
Dentex gibbosus	**E:** pink dentex, **F:** gros denté rose, **S:** sama de pluma, **A(L):** joghali, **I:** dentice corazziere
Epinephelus æneus	**E:** white grouper, **F:** mérou blanc, **S:** cherna de ley, **A(L):** mennani, **I:** cernia bianca
Epinephelus alexandrinus	**E:** golden grouper, **F:** mérou badèche, **S:** falso abadejo, **M:** dott, **I:** cernia dorata
Epinephelus caninus	**E:** dogtooth grouper, **F:** mérou gris, **S:** cherna dentón, **A(L):** khanzirah, **I:** cernia nera
Muræna helena	**E:** Mediterranean moray, **F:** murène de la Méditerrannée, **S:** morena, **A(L):** zemrina, **M:** morina, **I:** murena
Mustelus asterias	**E:** starry smooth-hound, **F:** émissole tachetée, **S:** musola coronada, **I:** palombo stellato
Mustelus punctulatus	**E:** blackspotted smoothhound, **F:** émissole pointillé, **S:** musola punteada, **I:** palombo punteggiato
Mycteroperca rubra	**E:** comb grouper, **F:** mérou royal, **S:** gitano, **A(L):** dooth yahudi, **I:** cernia rossa
Naucrates ductor	**E:** pilot fish, **F:** poisson-pilote, **S:** pez piloto, **A(L):** lalaja, **M:** fanfru, **I:** pesce pilota
Platichthys flesus flesus	**E:** flounder, **F:** flet, **S:** platija, **I:** passera nera
Pleuronectes platessa	**E:** plaice, **F:** plie, **S:** solla, **I:** passera
Raja batis	**E:** skate, **F:** pocheteau gris, **S:** noriega, **I:** razza bavosa
Raja brachyura	**E:** blonde ray, **F:** raie lisse, **S:** raya boca de rosa, **I:** razza a coda corta
Raja clavata	**E:** thornback ray, **F:** raie bouclée, **S:** raya de clavos, **I:** razza chiodata
Raja fullonica	**E:** shagreen ray, **F:** raie chardon, **S:** raya cardadora, **I:** razza spinosa
Raja miraletus	**E:** brown ray, **F:** raie-miroir, **S:** raya de espejos, **I:** razza quattrocchi
Raja montagui	**E:** spotted ray, **F:** raie douce, **S:** raya pintada, **I:** razza maculata
Raja naevus	**E:** cuckoo ray, **F:** raie fleurie, **S:** raya santiguesa, **I:** razza cucolo
Raja oxyrinchus	**E:** longnosed skate, **F:** pocheteau noir, **S:** picón, **I:** razza monaca
Raja polystigma	**E:** speckled ray, **F:** raie tachetée, **S:** raya manchada, **I:** razza polistimma
Raja radula	**E:** rough ray, **F:** raie-râpe, **S:** raya áspera, **I:** razza scuffina
Raja undulata	**E:** undulate ray, **F:** raie brunette, **S:** raya mosaico, **I:** razza ondulata
Sarpa salpa	**E:** salema, **F:** saupe, **S:** salema, **A(L):** shelba, **M:** xilpa, **I:** salpa
Sciæna umbra	**E:** brown meagre, **F:** corb commun, **S:** corvallo, **A(L):** ghrab, **I:** corvina

Scomberomorus commerson	**E:** narrow-barred Spanish mackerel, **F:** thazard rayé, **S:** carite estriado del Indo-Pacífico, **A(L):** palamet yamani, **I:** sgombro striato
Serranus cabrilla	**E:** comber, **F:** serran-chèvre, **S:** cabrilla, **A(L):** serran, **M:** sirrana, **I:** perchia
Serranus hepatus	**E:** brown comber, **F:** serran-tambour, **S:** merillo, **I:** sacchetto
Serranus scriba	**E:** painted comber, **F:** serran-écriture, **S:** serrano, **I:** sciarrano
Siganus luridus	**E:** dusky spinefoot, **F:** sigan sombre, **S:** sigano nebuloso, **A(L):** batata, **I:** sigano scuro
Solea ægyptiaca	**E:** Egyptian sole, **F:** sole égyptienne, **S:** suela egipcia, **I:** sogliola egiziana
Sparisoma cretense	**E:** parrotfish, **F:** perroquet-vieillard, **S:** vieja colorada, **A(L):** ghazla, **I:** scaro

Others

Corallium rubrum	**E:** Sardinia coral, **F:** corail Sardaigne, **S:** coral Cerdaña, **I:** corallo rosso
Hippospongia communis	**E:** honey comb, **F:** éponge commun, **S:** esponja común, **A(L):** sfenj, **I:** spugna da cavallo, spugna cavallina
Paracentrotus lividus	**E:** stony sea urchin, **F:** oursin-pierre, **S:** erizo de mar, **I:** riccio di mare di roccia, arbacia
Nereis spp.	**E:** sandworms, **F:** néréide commune, pelouse; **S:** gusana
Microcosmus sabatier	**E:** sea fig, **F:** figue de mer, **S:** provecho, **I:** microcosmo gigante, limone di mare polimorfo