

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

Priority Axis: Blue innovation

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

## D5.1.2 Best practice guide

WP5: Building up value chain and marketing of Adriatic eco-innovative fishery products / A5.1 Market opportunities for value chain enhancement

JUNE / 2020

LP – University of Bologna, March 2020

Contribution: PP1,PP3,PP4,PP6,PP8,PP9,PP10,PP11,PP12,PP13

Final  
File for web

<b>ORDER</b>	<b>UNIVERSITY OF BOLOGNA</b>	
<b>TYPE OF DOCUMENT</b>	<b>D5.1.2: Best practice guide</b>	
<b>DELIVERY PERIOD</b>	M18	
<b>REPORT EVALUATION</b>	Prof. Luca Camanzi	
<b>MEMBERS OF EXPERT TEAM</b>	Luca Camanzi, Luca Mulazzani, Giulio Malorgio, Andrea Forgione	University of Bologna
	Petra Lukić	IZOR
	Marija Cerjak, Damir Kovačić	Agrarno Savjetovanje d.o.o.
<b>CONSULTATION</b>	Simone D'Acunto	CESTHA
	Mauro Vio	Bivalvia
	Ivan Matijašević	Omega 3
<b>PRODUCTION</b>	University of Bologna	

**DISCLAIMER:**

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

## TABLE OF CONTENTS

1	INTRODUCTION .....	4
2	THE CLAM CASE STUDY .....	6
2.1	PO Bivalvia VEneto .....	6
2.2	The marche situation .....	10
3	ECOPESCE, NEW PROCESSING SOLUTIONS .....	13
3.1	Structure and values .....	13
3.2	Organization and Trade channels .....	14
3.3	the valorization of the product .....	15
4	THE WILD MUSSEL CASE.....	18
4.1	The productive system.....	18
4.2	Area of collection, production and classification of the product .....	18
4.3	Supply chain structure .....	20
4.4	Supply chain potential .....	20
5	ORAPESCE, HOME DELIVERY SOLUTIONS .....	22
5.1	Corporate Mission.....	22
5.2	Corporate structure .....	22
5.3	Business model - Road Map.....	22
5.4	Supply – Availability – Pricing .....	22
5.5	Prices (as on 27/5/20).....	26
5.6	Logistic network.....	27
5.7	Payment methods and feedback system.....	29
5.8	Cleaning operations .....	30
5.9	Brief Sector Analysis.....	30
5.10	Competitors .....	31
	<b>5.10.1 CORTILIA.IT .....</b>	<b>31</b>

5.10.2	EASYCOOP.COM .....	32
5.10.3	ILOVEOSTRICA.IT .....	33
5.10.4	AMAZON FRESH .....	35
	<b>Keywords:</b> Amazon, one-day-delivery, local producers .....	35
5.11	Orapesce SWOT analysis.....	36
6	FISHING COOPERATIVE OMEGA 3, CREATING VALUE-ADDED PRODUCTS THROUGH INVESTMENT IN TECHNOLOGY AND KNOWLEDGE .....	37
6.1	About the co-operative.....	37
6.2	Description of innovations.....	39
7	MIRNA D.D., THE SUCCESSFUL CONSOLIDATION OF CANNED FISH FACTORY AFTER TAKEOVER.....	44
7.1	About Mirna d.d.....	44
7.2	Business consolidation.....	45
7.3	Conclusion.....	49

## 1 INTRODUCTION

In this deliverable, some best practices related to the production, processing and trade of Adriatic fish products are explored. The report is divided in six chapters, the first four focused on Italian cases and the latest two on Croatian cases.

- 1) Chapter two presents the case of some enterprises dealing with the production, processing and trade of clams in Veneto and Marche regions. The case of PO Bivalvia in Veneto region is considered, a cooperative of fishers, recognized as PO, that has been able to gather most of the fishers of the region and that directly collaborates with the regional Co.Ge.Vo for the management of the resource. All the production of the members is traded by the PO that has invested for the creation of plants for processing, packaging and freezing. Thanks to this technology, the PO has been able to differentiate the products from those of the competitors, increasing value added and finding new market opportunities. Finally, PO Bivalvia has been able to obtain the first MSC certification of the entire Mediterranean Sea. The Marche region case study shows that even in this area the collaboration between POs and Co.Ge.Vo. is important for the correct management of the resource. Furthermore, in this region we find two of the largest Italian wholesale companies for clams and other bivalves. This is a very specialized sector, and these companies are now able to valorize the Adriatic production trading it in the entire nation and abroad, especially to Spain.
- 2) Chapter three deals with a small firm in Cesenatico that has been able, in very few years, to differentiate its business from the trade of fresh fish to the processing of an outstanding high number of local species and different product concepts. This firm is now able to use secondary under-valorized species, including small sizes, with a reduced production of waste. New trade channels are now opening and the firm activity is increasing.
- 3) Chapter four consider the case of two small cooperatives which collect wild mussels from the gas extraction plants in the Adriatic Sea. This is a special case study, because it deals with a small group of fishers that have the total control on a rare resource and should be able to take advantage of this monopoly. Unfortunately, their product is not easy to be maintained separated from classic farmed mussels, thus the cooperatives are now beginning a process for certification and labelling.

- 4) Chapter five considers an enterprise that, in few years, has become the leader in the home delivery of fresh fish. The entire production come from a few Adriatic ports and it is traded in the entire country, especially in the Northern regions. This business model could be used as reference for developing similar trade circuits in other regions
- 5) Chapter six presents the best practice of PO Omega3, which is able to gather a large number of small pelagic fishers, sell together the production (in Croatia and abroad, for a large variety of customers) and partially process (freezing) it. The PO is now elaborating strategies for more valorizing processing possibilities. This case study is particularly interesting since it shows how fishers can really work cooperatively, something that in Italy, for the small pelagic sector, has never occurred.
- 6) Chapter seven concludes the report with the case of a historical processing enterprise in Croatia which in this recent past has invested in new and old brands, in order to reach different consumers' segments with targeted products (more or less expensive) that are sold in a large number of countries.

## 2 THE CLAM CASE STUDY

As explained in the previous deliverable (D5.1.1), clam fishery is characterized by the existence of management consortia (Consorzio Gestione Molluschi/Vongole) established in 1996 to allow the co-management of this benthonic marine resource. These authorities, gathering all the clam fishers of a specific area, may adopt several management tools and, in the end, set the maximum quantity of clams that can sustainably be taken from the sea, on yearly and monthly base. Although the consortia could, in theory, work as a Producers Organization (PO), this has not happened and in some cases, beside the consortium, we find a local PO which area of competence is, less or more, superimposable to the area of one consortium or, sometimes, more than one consortium. Thus, consortia are responsible for the sustainable management of the resource, and gather together all the clam fishers of the region. On the other hand, POs have to establish marketing plans in order to harmonize supply with demand. Collaboration between POs and consortia is key, since in this way marketing plans established by POs can be made restrictive to everybody, even to non-members, thanks to the landing rules established by the consortia.

In the following two chapters, the organization of Pos and wholesale actors is described, in the case of Veneto and Marche regions respectively.

### 2.1 PO BIVALVIA VENETO

#### **Organization**

PO Bivalvia Veneto is a “Società cooperativa” with headquarter in Caorle (VE). Bivalvia collaborates closely with the two Co.Ge.Vo.s (Consortium for the Management and Protection of Fishing of Bivalve Molluscs) of Venice and Chioggia located throughout the Veneto Region. The two consortia together gather a total of 163 companies representing the totality of the Venetian vessels dedicated to fishery of bivalve molluscs. 43 of these vessels catch the smooth clam (*Callista chione*) and are associated to the PO Fasolari, while the remaining 120 vessels catch venus clam. The 75% of these vessels (around 100) are associated to PO Bivalvia.

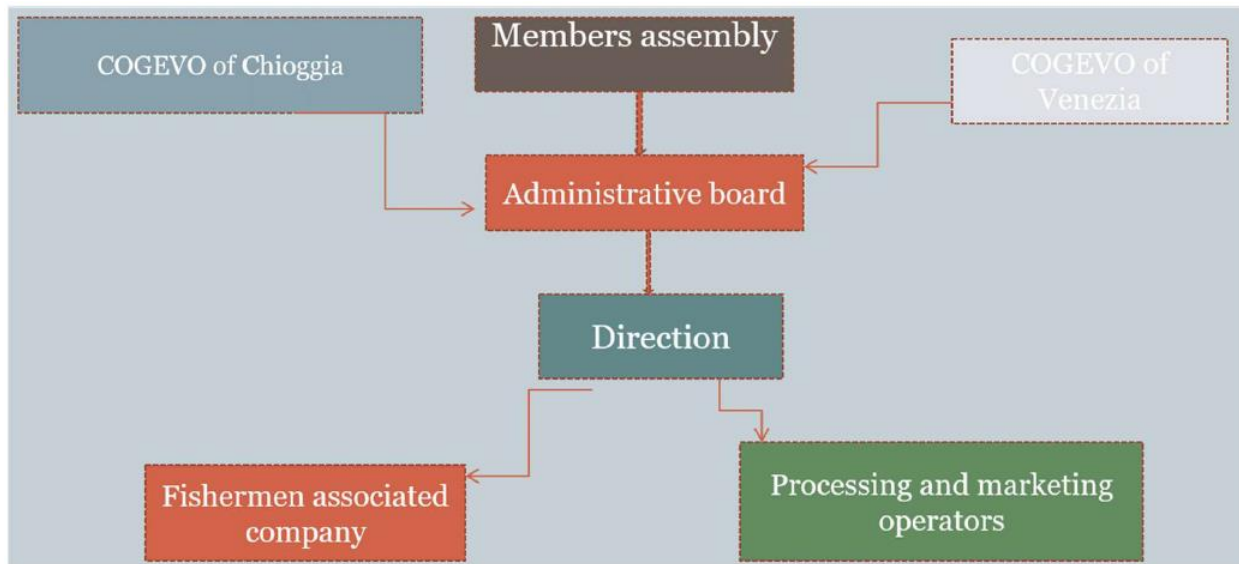


Figure 1. Organogram of PO Bivalvia

The PO was born in 2006 from the awareness that the CO.GE.VO had not the possibilities to develop a marketing and trade strategy. The first strategical choice was to develop physical structures on the shore for the storage and processing of clams. At the same time, fishers had to choose between fishing venus clams or smooth clams (this choice can be changed every three years). Members must provide the entire production to the PO, which will directly sell and invoice it, gathering the production of each member. The latest strategic choice of the PO was the application for being certified by MSC, which was obtained in 2018.

At the base of PO's strength in the production process is the resources management plan, conducted in collaboration with Co.Ge.Vo.s. The adoption of a short market chain allows containing and reducing the costs and offering high quality products. The production process is fast and efficient; the product is processed quickly after the delivery from the fishing vessels.

The choice to sell the production all together, through the PO structure, eliminates competition and tension among fishers. A more peaceful and collaborative environment is created inside the community. Every fisher must respect specific quotas and calendars of production. When one



fisher has problems to go at sea (e.g. the vessel is under maintenance), solidarity ways to share and exchange quotas are established.

## **Production**

The average yearly landings of the venus clam between 2014 and 2018 are around four thousand tons. The commercial landings of the venus clam do not have a real seasonality because they are based on market orders received daily; therefore, the catches have daily adjustments. Generally, higher market orders are observed in the summer period and in December, since in those periods there are the touristic season and other holidays. The PO Bivalvia warns preventively the customers of the imminent interruption of fishing activities, and in those periods buyers order a larger amount of product to address the lack of product for the next months.

Fishing vessels unload the bags of clams to the processing facilities of PO Bivalvia located in Caorle (VE) or Chioggia (VE). There, the processing starts by unloading the bags into a hopper, after which the clams go through a sieve and are measured and carefully selected. The first phase is carried by a machine, while the second selection procedure is conducted manually by an employee. Next, the clams are placed into large containers with a flowing salty water for purification and de-gritting. Clams can also be frozen and stored for further use. This strategy allows to rationally use and preserve the resource.

PO Bivalvia, cooperating with Co.Ge.Vo., is directly involved in several initiatives for the sustainable exploitation of the clams, such as: i) seeding in nursery areas, ii) restocking, iii) catch control, iv) rotation of exploitation areas, v) temporary closure of specific areas for reproduction, nursery or recovery purposes.

## **Market analysis**

PO Bivalvia sells exclusively fresh and frozen venus clams (*C. gallina*), while PO Fasolari sells also the smooth clams (*C. chione*). The fresh products are sold to local wholesalers packed in nets of 2, 5, or 10 kilograms. On request, selected larger clams are sold as a premium product.

The clients for the frozen product are the GDO/Retail sector and the Ho.Re.Ca. These products are sold under two different brands and two different packages, 450 and 1000 grams. The

standard brand used for the venus clam (*C. gallina*) is “I PescaOri”, while a brand certified for MSC and BIO is “La Venexiana”.

PO Bivalvia sells certified (i.e. MSC or Organic certification) frozen clams to Bofrost and NaturaSi. The first one is a home delivery supplier of frozen food products (including clams) with its own private label. On the contrary, NaturaSi is a large retailer specialized in organic products; in the latest case, clams are not sold with the private label of the retailer but with “La Venexiana” label.

*[Information omitted for privacy reasons]*

The PO Bivalvia has a 25% of the Italian fresh product market share, and although this is its strength, there is a constant need to adapt to other competitors and the demand-supply of the market. The price is always changing, and it usually stays in a range between 2.80 and 5.90 EUR/kg.

On the other side, there are very few competitors for the frozen product, and therefore PO Bivalvia has a better control of the market quotas. The frozen clams have standard processing and packaging costs that can assure a stable price from 6.00 to 8.00 EUR/kg. The volume of the order is the main factor determining the price, since lower process cost is necessary for larger orders.

*[Information omitted for privacy reasons]*

It may be interesting to notice that clams coming from different regions are judged to have different characteristics in color or taste. For this reason, some customers, especially in the HORECA sector, may appreciate and pay more (or less) for clams coming from different areas, depending on their specific preferences.

### Trade and marketing strategy

At the beginning, when the PO was created, buyers were not satisfied by this organizational innovation, since they had to bargain with a stronger commercial partner. However, they quickly understood that having relations with a solid partner that could assure good quality and constant quantity was very positive under many perspectives. Constant provision, in particular, is key in order to satisfy retailing customers.

Every evening, on the base of ordinations, PO Bivalvia communicate the quantity of clams that is necessary to fish. Thanks to the close relationship with the Co.Ge.Vo., quotas that are decided for the OP members are automatically extended to all Venetian clam fishers, including those that are not members. When, as an effect of bad weather conditions, the amount of clams cannot be provided, catches are proportionally subdivided among customers. Prices are decided in advance. If, at the end of the year, the cooperative has realized profits, these are not returned to the members but are invested in the plant or other communal objectives. Nominal quotas of investments are returned to the members in case they leave the cooperative.

Unfortunately, the interest of Italian large retailers for MSC fresh clam is nil, at the moment. There is not any premium price for this label. On the contrary, Swiss large retailers have already understood the opportunities of this certification. PO Bivalvia hopes that, very soon, things will change in Italy too.

*[Information omitted for privacy reasons]*

Contracts are not used for the fresh product. It is considered an impossible option considering the current characteristics of the market. On the contrary, one-year contracts are normally realized in the case of the frozen product. In this case, price is fixed, while quantities are not established and depend upon consumer demand.

## 2.2 THE MARCHE SITUATION

There are several fishers' POs in Marche region, but none of them is completely committed on clams, as is the case of PO Bivalvia. The PO "Organizzazione di produttori della pesca di Fano, Marotta e Senigallia", which is based in Fano (PU), is registered as a "società consortile". It is mainly represented by clam fishers, but it also includes fishers using other gears (in particular

small-scale fishers). In total, 68 vessels are represented, of which 52 interested in the clam fishery. These clam vessels operate inside two areas controlled by two different Co.Ge.Mo., those of Pesaro and Ancona, respectively. In the first one, the members of the PO members represent the majority of the consortium and may easily control the decision of this institution, while in the second one they are not the majority. As in the case of PO Bivalvia, the PO coordinates with the consortia to define the quantity of clams that have to be caught every day on the base of the orders received by customers.

Contrary to PO Bivalvia, the Fano consortium does not seem particularly interested in sustainability certification. On the contrary, it is trying to develop a PDO label, considering that the geographic characterization may result to be more appealing for the consumer. This characterization could be demonstrated by genetic differences, more than by organoleptic differences that are much more linked to occasional river floods.

In the Marche region, it is possible to find the largest specialized Italian wholesalers of clams (New Copromo and COPEMO, respectively based in Fano and Ancona). COPEMO is a cooperative of fishers, while New Copromo, that was originally born as a cooperative, is a private enterprise with fishers among the owners.

*[Information omitted for privacy reasons]*

Large wholesalers have the role to communicate, every day, to POs and consortia all along the Adriatic coast, the quantity of clams that will be required for the following day, on the base of the requirements of customers and the quantity of clams stocked. Where there is a strong collaboration and a partial coincidence of the members of the Co.Ge.Mo, of the local PO and of the local wholesaler company *[Information omitted for privacy reasons]* a large consultation can take place among all these subjects. However, only the following day, the final price with the fishers is decided, depending on the daily landings. At the same time, every day, wholesalers communicate the price to their customers (in some cases weekly prices can be decided).

As attested in the previous deliverable (D5.1.1), the clam trade circuits can be quite complex, since large wholesalers take bulk quantities of clams from different areas and providers (including other wholesalers, in order to maintain the supply constant) and can mix and select them before reselling to their customers. For them it is impossible to reach every kind of retailer, in particular

in farther areas of the country; thus, a second level of wholesalers is normally required for a capillary distribution of the good. Large wholesale markets (i.e. Milan, Rome) represent an important point for the exchange between large wholesalers and customers, with the exception of large retailers that have direct relationships with the large wholesalers.

Large wholesalers sell an important share of clams abroad, especially to Spain *[Information omitted for privacy reasons]*. Customers may be Spanish wholesalers or directly large retailers (i.e. Mercadona). *[Information omitted for privacy reasons]*.

Besides clams, COPEMO trade mussels (many mussel producers are partners of the cooperative) and other mollusks species. Thus, these wholesale companies are strongly specialized on clams and bivalves (such as there are companies specialized on small pelagics or on tuna fish).

## 3 ECOPESCE, NEW PROCESSING SOLUTIONS

### 3.1 STRUCTURE AND VALUES

Economia del Mare is a small enterprise, born in 2013 and located in Cesenatico, which has developed innovative processed seafood products, known with the brand “Ecopesce”. Ecopesce has a strong characterization and policy, founded in quality, tradition, sustainability and trust.

Quality is guaranteed by a combination of manual processing and new technologies, especially cold technologies, aimed to develop 100% natural products. Sustainability is founded on the use of local fish (Km0, caught the same day of processing) and the objective of providing value to the entire raw material, reducing to the minimum the food waste. This enterprise want to provide value to the so-called “forgotten fish”, a kind of locally sourced catch which is less known to consumers and therefore undervalued. Tradition is characterized by the development of new products based on local species and local customs. Trust is based on simple and transparent communication of product characteristics.

The following diagram explains the organization of the company. “Economia del Mare” is the enterprise that is in charge of buying fresh fish on local markets, selling it directly (unprocessed) to several categories of buyers and processing it.

*[Information omitted for privacy reasons]*



*[Information omitted for privacy reasons]*

The declared objective is to have a firm that is ethically healthy, focused not only on profit but also in the wealth of the community and the sustainability of the environment.

### 3.2 ORGANIZATION AND TRADE CHANNELS

As it possible to see from the following table, Economia del Mare has a very differentiated list of customers that include Horeca (hotels, restaurants), wholesalers and retailers. However, Horeca and wholesalers are, at moment, the main ones. Wholesalers include the large ones, with a more extended distribution net on the Italian territory, and the small ones that have a local relevance.

It has to be considered that the enterprise was initially born as an intermediary of fresh whole fish. Thus, these shares and market channels include the part of production that is still marketed in this way. Only more recently, in 2017, the portfolio of the enterprise extended to include frozen products, and processed product (fresh or frozen), which represent the “Ecopesce” brand.

Ecopesce s.r.l. also has a private store, located in Cesenatico, which exclusively sell its products directly to the consumers.

*Table 1. Customers of “Economia del Mare”*

*[Information omitted for privacy reasons]*

### 3.3 THE VALORIZATION OF THE PRODUCT

In 2017, the enterprise Economia del Mare began to develop new seafood concepts in order to add value to species that were undervalued and to reduce the waste from fishes of small size (and low price) or in periods of reduced demand. These new concepts included fillets, pulps, tartare and carpaccio. These basic concepts were then used as raw material for further processed products such as sauces ready to use, stuffed pasta, marinated products, smoked products and burgers.

Currently, the following products are available with the Ecopesce brand:

- Fish fillets of ten different species (ready to cook), including anchovies, sardines and mullets; mixture of fillets and mixture of oily fish fillets. Fillets are under vacuum and can be available as chilled or frozen products, in different package sizes (900 gr., 450 gr., 225 gr.). Chilled products have a shelf life of 96 hours.
- Cleaned cephalopods (ready to cook) of four different species including cuttlefish and musky octopus; mixture of cephalopods. Cephalopods are under vacuum and can be available as chilled or frozen products, in different package sizes (900 gr., 450 gr., 225 gr.). Chilled products have a shelf life of 96 hours.
- Crustaceans of five species including rose shrimp and mantis squillid. These products are available as whole or partially cleaned. Mantis squillid, in particular, can be purchased without the upper shell or completely without shell. Rose shrimp is available without shell. Depending of the species, chilled or frozen products are available with different package sizes. Chilled products have a shelf life of 96 hours.



- Tartare is available for six species of mollusks or crustaceans, including rose shrimp and mantis squillid. Products are processed with high pressures for microbiological stabilization. Tartare are under vacuum and can be available as chilled or frozen products the total weigh is 100/120 gr., divided in six mini-portions. Chilled products have a shelf life of 21 days.
- Pulp is available for six species of crustaceans and finfish, including mantis shrimp. Pulp is separated mechanically. It is under vacuum and is available frozen, in different package sizes (500 gr., 300 gr., 200 gr.).
- Ravioli. Five kinds of ravioli are available, differentiated by the color of the pasta and the ingredient of the stuffing. Ravioli are filled with different ingredients. The white ones include potato, cheese, red gurnard and mantis shrimp. Ravioli are under vacuum and are available frozen (500 gr.).
- Sauces, ready to use. Four typologies are available, including one based on mullets, one on cuttlefish and one on sardines. Glass jars are available in two different formats (210 gr., 310 gr.).

All the products come from fishes caught in the Adriatic Sea.



Figure 2. Finfish fillets under vacuum.



Figure 3. Crustaceans tartare in six mini-portions.



Figure 4. Sauces.

## 4 THE WILD MUSSEL CASE

### 4.1 The productive system

The wild mussel is a mollusk that reproduces naturally and lives attached to submerged substrates, whether of natural or artificial origin. The wild mussel collected by the Ravenna cooperatives has a history mainly linked to the presence of the platforms of gas extraction: initially linked to the normal cleaning and maintenance activity of the pylons of the platforms on which the mussel is born and grows, over time it has gone from being an element of disturbance to commercial resource and, today, product of excellence of the territory.

To date, fishermen working in the sector have two Cooperatives: Small and Medium Fishing La Romagna and New Conisub. Both cooperatives have 4 vessels each (therefore 8 in total) and each crew consists of 4 O.T.S, Underwater Technical Operators, in line with regulations and with the development of maintenance techniques and technical underwater interventions. Finally, each cooperative has an administrative technical office, which through its employees brings the total number of employees to around 40 employees.

### 4.2 AREA OF COLLECTION, PRODUCTION AND CLASSIFICATION OF THE PRODUCT

The platforms on which the disincrustation action is practiced are located in a large area from Chioggia to Pesaro. The areas of large collection, on the other hand, are in front of Emilia Romagna region: Ravenna, Rimini and Forlì-Cesena. The saleable mussels are under close control of the 3 Romagna AUSL, which go on boats every 15 days with the fishers and the representatives of ARPAE to carry out a series of analyses; if these show any alterations, analysis are repeated every 7 days instead of 15. The waters in which the platforms are located and therefore the mussels are collected are divided into two categories: A and B. Currently, out of 65 structures from which the wild mussel can be obtained, 5 are category A, while the majority of mussels are then caught in type B waters where, although the analyses are perfect, it is necessary to foresee the passage to the depuration site, with a noticeable increase in processing times, resource

utilization and, therefore, the cost of the mussel. It is currently being investigated and in the hands of the Emilia Romagna Region, the procedure that would permit (after repeated analyses with results within the legal limits) the transition of category B areas to category A areas. From the point of view of transport and packaging, a regulation forbids to load on the same boat products coming from different classification areas.

In the period from 2017 to 2019, the production of the mussels has seen a growing trend, from 481,665 kg to 642,474 kg. The 2020 season has preliminary data that make suppose that production is in line with this trend of increase production.

Table 2. Production of wild mussels in the period 2017-2019

Produzione di cozze nel periodo 2017-2018 (Kg)				
2017	2018	2019	Var. % 2017-2018	Var. % 2018-2019
481.665	514.980	642.474	6,92	24,76

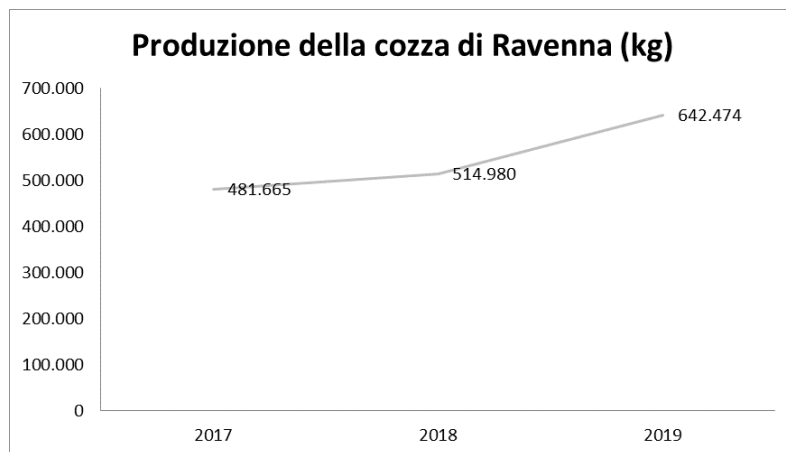


Figure 5. Production of wild mussels in the period 2017-2019

### 4.3 SUPPLY CHAIN STRUCTURE

The wild mussel has a wholesale price of around 2.5 euros per kg. Seasonal production, size and market demand of mussel products in general (including farmed mussels) are the factors that most influence the price fluctuation. As a niche product, supply of wild mussel fails to meet demand in full. Selling is made after order: fishermen go to sea knowing already the share of catch that will be purchased by wholesalers, without producing any surplus. The supply chain is very reduced: the mussels caught are in fact mainly sold to wholesalers (the main ones are five) who in turn sell the product to retailers including restaurateurs, supermarkets and fishmongers.

Once the mussel is sold by fishers, it becomes impossible to determine whether the wild mussel is mixed with other mussels of different nature and origin. It cannot be excluded that, given the higher quality and price of the wild product, mixing with farmed mussels before resale may be done by other supply chain actors.

Only one of the wild mussel collectors is also a retailer, which allows him to guarantee the origin of the product. As there is (yet) no registered trademark, producers do not realize a real selection of the wholesalers, since they do not see the need to trace the destination and final use of the product, and to verify if the origin and characteristics of the wild mussel are correctly transmitted and communicated.

### 4.4 SUPPLY CHAIN POTENTIAL

In this framework, the first step to ensure success and increase the added value of the wild mussel product, is definitely the registration of an official brand, which protects the product collected at the time of sale to wholesalers. Only recently, the two cooperatives have begun to move in this direction, requiring funding for the adoption of a collective brand. With the successful outcome of the investigation, the project is expected to be completed by summer 2021.

A second aspect that should be developed, for which a study is going to be developed in the second half of 2020, is the assessment of the weight loss of the fresh product. To date, by

convention, a drop in yield of 10% is calculated, which results in a drop in the sale price. Thanks to the wildness of the mussel caught, it is the opinion of the producers that this decline is lower in the platform mussels, also confirmed by the fact that they possess a shelf life superior to the farm mussels. A defined parameter study will confirm this or not.

## 5 ORAPESCE, HOME DELIVERY SOLUTIONS

### 5.1 CORPORATE MISSION

Orapesce is a digital platform for online food retail. Specifically, its function is to connect local fresh fish from Romagna's sea with customers houses within 48/72h, delivering a full consumer-friendly experience. This direct distribution canal may be perceived by customers more comfortable and/or more able to guarantee the freshness of sold products than traditional canals. Moreover, a corporate social responsibility is enhanced by strengthening both the local productive sector (fishermen cooperatives, SMEs) and the social local fabric.

The business model of the enterprise is intended to be flexible, as some parts of the chain are externalized, and it refers to serve both the B2C and the B2B channels. B2C (Business To Consumers) is represented by consumers directly ordering from the website, while B2B (Business To Business) is implemented in the Ho.re.ca. sector with both online ordering and direct sales, in future even with commercial agents.

### 5.2 CORPORATE STRUCTURE

*Omitted*

### 5.3 BUSINESS MODEL - ROAD MAP

*Omitted*

### 5.4 SUPPLY – AVAILABILITY – PRICING

The supply chain is mainly based in Rimini. It consists of a network of cooperatives or other small fishing crews linked by a partnership agreement. The importance of the local dimension is so felt that on the website are collected some video-interviews of affiliated fishermen.

*[Information omitted for privacy reasons]*

Due to the supply choices, the availability of the products on the platform depends on the fishing season.

Two aquaculture species on the shop list are certified with organic label. Those are *Dicentrarchus labrax* (European Bass, Spigola or Branzino in Italian) and *Sparus aurata* (gilt-head seabream or Dorade, Orata in Italian).

*[Information omitted for privacy reasons]*

As the fish is delivered after the cleaning operations, customers pay a net price that exactly corresponds to the edible portions. The weight loss is computed through conversion factors for both species and cleaning typology, factors agreed with the fish suppliers who receive payments for the gross weight. This is intended to facilitate inexperienced consumers to adjust the volume of their orders as they can clearly read the number of portions that they will receive.

The following chart reports, for each item sold on the platform, the method of fishing and the product cleaning operations before the delivery, as declared on the product detailed pages.

Table 3: Products' method productions and cleaning operations

Product Name	Italian name	Fished/ breded	Method production	Cleaning operations
Red Mullet fillet	Triglia	fished	Caught with trawls or gillnets	headed, boned, eviscerated with skin
Codfish or Hake fillets	Merluzzo o nasello	fished	Caught with trawls or gillnets	headed, boned, eviscerated with skin
Squids	Totano	fished	Caught with trawls	skinned, gutted and curled (clean tube)
European Bass fillet	Branzino o spigola	breded	fishfarmed in open sea	
Striped prawn	Mazzancolle	fished	Caught with trawls	
Striped prawn	Mazzancolle	fished	Caught with trawls	
Anchovies fillet	Alici	fished	Caught with trawls or encircling or collecting nets	Beheaded, gutted and boned
Box Adriatic Barbeque				



























Codfish or Hake	Merluzzo o nasello	fished	Trawl or encircling or collecting fish	Gutted
Mediterranean Bream fillet	Orata	breded	fishfarmed in open sea	
Mullet fillet	Cefalo or Muggine	fished	Caught with trawls or gillnets	headed, boned, gutted with skin
Mullet fillet	Cefalo or Muggine	fished	Caught with trawls or gillnets	headed, boned, gutted with skin
Adriatic Cuttlefish	Seppia			
Sardine fillet	Sardina	fished	Caught with trawls	eviscerated, headed and boned
Adriatic Musky Octopus	Moscardino	fished	Caught with trawls	gutted and curled
"Paranza" Small sized mix	Seasonal variety	fished	Caught with trawls or encircling or collecting nets	Beheaded, gutted and boned
European Bass	Branzino o spigola	breded	fishfarmed in open sea	eviscerated
Mediterranean Bream	Orata	breded	fishfarmed in open sea	eviscerated
Whiting Eviscerated	Molo	fished	Caught with trawls or encircling or collecting nets	Beheaded, gutted and boned
Mantis Shrimp	Canocchie	fished	fished with pots	
Mixed Adriatic fish fillets		fished	Caught with trawls or encircling or collecting nets	Headed, gutted and delisked
Angler (monkfish)	Rana pescatrice	fished	Caught with trawls	gutted and skinned
Sole	Sogliola	fished	fished with pots	Headed, skinned
Clam	Vongola lupino	fished	Fished with dredges	
Adriatic Mussels	Cozze dell'Adriatico	Italy	breded	
Miscellaneous Adriatic fishes	Pesci misti dell'Adriatico	fished	Caught with trawls or encircling or collecting nets	Headed, eviscerated and boned
Gurnard or Tubefish	Galinella o cappone fillet	fished	Caught with trawls or gillnets	headed, gutted, eviscerated with skin
Gurnard or Tubefish	Galinella o cappone fillet	fished	Caught with trawls or gillnets	headed, gutted, eviscerated with skin
Mediterranean Bream fillet BIO	Orata fillet BIO	breded	fishfarmed in open sea	Headed, gutted and delisked
Mediterranean Bream BIO	Orata BIO	breded	fishfarmed in open sea	eviscered

European Bass Fillet BIO	Branzino o spigola filetto BIO	breded	fishfarmed in open sea	Headed, gutted and delisked
European Bass BIO	Branzino o spigola BIO	breded	fishfarmed in open sea	eviscered

Due to the attention on products organoleptic qualities and environmental sustainability, Orapesce claims to strictly follow the seasonality of the singular species on their offer. Thereby each species is available only on determined months of the year. Moreover, during August no fishing is allowed at all (the Law enforce a fishing ban for biological recovery reasons). Here follows a graphic representation of the seasonality by Orapesce.

Table 4: Species seasonality. Personal elaboration from official website information.

ITALIAN NAME	ENGLISH NAME	LATIN NAME	J	F	M	A	M	J	J	A	S	O	N	D
			A	E	A	P	A	U	U	G	E	C	O	E
			N	B	R	R	Y	N	L	O	P	T	V	C
BRANZINO O SPIGOLA	European Seabass	Dicentrarchus labrax												
CANOCCHIA	Mantis Shrimp	Squilla mantis												
CEFALO O MUGGINE	Flathead grey mullet	Mugil cephalus												
COZZE	Mussels	Mytilus galloprovincialis												
GALINELLA	Gurnard	Aporrhais pespelecani												
GARAGOLO	Common pelican-foot	Maja Squinado												
GRANCELLA	Spinous spider crab	Nassarius mutabilis												
LUMACHINO	Changeable nassa	Codfish												
MERLUZZO	Codfish	Merlangius merlangus												
MOLO	Whiting	Eledone moschata												
MOSCARDINO	Musky octopus Mediterranean	Sparus aurata												
ORATA	Bream Blackspot(=red)	Pagellus bogaraveo												
OCCHIALONE	seabream													

OSTRICA	Oyster	Fam: Ostreidae			
PAGANELLI	Rock goby	Gobius paganellus			
POVERACCIA (= vongola lupino)					
RANA PESCATRICE	Angler(=Monk)	Lophius piscatorius			
SARAGHINA	European Sprat	Sprattus sprattus			
SARDINA	European Pilchard	Sardina pilchardus			
SARDONE o ALICE	European anchovy	Engraulis encrasicolus			
SCRIGNO DI					
VENERE	Anadara	Scapharca			
SEPPIA	Cuttlefish	Sepiidae, Sepiolidae			
SOGLIOLA	Common Sole	Solea solea			
TRIGLIA	Red Mullet	Mullus barbatus			
VONGOLA	Clam				

## 5.5 PRICES (AS ON 27/5/20)

From the shop, for each product, a series of additional information is indicated. They concern scientific name, scientific description, certifications, allergens, nutritional values (plus energetic value, proteins, fats), conservation and cooking advices. Moreover, additional information is reported for the specific product, as the provenience, physical state, fishing technique/method.

The following charts present all the items on the platform as on 27/5/2020, with weight and price information. The first chart contains the three items not available at the moment (out of order). The second contains the organic product line bred by Cromaris and the third all the available items.

*Table 5: Not available products*

*[Information omitted for privacy reasons]*

*Table 6: Biological Line products*

*[Information omitted for privacy reasons]*

Table 7: Available products

*[Information omitted for privacy reasons]*

## 5.6 LOGISTIC NETWORK

### The logistic pillars

*[Information omitted for privacy reasons]*

### Packaging and standard

All the delivery methods fulfil the ATP international standard. ATP (Transport of Perishable Foodstuff) is a standard adopted by more than 50 states worldwide aimed to preserve food safety, ratified on 1970 under the aegis of the UN commissions<sup>1</sup>.

Deliveries are made guaranteeing a cold-chain between 0 and 4 degrees, the products are dispatched within an isothermal package posed into an ice-filled box.

### Costs

Final shipping costs charged to customers depends from the order value. A minimum order of 35€ is settled to incentive efficient shipments, and free shipping is provided for those who spend more than 75€ with a single order. From 35€ to 55€, 10€ are charged as shipping cost, while from 55€ to 75€ only 5€ are charged.

### Zones – timings

---

<sup>1</sup> [https://en.wikipedia.org/wiki/ATP\\_\(treaty\)](https://en.wikipedia.org/wiki/ATP_(treaty))

As at mid-2020, Orapesce delivers its products on the whole Italian territory, with 5 differentiated zones. Deliveries are planned with a fixed weekly timetable, and from zone to zone it is possible to order the fish from two to four days before.

1. The most favorable zone (represented in orange on the map) is the one composed by the provinces of Bologna, Rimini, Ravenna, Forlì Cesena. Orders can be submitted until 2 days before the delivery, that can be booked for Tuesday, Wednesday, Thursday and Friday.
2. The purple zone contains the cities of Milano and Verona (as already reported two key-markets). Deliveries are planned for Wednesday, Thursday and Friday and can be booked in a two days advance.
3. The dark blue area (Zone A), due to population density and logistic infrastructure, is the most served by the platform. Here deliveries can be booked two days before and are planned for Wednesday, Thursday and Friday.
4. The B Zone (blue) can be booked with three days of advance. It includes central Italy.
5. The C Zone is the least served, as order have to be submitted 4 days before.

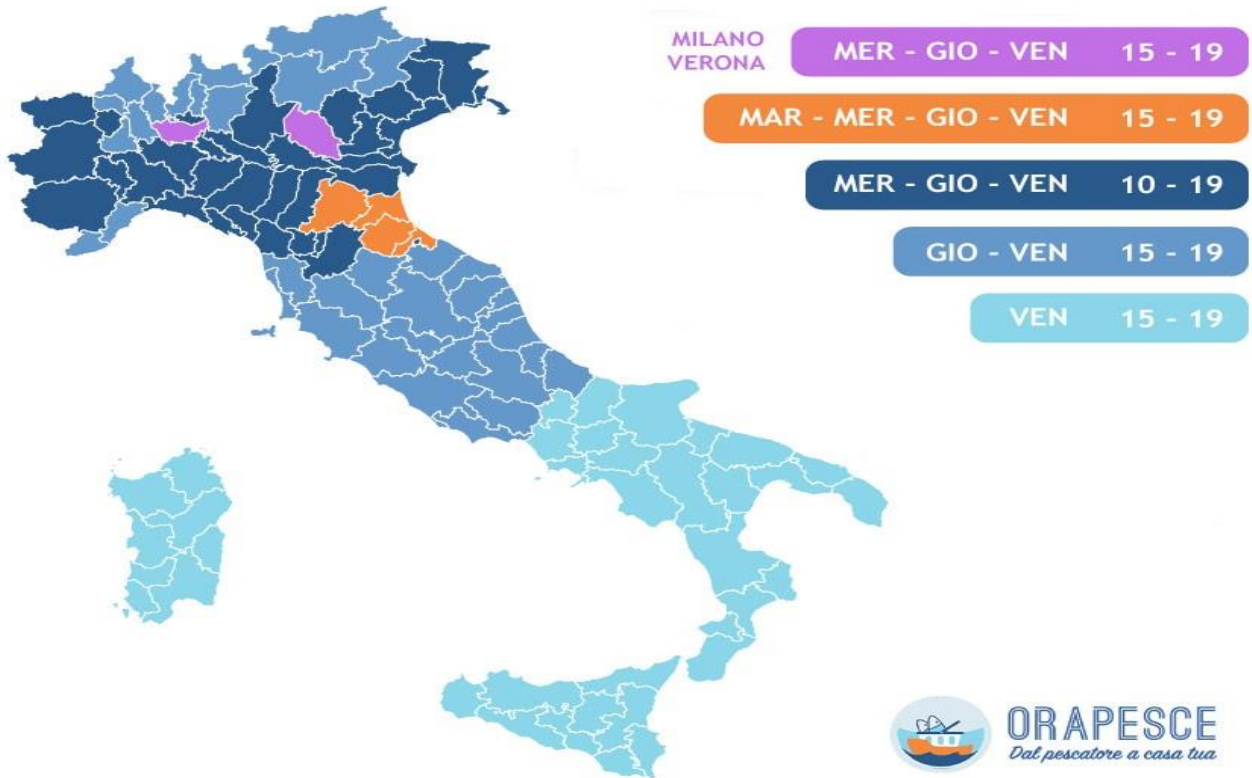


Figure 6: Italy delivery zones. source: orapesce.it

## 5.7 PAYMENT METHODS AND FEEDBACK SYSTEM

The payment system is a key issue for all e-shops. Orapesce is working in cooperation with two different payment circuits (PagOnline Unicredit and PayPal) in order to facilitate customers during the order. PagOnline Unicredit is an electronic payment system powered by the Italian bank which allows to receive money from Visa, Visa Electron, Mastercard, Maestro, American Express and Postepay.

*[Information omitted for privacy reasons]*

Orapesce adhered to the online feedback system Feedaty, which guarantees real comments and vote to the e-shop, encouraging uncertain consumers to make orders (some are particularly restrained to use the credit card online due to the digital risks). On this platform, Orapesce has been voted positively from the 98% of the consumers, with an optimum average rate of 4,9/5<sup>2</sup>, both evaluating shipping timing and products quality.

## 5.8 CLEANING OPERATIONS

As reported, the cleaning operation is a very important part of the added-value chain because it allows inexpert consumers to buy ready-to-cook fish.

*[Information omitted for privacy reasons]*

### **Tracking**

The traceability of the processed products is guaranteed into the company's information system all the time. Since the acquisition by Orapesce of the products, the production batch is signed with many information such as: supplier name and documents, Italian commercial denomination of the product, scientific name, production method (breded or fished) and catching zone. All those elements are printed on the batch's label and not editable.

## 5.9 BRIEF SECTOR ANALYSIS

Orapesce is one of the few trailblazers in its own business niche. Only the 0,1% of total fish has been sold in Italy by online platforms during 2018 (for an amount close to 3 Million euros), but the customers choices are changing in a very fast manner, as online general food shopping rose by 39% on 2019.

The competitive arena is still not much aggressive as it may appear within years. A class of competitors is composed by generic online food retail who also sell fish, like Eatly, Cortilia,

---

<sup>2</sup> <https://www.feedaty.com/feedaty/reviews/orapesce>

Esselunga, EasyCoop or Pam. They typically are the online wing of a large-scale retail distribution firms (since they already have a logistic structure and huge buy orders) but may also represent an only online retail company.

The other competitor class is composed by online retailers specialized in fish. Some are only present in specific cities (i.e. 24fish in the Milano metropolitan area) and some others base their supply on imports. Thereby, Orapesce's aim is to become the pioneer in this developing profitable market, being the first full-operating platform to cover all the Italian territory with only local certified fish and products.

## 5.10 COMPETITORS

In this section will be presented some of the most important actual competitors of Orapesce, in order to evidence similarities and differences.

### 5.10.1 CORTILIA.IT

**Keywords:** e-shop, producers care, short supply chain, sustainability

#### History and mission

Cortilia is an e-shop platform born in 2013 in Lombardy, it's one of the first Italian example of short supply chain online operators. Its mission is to become an "high-quality online alternative to the large-scale distribution". As from the official website, Cortilia recognizes and acts following seven core values<sup>3</sup>: artisanship, trackability, sustainability, freshness, seasonality, italianness and simplicity.

#### Producers

Cortilia bases its supply on 209 different producers from all over Italy. Each producer has a personal page on the website where all the important information is accessible (location,

---

<sup>3</sup> <https://www.cortilia.it/i-nostri-valori>



products, brand history, certification). In order to become a Cortilia supplier, candidates have to prove the quality standard and the fidelity to the seven values.

### **Products**

Cortilia sells more than 2500 different products from different categories, such as fruit, vegetables, cheese, eggs, meat, fish, pasta, bread, wine, personal care and many more.

The quantity of producers makes possible to choose for the same product or for close substitutes (i.e. rural chicken thigh vs bio chicken thigh) different suppliers, pledging all kind of customers, from those more focused on saving money to those focusing on quality and certifications.

### **Logistic**

Cortilia started its operations in Lombardy. Since then, it added many selected cities. As on June 2020, Cortilia operate in the cities (and relative provinces) of Milano, Torino, Bologna, Modena, Monza e Brianza, Varese, Como, Lodi, Pavia, Piacenza, Novara, Brescia, Bergamo and Gallarate.

Customers have to submit a minimum order of 29€ and shippings are organized into time slots. The standard time slot (the largest) is free, but it may be perceived as uncomfortable from customers since they may not have the time to wait at home for the courier. To fix this disadvantage on online shopping, customers can also choose between different customized timeslots, paying an extra depending on the slot duration. For example a very specific hourly timeslot can cost 4,99 extra euros, while a three-hours-slot can cost 2,99€. Anyway, discounts are provided for large orders (5€ discount on >59€ order and free shipping fees for orders >79€).

Cortilia claims on its website to deliver most of the orders within 24h from the submission.

## **5.10.2 EASYCOOP.COM**

**Keywords:** Mass distribution, flexibility

### **History and mission.**

EasyCoop is the e-shop service for Coop Alleanza 3.0.

Coop Alleanza has been founded on 2016 from the merging of Coop Adriatica, Coop Estense and Coop Consumatori Nordest, making the biggest Italian consumer cooperative (4,8 Billion Euros in revenue during 2018). It presents, as on June 2020, more than 430 physical shops and adheres to the Coop Italia consortium. In short form, it's the online branch of one of the most important mass distributor players operating in the Italian market.

Its mission is thereby to be the 21<sup>st</sup> century upgrade of the social values that led to the constitution of the cooperative back in 1854.

### **Products**

Easycoop basically delivers all the products that are available in the physical shops (more than 11.000, 3.000 of which fresh products). A great space is used within the website to promote the Coop owned product lines (i.e. ViviVerde, FiorFiore, Crescendo, Solidal).

### **Logistic**

*[Information omitted for privacy reasons]*

The minimum required order is 50€, and the shipping costs depends from a time-slot algorithm, computing width and availability. They start from 3,90€<sup>4</sup> and vary depending on date and time-slot, following the indication of more flexibility-lower costs for consumers. Deliveries are available from 8AM to 10PM.

In order to speed-up the shipping and lower the costs, the products sold on the e-shop (although are the same that sold on shops), are stocked in a dedicated warehouse. The whole shipping process is fully tracked and the consumers receive a text message on their mobile phone 30 minutes before the delivery.

### **5.10.3 ILOVEOSTRICA.IT**

**Keywords:** Oyster, sea luxury, crudité

### **Mission and Core Business**

---

<sup>4</sup> <https://www.easycoop.com/come-funziona>

Iloveostrica is a project started from Luca Nicoli, starting from the experience of his previous fish e-shop “**La Piazzetta del Pesce**”. This platform’s aim is to promote oysters and other luxury sea products<sup>5</sup>. The central focus, as the website name claims, is on oysters, but also raw fishes and Adriatic species are valorized.

The core business is split into three different destinations: e-shop, catering and events, personal chef. Regarding the personal chef business, customers can “book” a chef who will cook at the customer’s house (if needed Iloveostrica can even provide waiters). Catering are available for public or private events (such as weddings or corporation happenings) with some quality extra as the show-cooking or demonstration made by oyster experts.

### **E-shop**

Following the corporate mission, the e-shop sells more than 31 different qualities of oysters, differentiated for species and provenience. Most of them are provided by French suppliers and their price can vary greatly.

Other sections of the platform are dedicated to complementary categories, as fresh fish (even in fillets or processed), plateaus (mixed dishes of oysters or other delicacy), raw fish (*crudité*), caviar, wines, cheese and even accessories (anti-cut gloves, knives, pots, forks).

### **Logistic**

Iloveostrica operates without owning a central warehouse. In fact, they buy the item from the supplier only after that the consumer makes the order on the platform. This chain configuration typically lowers the costs but can affect the delivery timing.

All the products of the section *Crudité* need a particular temperature control because of their dangerousness if rotten. Thereby, they are blast chilled at -40° in two hours. All the food sold by Iloveostrica do complain the HACCP standards and the European Regulation CE 852 and 853/04.

The shipping is outsourced to couriers specialized in food and fresh delivery with refrigerated vehicles and presented to the customers within 24/48h.

---

<sup>5</sup> <https://www.iloveostrica.it/it/azienda/chi-siamo>

## Orders

The minimum order is fixed at 60€, with 10€ of delivery fee that become free after reaching 120€. Customers can by Paypal, Visa or Mastercard.

There are two different shipping methods: the Classic implies order until Monday and delivery on Thursday or Friday. The Express is available only for selected products, if ordered until the 10AM allows to receive them during the following day. Iloveostrica operates on the whole Italian territory.

### 5.10.4 AMAZON FRESH

**Keywords:** Amazon, one-day-delivery, local producers

Assuming that projections in the next years for this sector are of huge growth, it has to be mentioned Amazon Fresh, the fresh products branch of Amazon, as a possible mid-term game changer.

If Amazon massively invests in this branch, it would become an important player as it already did in other markets. Its massive customer base, its reputation and its logistic fully developed network can be the keys to change the consumers habits in the medium term.

Some pilot projects were in use since 2007 (Seattle) <sup>6</sup>, but the actual business model has been enforced in 2017 as a monthly subscription plan and is now available in some selected cities in the U.S.A. and abroad. In the US, it is available in Atlanta, Baltimore, Boston, Chicago, Dallas, Denver, Houston, Indianapolis, Las Vegas, Los Angeles, Miami, Minneapolis, New York, Philadelphia, Phoenix, San Diego, San Francisco, Seattle, and Washington D.C.. Other selected markets abroad have been serviced since few years, such as Berlin, Munich, Hamburg, London and Tokyo. No official announcement has never been made for the Italian market.

---

<sup>6</sup> <https://www.investopedia.com/articles/personal-finance/052015/how-amazon-fresh-works.asp>

The business model relies on partnering with local producers and specialties stores. Due to the advanced logistic network, Amazon Fresh can deliver the orders in the same day or in the following day, depending from the situation.

## 5.11 ORAPESCE SWOT ANALYSIS

*[Information omitted for privacy reasons]*

Figure 7: Orapesce Swot analysis

## 6 FISHING COOPERATIVE OMEGA 3, CREATING VALUE-ADDED PRODUCTS THROUGH INVESTMENT IN TECHNOLOGY AND KNOWLEDGE

### 6.1 About the co-operative

The fishing co-operative “Omega 3” was founded in 2008 in Kali on the island of Ugljan. The most important activities of the co-operative are catch of pelagic fish (sardine and anchovy) and processing of fresh fish into frozen products. The co-operative employs 16 co-operative members-fishermen, who own 21 trawl ships. The co-operative participates with more than 1/5 in total catch of small pelagic fish in Croatia. In June 2012, the co-operative built a production plant in the industrial zone Šopot, which encompasses refrigerated warehouses, and a freezing plant for fresh fish. The co-operative employs 88 workers at the moment. In 2015, fishing copoperative “Omega 3” was recognized by the Ministry of Agriculture as the first producers organisation in RH under the name “Fishing co-operative Omega 3 – the organisation of producers” (skr. O3OP).

The main suppliers of the co-operative are their members. The members of the co-operative have the obligation to hand over the caught fish to the co-operative, and the co-operative to purchase all the fish. The co-operative from time to time purchases fish from other fishermen from the region (4 ships).

The co-operative purchases around 7000 t fish of which 4 800t of sardine and 2200t of anchovies. From the total purchased fish, around 6200 t are purchased from the cooperative members, and 800 t from other fishermen from the region. The fish purchased from the co-operative members is of better quality compared to other purchased fish.

The redemption price of fish between the co-operative and the members of cooperative members is negotiated once a year, for the anchovy at the beginning of the year, and for sardine, in the middle of the year. From the total trade, the members of the co-operative pay 1% of the total turnover, for the managing of the co-operative. The redemption prices of fish are

differentiated by quality and size. The price of the sardine is from 2.40 to 4.7 kn/kg, and anchovy from 4 to 10 kn/kg. The main product of the co-operative are IQF frozen sardine and anchovy.

Table 8: Product assortment of fishing cooperative Omega 3.

	Packaging	
IQF frozen sardine whole	Carton box	15 kg
IQF frozen sardine without head	Carton box	10 kg
IQF frozen fillet of sardine	Carton box	10 kg
IQF frozen anchovy	Carton box	10 kg
IQF frozen mackerel	Carton box	15 kg
IQF frozen horse mackerel šarun	Carton box	15 kg
Fresh sardine	EPS styropore	6 kg
Fresh anchovy	EPS styropore	6 kg

Source: [www.rz-omega3.hr](http://www.rz-omega3.hr)

The products are additionally differentiated by quality and size.

The co-operative works with 28 foreign and one domestic wholesaler, 13 foreign fish processing plants, two domestic fish processing plants and one tuna farm. The most significant buyers are Spanish wholesalers (e.g. HERMANOS BELTRAN ADELL, S.L. etc.) and fish processing plant (e.g. Gil Comes). The co-operative exports 3.500 IQF of frozen pilchard and anchovy. From domestic buyers, only one wholesaler is significant, HMZ Horvat, *[Information omitted for privacy reasons]*

The factory Sardina d.d. buys around *[Information omitted for privacy reasons]* of fish for canning per year. The tuna farm Kali buys around *[Information omitted for privacy reasons]* for tuna feeding per year.

The fish price differs, depending on quality and size. In the export, the co-operative gets the price of 1.00 – 1.20 Euro/kg for the premium quality sardine, for the canned sardine 0.50 – 0.60 Euro/kg, for anchovies in the fresh market 1.50 – 2.00 Euro/kg, and for the anchovies for processing 0.60 – 0.70 Euro/kg. The fishing tool, sale by date and package do not influence the price of the product.

The co-operative does not have departments for marketing, and sometimes marketing activities are done by a person who does sales (e.g. collecting information from the markets, visiting and presenting at fairs, creating and using posters, catalogues etc.) Marketing does not have a strategic importance. De facto, in the case of the co-operative, it is the case of derived marketing. Foreign buyers create premium products according to the demands of their own markets, and acquire semi-processed products from Omega 3, by quality and assortment, which are necessary to produce the final product.

## 6.2 Description of innovations

The process of innovation in the cooperative is described in three phases:

- Purchasing innovative technologies for freezing fish
- Creating technological and organisational assumptions for increasing quality of fresh or frozen
- Introducing sustainable ecological practices

### **The purchase of innovative technologies for freezing fish**

After the foundation, the co-operative did not have capacities for preserving or processing fish, so the fish caught was sold at a very low price. The first key step towards increasing the value of the catch by the co-operative (fishermen) was building a fish processing plant and implementing innovative technologies for freezing fish. Freezing is done with the modern IQF technology (individually quick-frozen), at the temperature of  $-18^{\circ}\text{C}$  along the bone. After the freezing process, the fish receives a thin cover of glaze.





*Figure 8: Fish processing*

The glaze is necessary to protect the product from drying. Frozen fish is packed in small cartons (10 to 15kg). The process of freezing, from raw fish entering the plant to packaging last 15 minutes top.



*Figure 9: IQF frozen pilchard*

The short time of freezing is very important so that making of small ice crystals inside the fish is avoided. The appearance of small ice crystals reduces the quality of frozen fish. The capacity of the plant is 5 tonnes of fish per hour. Frozen fish is stored in refrigerated warehouses and is kept till it is sold and delivered to buyers.

### **Creating technological and organisational assumptions for increasing quality of frozen fish**

The co-operative invested significant means in the last few years to improve the conditions of preserving the fish on ships and reduce the time from catch to delivering the fish to factories. Insulated containers (insulated containers for water with double walls and covers) are purchased, cranes and landing ramps on refrigerated trucks are installed. Also, palletizing in cold storage warehouses is introduced.

After fish capture, live fish is stored in insulated containers. There is a mix of cold sea water and ice ( $-8^{\circ}\text{C}$ ) and the fish is shocked in them. The thermal container maintains the targeted temperature of fish ( $3 - 4^{\circ}\text{C}$ ) from the catch to delivery at the processing plant. The targeted temperature keeps the fish fresh and prevents emergence of unwanted proteins, which spoil the quality of the raw material.



*Figure 10: Shocked sardine in thermal containers*

The cooperative financed the purchase of the thermal bay by 75% and the fishermen by 25%. The introduction of insulated containers on ships required installing cranes on ships and landing ramps on refrigerated trucks. This way, the time of unloading the fish in landing port, and the time of transshipment of the fish to the plant is reduced. The crane installation was financed by fishermen, and the loading ramps by co-operatives.



*Figure 11: Fish unloading in refrigerated trucks*

Creating technological assumptions for keeping the quality of fish on ships and reducing the time of transport to processing plants, the quality and the value of fish product is additionally increased.

A significant step in improving the quality of catch is done by introducing differential system of payment for pilchard regarding its quality. There are three quality classes: premium, standard and fish for animal feed. The price of sardines, depending on size ranges from 3.00 – 4.70 kn/kg. The price of standard sardine is 2.40 – 3.00 kn/kg. The price of sardine for tuna feeding is 2.40 kn/kg.

The premium sardine must have natural colour throughout and no traces of blood. The fish is intended for the most demanding consumer niche on the Spanish market. The standard sardine

is of the same quality, but has some traces of blood at the gills. As a rule, it is sold for canning. The fish for feeding animals is not sorted, and does not have size, and there is quite a bit of torn and bloody fish. Fishermen are, in a way, “fined” for this fish, because they get a lower price compared to standard, and premium sardine.

The differentiated way of payment for fish, and high prices for prime quality, enticed fishermen to change the attitude towards the job, and pay more attention to catching fish. Before, most fishermen have rather caught big quantities of fish and sold it to tuna farms. The farms purchased, as they still do today, all the catch, with no regards to size and quality. Most fishermen, today, rather catch small quantities of fish, of higher quality, and therefore make more money than selling the fish to tuna farms.

In the processing plant, palletizing of cold storage warehouses is done, by which the capacity of stockholding is increased by 80%. In this way, the needs of buyers for warehouses is reduced.

### **Introduction of sustainable ecological practices**

Lately, participating in scientific projects, the co-operative tries to implement sustainable fishing practices. The co-operative takes part in several projects including the Prizefish Project.

Receiving the MCS certificate and label of sustainable fishing, the co-operative could step out to more demanding markets of Western Europe and additionally increase the price of sold products. In this way, it is possible to additionally lower the fishing strain, without lowering the fishermen's profit.

The example of fishing cooperative Omega 3 shows that it is possible to create and improve fish products on the Adriatic with clear vision and support of co-operative fishermen and innovative management.

## 7 MIRNA D.D., THE SUCCESSFUL CONSOLIDATION OF CANNED FISH FACTORY AFTER TAKEOVER

The tradition of canning fish in Rovinj is nearly 150 years old. Mirna d.d. Rovinj (thereinafter: Mirna) follows first factories for producing canned fish in Croatia, and is one of the oldest in the world. In 1877, the Parisian company Société Générale Française de conserves alimentaires opened a plant for canning fish with thermal sterilization in Rovinj. The production of canned fish survived till today.

At the beginning of 2000s, Mirna went through great business hardship. The technology was old, the products were not competitive, and the management ineffective. The consequence was the loss of market and claimed loss. Beginning of 2014, the company was heavily indebted, and it was facing bankruptcy. At the end of the same year, the factory was bought by Podravka d.d. and the process of consolidation started.

### 7.1 About Mirna d.d.

Mirna is the member of Podravka Group<sup>7</sup>. The factory employs around 235 workers. The production plant is situated on 60 thousand m<sup>2</sup>, which also houses a fish landing site. Mirna processes approximately 6 000 tonnes of Adriatic sardine per year. The need of the market is bigger, approximately 7000 tonnes a year, but there is not enough raw material in order to increase the production. Main suppliers are local fishermen.

The production program consists of canned fish (sardine, mackerel, bluefin tuna), fish pate, fish salads and fish spread. The most important part of the assortment are canned sardines, which

---

<sup>7</sup> Podravka, is one of the leading companies in South Eastern, Middle and Eastern Europe. It was founded in Koprivnica in 1947, where it also resides today, and it was based on former jam and fruit processing factory of the Wolf brothers. Podravka today works in two main commercial segments: food and pharmaceuticals. The food industry produces over 800 products, and their 20 brands are among the most well-known products in the Adria region. Podravka sells their products in more than sixty countries around the world. (<https://www.podravka.hr/kompanija/> datum pristupa 16/March/ 2020 at 22:32).

are produced in several versions: in vegetable and olive oil, with lemon, spicy and with vegetables. The production assortment is constantly expanded with new products.

Mirna has two of their own brands, Eva and Mirela, which hold approximately 60% of the domestic market of canned sardine *[Information omitted for privacy reasons]*

Over 70% of the production of canned sardine is exported. The most significant export markets are the countries of south-eastern Europe. In the last few years, Eva and Mirela set up on the markets of central Europe (Hungary and the Czech Republic), and they are sold more and more to overseas markets (USA, Canada and Australia).

## 7.2 Business consolidation

As it was mentioned earlier, Podravka bought Mirna, which was nearly bankrupt. The process of business consolidation of Mirna d.d., within the framework of Podravka went through these phases:

- Modernisation of canned fish production plant
- Sales integration to Podravka system of distribution
- Reviving the brands and strong marketing support.

### **Modernisation of the canned fish production plant**

The modernisation of the plant was done in two phases. Firstly, the batch style tunnel for freezing fish was bought and a new refrigerated warehouse for frozen fish was built. In this way, the daily capacity of receipt and freezing fish has increased to 100 tonnes, and significantly improved the quality of the raw material for processing. It is especially important since the catch and the offer of sardine is diminishing, and the catching peak is getting rarer. Therefore, when the offer is plentiful, it is necessary to have it stored keeping the quality, for processing later.

The second phase involved, buying two new production lines for canning fish (machines for primary treatment of fish, cutters, line for automatic cooking and sterilization of fish and

automatic packaging of cans). With these investments, daily capacity of processing fish increased to 30 tonnes. Daily capacity of can production, depending on the size and assortment of fish, increased to 100,000, that is, 200,000 pieces, and the yearly to 33 million pieces. Besides that, this investment enabled unifying the production of both brands, Eva and Mirela in the Rovinj plant.

*[Information omitted for privacy reasons]*

*Figure 12: Processing of fish in Mirna d.d. Source: [www.vecernji.hr/](http://www.vecernji.hr/); 17/03/2020*

*[Information omitted for privacy reasons]*

*Figure 13: Processing of fish in Mirna d.d. Source: [www.vecernji.hr/](http://www.vecernji.hr/); 17/03/2020*

### **Integration of sales in the distribution system of Podravka**

One of the biggest competitive advantages on today's saturated markets is an effective system of product distribution. Podravka has its own distribution system on the domestic market, while the distribution in the export countries is done via external logistics provider. These are usually big national and regional enterprises, which cover big markets. Based on its distribution channels and strategic partners, foreign companies, Podravka achieved accessibility of its products in more than fifty countries on five continents (Croatia, Slovenia, Bosnia and Herzegovina, Serbia, Montenegro, Macedonia, Kosovo, Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Russia, Ukraine, Latvia, Lithuania, Estonia, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Austria, Germany, Switzerland, Sweden, Great Britain, Italy, USA and Canada, South America, Australia, China, United Arab Emirates, Middle East, West and East Africa and North Africa).

The sale of Podravka's products on foreign markets is organised through Podravka international enterprises, branches abroad, and sale representatives, whose seat is in the Republic of Croatia.

Besides that, their function is to coordinate marketing and logistics activities with external logistics providers.

The integration of brands, Eva and Mirela in Podravka's system of distribution, Mirna received an efficient and effective channel for sale of its products on domestic and foreign markets. Additional advantage in distribution is due to a broad assortment of Podravka's products, which makes it a desirable partner with supermarket chains, big consumers and the HORECA segment.

### **Reviving of brands and strong marketing support**

In addition to new technologies, significant funds have been invested in brand redesign and ongoing promotional support. As it was already mentioned, Mirna produces two brands of canned sardine, Eva and Mirela. The Eva brand, besides canned sardine, which is the key category within the brand, covers a broader assortment of products (canned mackerel and bluefin tuna, fish pates, fish salad and fish spread). In the assortment of Mirna, there are different variants of canned sardine (in vegetable oil, tomato sauce, and vegetables with tomato sauce).

Eva canned sardine has been present in Croatia and other countries of south-eastern Europe more than 40 years and occupied a leading position. From the 1990s, the brand did not have marketing support and lost its markets.

In 2006, Podravka bought the Eva brand from the company Adria, Zadar, and started a service production of canned fish. Parallely, the process of reviving the brand and its successful return to the domestic and foreign markets was initiated. Firstly, a redesign of the packaging was done. The new can is of a square shape and blue, which got, together with the unavoidable seal, the distinguishing element of the brand.





Figure 14: New packaging of the brands Eva and Mirela. Source: [www.podravka.hr](http://www.podravka.hr)

Eva brand is today positioned as a quality, natural and healthy product. Canned sardines are produced from the Adriatic sardine of best quality, in a traditional way, with a bit of added salt and oil, and are preserved with the thermal sterilization method. Eva cans do not contain additives and preservatives, and are rich in high-value proteins and minerals and contain polyunsaturated fats.

In the framework of the Eva brand strategy, the continuous innovations are a very important part. There is a newly developed line of delicatessen products: sardine with chilli, sun-dried tomato, rosemary and sea salt, and black olive etc.

Mirela is the original brand of Mirna. Mirela canned sardines are also highly positioned as healthy, natural and quality products. This brand has a somewhat modest packaging and is intended for the price sensitive consumers on the traditional markets of south-eastern Europe. Same as it is with Eva, the packaging was redesigned and the optimization of the assortment of the brand Mirela was done.

Podravka is continuously investing heavily in marketing of canned fish, with the Eva brand being much more promoted. In addition to traditional television advertising (Eva was the pioneer of domestic television advertising) and radio, significant investments are made in catalogs, sales, shelving products, social media advertising, and specialized gastro portals. Podravka often uses international evaluations and other PR activities to enhance consumer confidence and loyalty to the two brands.

### 7.3 Conclusion

By investing in technology, integrating product sales into an efficient distribution system and continuously investing in brand and promotion, Podravka has successfully consolidated the operations of the Mirna d.d. from Rovinj. Mirna has once again become a profitable company and its two brands Eva and Mirela have regained their leading positions in the old markets and successfully stepped into new ones.