

## INTRODUCTION

The transnational cooperation project ***“NASSARIUS – MEDITERRANEAN RESOURCE MANAGEMENT AND ADDING VALUE”*** carried out by the FLAG COSTA dell'EMILIA-ROMAGNA and the GALPA PAYS VIDOURLE CAMARGUE, aims at exchanging knowledge and good practises on fishing activities and processing and marketing of fish products from the Mediterranean Sea.



Thanks to the cooperation between the two FLAGs, French and Italian actors of the fishing and muscle culture sectors will exchange information and ideas, while acquiring new competences and further adapting their activities to current environmental and markets trends.

This cooperation project focuses on the sustainable exploitation of resources and the common challenges that can increase product value, in order to promote local economies and guarantee the income of fishermen in Le Grau-du-Roi and in Emilia – Romagna Region.



## Guidelines for the management and valorisation of resources in the Mediterranean Sea

### FOCUS on NASSARIUS MUTABILIS

#### Background

The exchange of knowledge and good practices on the fishing of mutable nassa (scientific name *Nassarius mutabilis*) made it possible to have an accurate picture of the current situation, identifying problems as well as possible solutions aimed at safeguarding the resources and boosting productivity.

Small-scale, traditional fishing practised with the so-called “standing gear” i.e. fixed fishing gear, is quite common in Emilia Romagna, whereas in France this activity is more recent. Initially mutable nassa was fished from small boats sailing close to the shore. Then fishermen started to use more powerful engines for their boats, which were also gradually increasing in size, until they exceeded 12 m, the threshold length for boats foreseen by EU regulations for artisanal fishing. This fishing practice is particularly attractive for young fishermen since it allows a lifestyle that is more similar to that of other jobs practiced on the land, although it is particularly burdensome in terms of equipment and fishing practises.

In recent years, the depletion of resources encouraged fishermen to look for more sustainable solutions that could safeguard local resources and take new market opportunities into account.



## Biology

- Protandry hermaphroditism : A sex-change appears for by-19 mm-sized individuals Its annual abundance is by far variable.
- Growth rate : 22mm size is reached after 2 years ; after 19mm, growth is slower.
- Mobility : Species have a low propensity to travel long distances
- Annual abundance is variable.

More details here :  
<http://pays-vidourlecamargue.fr/docs/FONDS%20EUR OPEENS/FEAMP>

## Management measures and professionals opinion







### **Guidelines :**

Scientific research identified the need to study the growth and reproduction patterns of *Nassarius Mutabilis*, in order to draw up and implement a functioning resource management plan. Research studies in Italy were carried out in close cooperation with fishermen and turned out to be extremely useful also to producers, since they are fundamental for the sustainability of resources. Setting a minimum landing size allows to land only individuals that have already reached their sexual maturity, thus ensuring the reproduction of the species.

However, a reduction in the minimum landing size could have a negative impact on fishing activities and productivity. Moreover, there is the need to identify restocking areas where fishing is forbidden, in order to allow for the renewal of the population and to potentially seed the younger specimens caught. It would be advisable to organise information and promotional marketing campaigns for the *nassarius reticulatus*, another gasteropod mollusc similar to the **nassarius mutabilis**, which is very common in the Adriatic and Mediterranean Sea.

Finally, processing activities could also result in excellent marketing opportunities for local fishermen. The Italian experience shows that processing industries buying this product during periods of superabundant offer make it possible for local fishermen to count on acceptable incomes.

## *Development*

The most **challenging step** is purification step, because the snails spit lots of mucus out after caught.



The better process solution seem to be a **pre-cooked mollusque and sauce jar**.

For further information on the Nassarius project and its results go to <http://www.flag-costaemiliaromagna.it/progetti/progetto-nassarius>

## Guidelines for the management and valorisation of the resources of the Mediterranean Sea

**Objective: STRATEGIC MARKETING PLAN**

**Action: BLUEFISH TRADE ON FOREIGN MARKETS**

**Issues:** The sea area of the FLAG Costa Emilia-Romagna is covered by Recommendation CGPM/40/2016/3, which establishes emergency measures to bring the exploitation of small pelagic stocks in the Adriatic Sea at MSY level by 2020. The measures adopted after the coming into force of this Recommendation are giving significant results in term of stocks. However, the demand for the landed products is often insufficient, and as a result the income of fishing enterprises is inadequate.



*Picture1 – Midwater pair trawl (bluefish)*

The situation of European pilchard stocks in the Mediterranean along the coast of the LAG Le Grau du Roi is similar, so much so that a ban has been imposed on European pilchard fishing for over two years; which in turn lead to a shortage of European pilchard on the local market. On the other hand, the quantity of mackerel caught in this FLAG area is substantial and the price of this product is considerably lower (especially in the summer) than that of the FLAG Costa Emilia-Romagna, where mackerel is scarce.



*Picture 2 – European Pilchard (scientific name Sardina pilchardus)*

**Guidelines:** Commercial exchange between fishing enterprises and markets of the two FLAGS, so that French operators can buy European Pilchard and anchovies from the Adriatic Sea, while the surplus of mackerel of the FLAG Le Grau du Roi can be absorbed by the market of Emilia Romagna. These trade synergies can lead to the alignment of prices at a level higher than the current one, and consequently improve the profitability for fishing enterprises.



*Picture 3 – Fish wholesale market in Le Grau di Roi (FR)*

For further information on the Nassarius project and its results go to <http://www.flag-costaemiliaromagna.it/progetti/progetto-nassarius>



## Guidelines for the management and valorisation of the resources of the Mediterranean Sea

**Objective: MARKETING AND VALORISATION OF LOCAL FISH PRODUCTS**

**Action: PROMOTION OF LESS-KNOWN AND LESS-VALUED FISH SPECIES**

**Issues:** The need to promote less-valued or less-known fish species (such as mullets, white octopus, Mediterranean hoarse mackerel, bluefish, Mediterranean ray, strepie, bogue, twaite shad, etc.) is particularly strong in fishermen's communities. The substantial quantities caught and the low commercial value of this fish make it imperative to promote consumption.



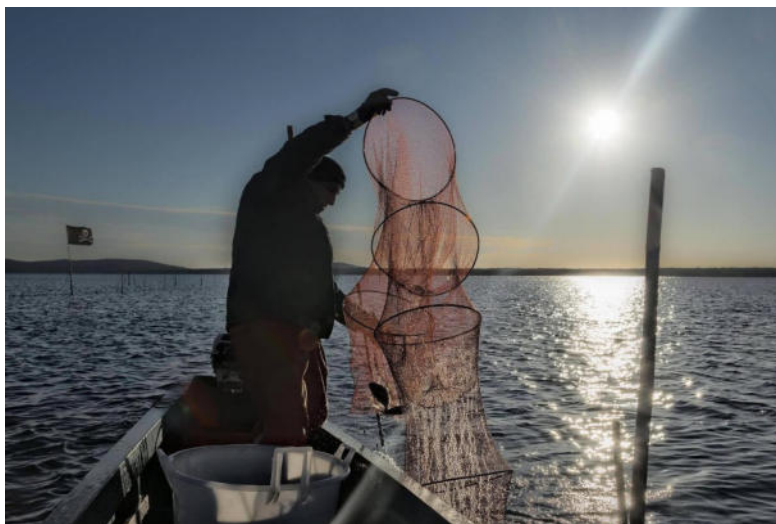
*Left: Bluefish (scientific name Pomatomus saltatrix) right Mediterranean hoarse mackerel (scientific name Trachurus trachurus)*

The promotion of less-valued fish caught in our sea has a cultural value, since it advertises its great qualities and overcome culinary myths that have always disregarded these fish species. By promoting the consumption, both at home and at the restaurant, of long forgotten fish products, which used to be at the hart of a healthy and tasty diet for decades, means acknowledging their value and increase the income of local fishermen.

The re-discovery of this long-forgotten fish is an integral part of the repositioning strategy of this sector, appealing to the active role that consumers can and must play alongside fishermen in improving the sustainability of fishing activities. Consumers' education is fundamental in order to redirect market demand and counter the exploitation of highly common products in favour of local fish species, while improving the income of fishing enterprises.

The higher consumption of less-valued fish would also reduce imports and save consumers' money, while maintaining the same level of taste and quality. Therefore consumers would be on the same side as fishermen in favour of environmental-friendly fishing activities, while fishermen and less-known fish species would be on the same side as the stakeholders of local development, which can profit from the traditional crafts and skills, as well as diversified activities (fishing tourism among others) of the local, rich historical and cultural heritage.





*Traditional set net fishing*

These fish products have all the morphological (size, flesh consistency, etc.) and nutritional characteristics needed for commercialization, but are considered less palatable because of ancient popular beliefs, although they have always been the core ingredient of the diet of fishing communities. A strong demand for surplus species or less attractive species usually discarded would solve any availability problem and would guarantee fresh local products to consumers. The fundamental notion is that local products are tasty and palatable. Besides, consumers can buy less-valued fish on a daily basis, since the prices are affordable, but need to learn about the quality of these products and the different preparation opportunities that can enhance their taste.

**Guidelines:** The promotion of less-valued fish calls for targeted actions to inform and educate consumers and new generations, as well as the HORECA sector (hotels, restaurants catering services). Targeted promotional campaigns focussing exclusively on less-known species, advertising their organoleptic characteristics and nutritional value, while recovering culinary traditions kept by fishermen.



*Buffet in Le Grau du Roi (FR) with less-known and less-valued fish dishes, by Olivier Bassalade  
"Chez le pecheur"*

Possible actions are:

- a) actions for the reinforcement of distribution networks among local actors (fishermen, restaurants, catering services, etc.);
- b) Fishing and culinary events to promote less-known fish species, with particular reference to the traditional fishermen's recipes;
- c) "From the net to the table": information and promotion campaigns to encourage the consumption of local fish products (menu based on local fish dishes, traceability of the fish products on restaurant and catering menus).



*Festival del Mare – Cooking show at the squid and mantis prawn festival in Porto Garibaldi (IT)*

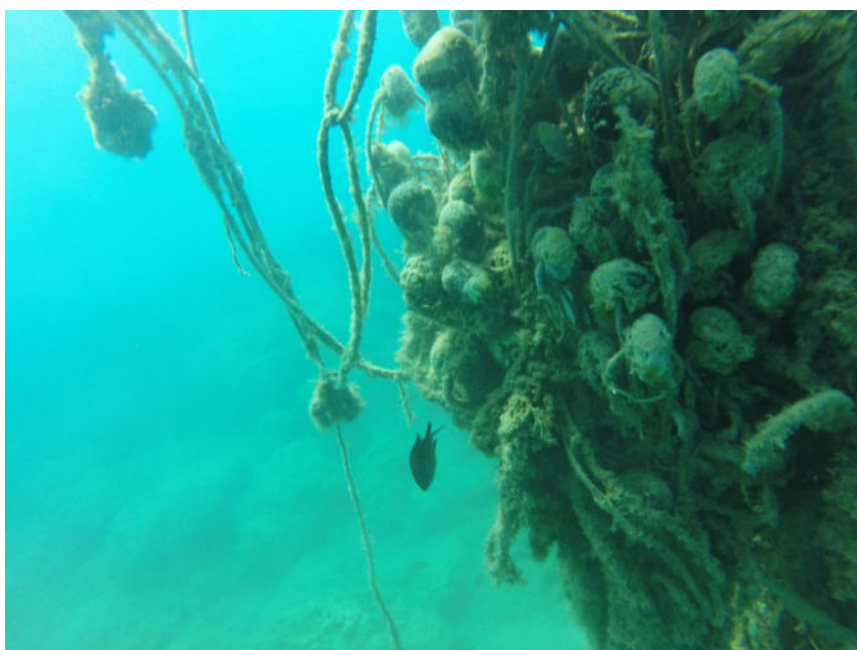
For more information on the Nassarius project and its results go to  
<http://www.flag-costaemiliaromagna.it/progetti/progetto-nassarius>

### Objective: REDUCING THE DEPLETION OF RESOURCES

#### ACTION: MANAGEMENT AND BEHAVIOURAL PRACTICES TO COUNTER GHOST FISHING

**Issues:** In the framework of the cooperation between Italian and French fishermen stakeholders showed their strong interest in the sustainability of fishing activities and the safeguard of the marine environment. On many occasions stakeholders expressed their concern for the presence of waste in the sea. Abandoned, lost or discarded fishing gear (ALDFG) accounts for a large part of the waste present in the sea and is an increasingly serious threat for marine ecosystems. The levels of ALDFG in the sea have increased substantially over the last decade as a consequence of the increase in fishing activities and the irresponsible behaviour of some operators, as well as because of the large use of long-lasting synthetic materials. Currently; ALDFG account for one fifth of global waste, i.e. hundreds of thousands of tons per year.

ALDFG is a major source of f-dangerous litter because it remains in the sea for many years and often continues to catch and kill fish even though unattended, generating the phenomenon called ghost fishing.



*A net abandoned on the bottom of the sea – ghost fishing*

The European Commission, in its effort to counter IUU fishing, issued a Regulation that envisages that fishing gear is marked with the identification code of the vessel. The purpose is to prevent vessels from abandoning their gear in the sea by making them detectable and punishable. These repressive measures should be accompanied by pre-emptive measures based on the use of technology.

#### **Guidelines:**

- 1) Responsible behaviour: Drawing up a code of conduct should to be signed by the operators working in the FLAG area, whereby they commit themselves to a responsible ethic and professional behaviour in order to prevent them from abandoning their nets or other fishing gear in the sea. This would contribute to the sustainability of the marine resources.

- 2) New technologies: awareness raising actions for the use of new technology.
- 3) New identification technologies currently available make it possible to monitor and recover lost gear.

For instance, coded wire tags – CWTs were tested as tools to reduce the risks for turtles, mammals and other big animals are trapped in fishing nets. These minuscule CWTs are laser engraved in fishing nets, making them easy to track down with special sensors without affecting their catching capacity.

**Solar energy satellite buoys** are used in industrial operations with purse seine vessels and allow for unlimited coverage and long operational times. Other sensors, such as **GPS receivers**, can be attached to a radio buoy and used to transmit data.

Acoustic technology on the other hand is based on the transmission of sounds through seawater and can track down lost fishing gear. For instance, **active pingers immersed in the water** emit sounds at specific frequencies, whereas passive **sonar reflectors** make sounds bounce back towards their source.

Finally, lights, which have always been an integral part of night signal systems, are now low energy LEDs with solar panels that enhance their scope.



Satellite buoy

For further information on the Nassarius project and its results go to <http://www.flag-costaemiliaromagna.it/progetti/progetto-nassarius>



## Guidelines for the management and valorisation of the resources of the Mediterranean Sea

**Objective: RESOURCE MANAGEMENT THROUGH THE SAFEGUAR OF THE MARINE ENVIRONMENT**  
**Action: COLLECTION OF WASTE OIL FROM VESSELS IN PORTS**

**Issues:** Responsible and sustainable fishing calls for actions aimed at safeguarding the marine environment. The cooperation between the two FLAGS identified the lack of standard procedures for the disposal of waste oil both in the fishing port of Le Grau du Roi and in some of the ports of the Flag Costa Emilia-Romagna. This is a serious issue since fishing vessels discharge big quantities of waste oil every month. In some ports, like Porto Garibaldi, there are dedicated areas for the disposal of oil drums. However the drums are not regularly collected and often leak oil into the ground.



*Waste oil drums a port*

**Guidelines:** It is of paramount importance that the FLAGS adopt public utility actions for the creation of dedicated areas for the disposal of waste oil and draw up procedures for the landing, collection and disposal of waste oil. The FLAGS should identify specialised companies that could sign a memorandum of understanding and be entrusted with the disposal service. These actions should also involve local port authorities, who can support this service with the relevant ordinance.



*Example of metal gazebo for the collection of waste oil in ports.*

For more information on the Nassarius project and its results go to:  
<http://www.flag-costaemiliaromagna.it/progetti/progetto-nassarius>