



## UNIT 3

### “THE FISHING RESOURCES AS AN ECONOMIC PRODUCT”

#### TEACHERS’ GUIDELINES

##### Unit map

Topics		
Economics of fisheries.		
Geography of fisheries.		
Trading in fishingresources		
Goals		
Know the main Countries importing and exporting fishingresources caught and farmed.		
Become acquainted with the major fishing areas of the world.		
Introduce the dynamics of trading fishingresources.		
Understand the environmental implications related to trade fishingresources.		
Inserts		
1. About the fishing industry.		
Subjects		
Geography, economics, mathematics.		
Didactic factsheets		
Type	Title	Activity
S - Survey	1. “From sea to plate”	Class survey.
R - Research	2. “The world of fishing and aquaculture”	Free research.
	3. “Fisheries”	
E – Experience/ processing	4. “The journey of fish”	Quiz.
	5. “The Economic map of fish”	Drawing.
V - Test	6. “Discovering a country”	Free research.
Basic concepts to understand the topics of the Mr.Goodfish Campaign		
Trading in fishingresources and the importance of local economic activities.		

## Educational path

From the topics treated in the previous units we have understood how the resources of the sea representing a food source for humans inevitably become also an economic resource.

This matter, which is also extremely topical, intends to encourage to **think about the importance of an essential economic resource such as the fishing product, in determining the economic balances of the various Countries and the relationships between them.**

*The contrast between globalization and safeguard of cultural, food and economic local identities represent a central issue in the cultural debate related to economic changes of the modern civilization; all the societies are wondering about the choices to make in the management of the natural resources to guarantee a future to our Planet; hence, it is evident the crucial importance that this topic shall have in the development of this didactic project.*

It is important to underline that this module, given the topics discussed, is addressed to older students, but can be usefully be adapted (through simplifications at the discretion of the teachers) also for activities with younger students.

In this unit we want in particular focus the students' attention on two aspects: on the one side to analyse the overall picture

of the fishing economy, on the other side to understand how the fishing product is marketed travelling through the journey "from sea to plate", hence facing what was defined with the term of "chain". **Insert 1** is focused on this aspect.

The work starts with the **didactic factsheet S 1** that proposes an investigation on consumption and habits of purchasing fishing products (fresh, frozen, prepared, canned etc.) of the students' families, in order to have a general overview.

Hence, the students are asked, through the help of their parents, to list the various products they have at home and to find some information about them such as origin, producer and price. This activity, besides bringing out the first information about the exporting countries and origin of the resources (subject matter of the work of the following didactic factsheets), allows to learn the habit to look for information on consumer products. A very valuable habit with a view to a conscious consumption that we are going to treat in unit 5.

The **didactic factsheets R 2-3** are focused on the topic of the fishing economy (fishing and aquaculture) in the world, with the purpose to define its current status.

Hence, the students are asked to perform some researches intended to identify some main countries "stakeholders" in the fishing market, by specifying if they are exporting or importing countries (of fishing and aquaculture products). In parallel to the protagonist nations of this market, we are going to focus the attention also on the areas of origin of the fish caught (fishing areas). The

information found by the students can be commented and discussed in the classroom through the realization of drawings and maps (or graphics and summary tables for older students).

Hence, this research and comparison work allows to put into relation the economic aspect with the environmental one and think about how much the world population, and thus the world economy, depends on the exploitation of a relatively limited number of fishing areas and accordingly of fishingstocks.

Conversely, the **didactic factsheet E 4** is focused on the aspect more related to the trade in fishingresources.

To this end, the student is asked to reorganize in a logical way the various passages through which the fish caught shall travel in its journey from sea to plate. In particular, two cases are proposed: in the first one a path of a fish coming from China shall be retraced, in the second one the path of a fish caught in Liguria. This allows to learn what “chain” means and to think about the effects that the “distance” of the resource has on the product (in terms of quality and price) and on the environment (emissions of carbon dioxide).

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The **didactic factsheet E 5** recalls the concepts of economy of the fishingmarket covered by the didactic factsheet 2, to re-elaborate them and provide their graphic representation through the realization of a geographic map that represents, on the continents, the exporting and importing nations of fishingproducts and, on the oceans, the geographical areas delimiting the various fishing areas.

Finally, in the inspection activity (**didactic factsheet V 6**), every student is invited to make a research on a country of their choice among those identified in order to have, generally, a full picture examined in depth of the economics of fisheries.

In order to succeed fully on this aim, the teacher is suggested to invite the students to choose different countries on which make the research.

The activities of this unit offer, besides the learning of the topic treated, the opportunity to apply and examine in depth the knowledge acquired within the geographical context and to elaborate and propose everything treated in a personal way.

## INSERT 1

### “ABOUT THE FISHING INDUSTRY”

*For the purpose to deal with the commercial and economic aspect related to the fishing production, we deem it appropriate to indicate here below some information and data in general that may help and provide some sparks to deal with this unit. In particular, the aspects concerning sales and pricing processes are treated, and a synthesis on the current situation of the world fishing economy is presented.*

#### **The sales process**

After the fishing activity ends, in the same phase in the sea, the activity of sorting the edible products, washing, selection of the product by size or species, packaging in cases, freezing, refrigeration and storage in cold rooms on board starts. With the return to the port and the unloading of cases, the phases on the ground, to put the product in the fishing market and/or in the processing facility starts. All these operations shall be carried out quickly and shall guarantee excellent quality parameters. Prompt shall be also the delivery of the product to the market, where usually the process of first marketing and, thus, the pricing process, starts. Also this process shall be quick, in order to avoid conditions of useless stationing of the product that may compromise its freshness and, thus, the right quotation.

Returning to the unloading operations, it is necessary to underline that they are carried out in ports other than those where the market in which the product shall be delivered is located; in this case the market is achieved by ground with trucks properly equipped for the conservation at cold temperatures.

In most of the states of the European Union the fresh fish is sold to the production or at auction in port markets, which shall ensure a set of operations intended to ensure that the sale occurs in accordance with the regulations in force.

*The wholesale fishing market can be defined as an ensemble of organized services, of public interest, tending to a rational marketing and a quick sorting of products at the lower cost possible. The essential functions that a market shall be able to guarantee are:*

- a balanced, rational and transparent pricing process, hence a commercial guarantee;*
- the protection of production through an efficient process of appreciation of its products;*
- the speed and dynamism in sales operations, in relation to the characteristics of products and their easy perishability;*

*- the concentration of two variables, demand and offer, to guarantee a real quotation of price;*  
*- the hygiene and healthcare guarantees.*  
*Hence, the fishingmarket represents an important infrastructure in the process of marketing and distribution of fishing products; an essential ring of the commercial chain starting from the producer to arrive at the end user.*

From the typological point of view, three essential categories can be identified in which the wholesale fishingmarkets are classified:

- production or origin markets;
- mixed markets;
- consumer markets.

Within these categories, further subclasses can be identified; in that behalf we can talk about redistribution or sorting markets, terminal markets, mixed markets of production and consumption, of production and redistribution, of consumption and redistribution. Anyway, the typological definition is given by the function covered by the market in the sales process.

In the production markets sales through public auction is compulsory, because the production product delivered shall find its price at its first marketing. Conversely in the consumer markets there is a direct negotiation between vendor and buyer, since they are products that have already had their quotation. Finally, in the mixed market, usually both systems are used depending on the product on sale.

### **The pricing process**

We have already said above how the fishingproduct is characterized by a quick perishability; hence, it follows that it has a very short commercial life, which contributes to weaken the bargaining power of the producer. In other words, the time of permanence of the product, from the time of fishing to that in which it is introduced to the consumption through the commercial and distribution process shall be as short as possible.

Actually, some of these factors affect more the product quality and its quality classification, conversely others are elements that along with quality influence the pricing dynamics.

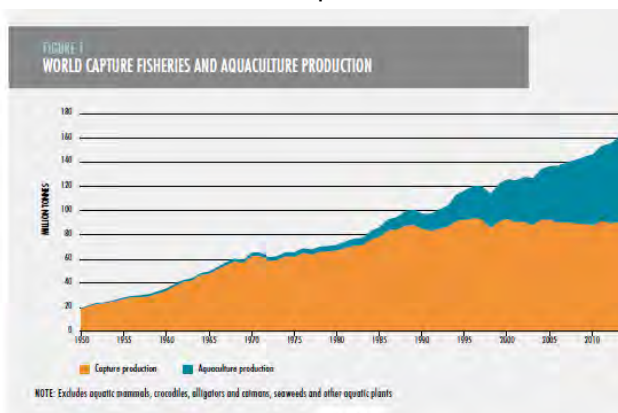
*In brief, we can describe the factors that affect the fishingproduct pricing processes as follows:*

- offer given by the quantity unloaded and delivered to the market;*
- demand given by the number of purchasing operators present in the market structure, by their propension to purchase and by the earning capacity of the consumption area;*
- efficiency, speed and rationality of market operations and sales processes;*
- sales hours and days;*
- seasonality;*
- fishingspecies, size, dimension and conservation status;*
- food habits and health expectations of consumers*

*As a consequence, it shall be considered that one fishingspecies can, depending on the market and on the consumption area, assume a different quality classification and, thus, different prices.*

### The fishingproduction at world level (ISMEA Elaboration on FAO data 2008)

In 2016, according to the last data elaborated by Fao (FAO SOFIA, 2018), global fish production peaked at about 171 million tonnes in 2016, with aquaculture representing 47 percent of the total and 53 percent if non-food uses (including reduction to fishmeal and fish oil) are excluded. With capture fishery production relatively static since the late 1980s, aquaculture has been responsible for the continuing impressive growth in the supply of fish for human consumption



Global total capture fisheries production, as derived from the FAO capture database, was 90.9 million tonnes in 2016, a small decrease in comparison to the two previous years. World total marine catch was 81.2 million tonnes in 2015 and 79.3 million tonnes in 2016.

Catches of anchoveta (*Engraulis ringens*) by Peru and Chile, which are often substantial yet highly variable because of the influence of El Niño, accounted for 1.1 million tonnes of this decrease

Besides the over-exploitation of fishingstocks, in particular of demersal fishes, the drop in quantities caught had been affected also by the fuel cost strong fluctuations, whose increase would seem to have stopped the fishing activity mainly on the high seas.

As concerns the main fishing stakeholders worldwide, decreasing catches affected 64 percent of the 25 top producer countries, but only 37 percent of the remaining 170 countries. Total marine catches by China, by far the world's top producer, were stable in 2016, but the inclusion of a progressive catch reduction policy in the national Thirteenth Five-Year Plan for 2016–2020 is expected to result in significant decreases in coming years, with a predicted reduction of more than 5 million tonnes by 2020.

As in 2014, Alaska pollock (*Theragra chalcogramma*) again surpassed anchoveta as the top species in 2016, with the highest catches since 1998. However, preliminary data for 2017 showed a significant recovery of anchoveta catches. Skipjack tuna (*Katsuwonus pelamis*) ranked third for the seventh consecutive year. All the most valuable species groups with significant production – lobsters, gastropods, crabs and shrimps, with an estimated average value by group of USD 8 800 to USD 3 800 per tonne – marked a new catch record in 2016.

The contribution of aquaculture to the global production of capture fisheries and aquaculture combined has risen continuously, reaching 46.8 percent in 2016, up from 25.7 percent in 2000. With 5.8 percent annual growth rate during the period 2001–2016, aquaculture continues to grow faster than other major food production sectors, but it no longer enjoys the high annual growth rates experienced in the 1980s and 1990s.

The most recent official statistics indicate that 59.6 million people were engaged in the primary sector of capture fisheries and aquaculture in 2016, with 19.3 million people engaged in aquaculture and 40.3 million people engaged in fisheries. The proportion of

those employed in capture fisheries decreased from 83 percent in 1990 to 68 percent in 2016, while the proportion of those employed in aquaculture correspondingly increased from 17 to 32 percent.



# Didactic factsheet S 1

## “FROM SEA TO PLATE”

With the help of your family, find the following information. At your home look for all the “fish” based products (both fresh, and quick-frozen, canned, prepared, etc.).



List them here below and for each one specify origin and price.

Product	Origin	Price/kg
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....



How many times per week do you eat...?

Fresh “fish” .....

Canned “fish” .....

Quick-frozen “fish” .....

“Fish” preparations .....



How much does your family spend in one week to buy the following foods?

Food	money/week	Food	money/week	Food	money/week
Pasta/ Rice		Pasta/ Rice		Pasta/ Rice	
Bread		Bread		Bread	
other		Other		Other	

Where does your family buy the fish more often?



.....





# Didactic factsheet R 2 “THE WORLD OF FISHING AND AQUACULTURE”

Look for the following information on economics of fisheries and aquaculture.



Write the definition of “import” and “export”

Import:.....

.....

Export:.....

.....



Specify, for each listed continent, the Countries living of fishing and aquaculture.

Europe:.....

America:.....

Asia:.....

Africa:.....

Oceania:.....



Among them which are the main Countries exporting fish caught and farmed?

Exporters of fish caught

Exporters of fish farmed

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Conversely, which are the main Countries importing fish?

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# Didactic factsheet R 3 "FISHERIES"

Look for the most important fishing areas in the world and, for each of them, specify the most caught fishing resources.

**Mediterranean Sea**

Anchovy

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**North Western  
Atlantic Ocean**

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**South Western  
Atlantic Ocean**

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**South Eastern  
Pacific Ocean**

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**Central Western  
Pacific Ocean**

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**Eastern Indian  
Ocean**

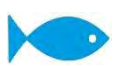
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# Didactic factsheet E 4

## “THE JOURNEY OF FISH”

From sea to plate, the “fish” follows a specific path. Reorganize correctly the following stages of the journey that the “fish” shall do to arrive at our plates. Solve the 2 cases indicated:



1) A fish coming from the Eastern Pacific Ocean (e.g. from China)

B, .....



2) A fish coming from the Mediterranean Sea (e.g. from Italy)

H, .....



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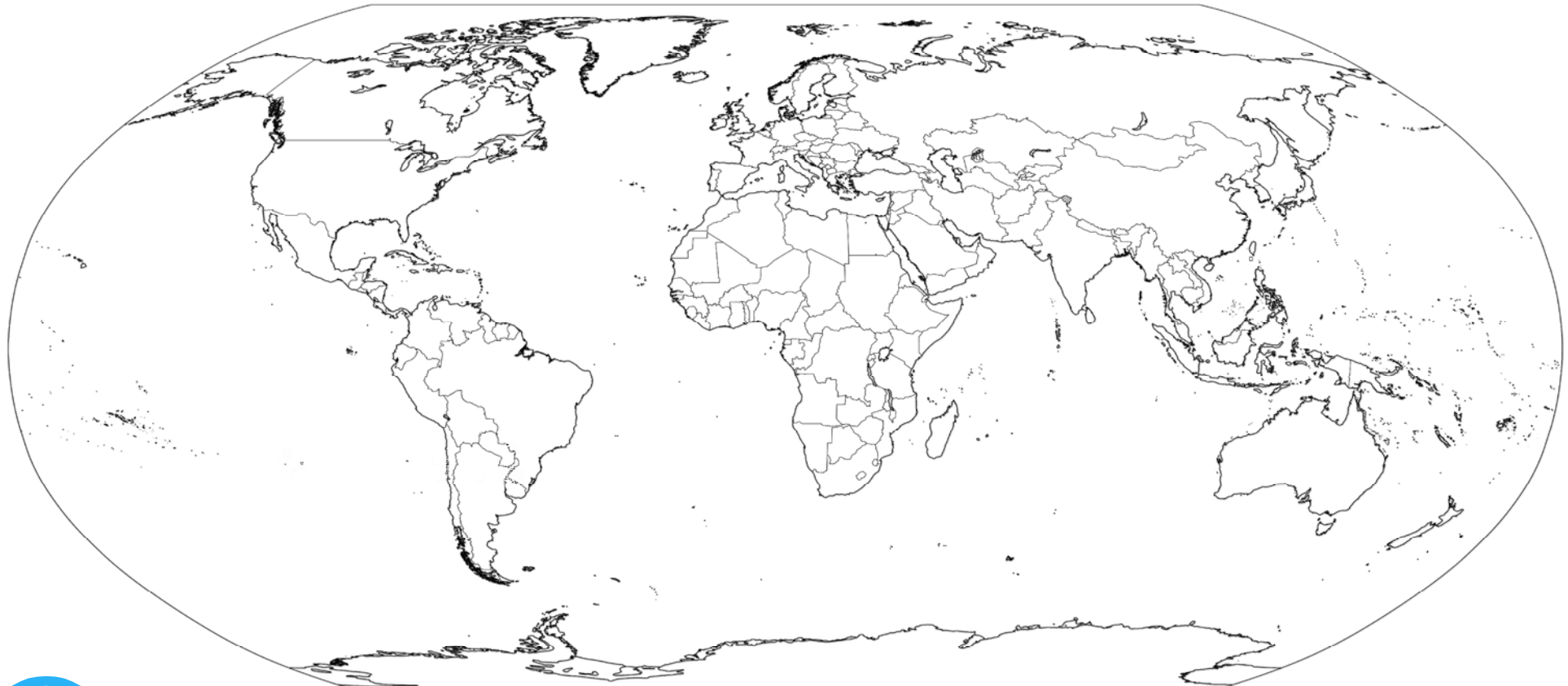
**Note: some stages can repeat or can be skipped**



# Didactic factsheet E 5

## “THE ECONOMIC MAP OF FISH”

- Now draw a map where you highlight:
- in the mainland, the main Countries importing and exporting “fish”
  - in the oceans, the major fishing areas



**Major fishing areas**



**Main importing Countries**

- choose a colour -



**Main Exporting Countries**

- choose a colour -

**Compare your map with that of your mates.**



# Didactic factsheet V 6 "DISCOVERING A COUNTRY"

Choose a Country of the world (among those already analysed in the didactic factsheet R 2) and make a research on its economy, with particular attention to the fishing and aquaculture activities.

Discover which are the most caught, farmed, imported and exported resources. Finally write a report on your discoveries and fill in the boxes as requested.

**Country** \_\_\_\_\_

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Draw a map of the Country you have chosen and specify the most important fishing ports.

**Fishing port**

Draw one of the most important resources caught in the Country chosen.

Compare your report with that of your mates.