

“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

D5.4.2 Policy recommendations

WP5: BUILDING UP VALUE CHAIN AND MARKETING OF ADRIATIC ECO-INNOVATIVE FISHERY PRODUCTS / A5.2 CONSUMER ATTITUDE TOWARDS ECO-INNOVATIVE SEAFOOD PRODUCTS

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1 INTRODUCTION

In this report, policy recommendations are produced at the end of a process that included research on the current policy interventions (including public funding priorities), discussion and prioritization among public institutions that are partners of the Prizefish project, and final presentation of the results to the final conference of the project¹

As explicated by the proposal of the project, the process was mainly meant to identify the main aspects where public institutions can intervene to foster the building up of Adriatic value chains, in particular through priorities in public funding.

In the next sessions, the current status and debate on Maritime Common Policy is firstly considered; then, the results of the internal discussion on priorities for the Adriatic area are presented; the deliverable is concluded with specific recommendations for the policy institutions of EU, Italy and Croatia.

¹ “Results of the PRIZEFISH project in the context of the condition and conservation of the Adriatic fisheries sector“, realized in Zadar and held on 29th November 2021 at 10:00 a.m. (also in ONLINE MODE), with intervention by The title of Luca Mulazzani, UNIBO, on Policy recommendations. See D.2.2.2

2 THE COMMON FISHERIES POLICY RECENT AND FUTURE DEVELOPMENTS

2.1 The evolution of a common European policy on fisheries

Born as a part of the Common Agricultural Policy (CAP), the Common Fisheries Policy (CFP) started with the same objectives of i) increasing productivity, ii) stabilizing markets, iii) guaranteeing a source of healthy food and iv) ensuring fair prices for consumers. However, throughout the years the CFP developed its own separate identity, especially after the introduction of a specific legislation and structural support for fisheries in the 1970s. Another important step towards the development of a common European policy on the subject was the adoption of the 1983 CFP regulation, which introduced conservation management strategies- like Total Allowable Catches (TACs) and quotas- and a structural policy aimed at managing fleet capacity. The 1992 and 2002 reforms of the CFP gradually established the concept of “rational and responsible exploitation” of resources, while considering the needs of the fishing industry to ensure its long-term development and socio-economic conditions and consumers’ interest, “taking into account the biological constraints as well as respect for the marine ecosystem”. The year 2008 was marked by the publication of the Green Paper on the reform of the CFP by the Commission. For the first time the text introduced concepts such as the maximum sustainable yield (MSY), transferable quotas and co-management, hence acknowledging the limits of the previous policies and the status of overfishing characterizing several stocks in EU waters. The current CFP was adopted in December 2013, becoming applicable as of 1 January 2014. One major innovation is related to the attention paid to the management of fisheries (whereas previous CFP regulations concerned solely stock conservation), and the inclusion of aquaculture. The shift towards a strong commitment on the sustainable management of fisheries resources is reflected by the 2013 CFP objective of achieving the MSY by 2015 where possible, and at the latest by 2020, and having healthy fish stocks. Moreover, the 2013 CFP marked a shift towards

- the inclusion of environmental, economic and social dimensions of fisheries;
- stock management at maximum sustainable yield by 2020 for all managed stocks;
- progressive application of the landing obligation by 2019;
- implementation of multiannual plans to manage fisheries in different sea basins;
- regionalization to allow EU countries with a management interest to propose measures that can be adopted by the Commission as delegated or implementing act and transpose them into EU law;

- caps on fleet capacity per EU country in combination with the obligation for member states to ensure a long-term balance between fishing capacity and fishing opportunities (EC, 2021a).

Table 1 provides some insights about the repartition of fleet capacity and catches among EU member states.

Table 1. EU fishing fleet (2019) and catches (2017) per Member State. Adapted from European Commission (2020).

MS	Number of vessels	%	Gross tonnage	%	Engine power in kW	%	Catches in tonnes live weight	%
BE	68	0.1%	12914	0.8%	42808	0.7%	24649.30	0.45%
BG	1842	2.3%	6044	0.4%	53703	0.9%	8558.81	0.16%
DK	2082	2.6%	71541	4.6%	209335	3.5%	904572.00	16.66%
DE	1315	1.6%	57732	3.7%	129328	2.1%	248178.82	4.57%
EE	1743	2.1%	15715	1.0%	46778	0.8%	82684.38	1.52%
IE	1924	2.4%	61156	3.9%	179462	3.0%	246823.57	4.55%
EL	14934	18.4%	71104	4.6%	426431	7.0%	78288.93	1.44%
ES	8886	10.9%	332787	21.5%	777264	12.8%	908161.83	16.73%
FR	6262	7.7%	173974	11.2%	960746	15.8%	530474.15	9.77%
HR	7605	9.4%	44036	2.8%	345090	5.7%	69934.07	1.29%
IT	12060	14.8%	146271	9.4%	930502	15.3%	196002.60	3.61%
CY	811	1.0%	3712	0.2%	38729	0.6%	1756.41	0.03%
LV	670	0.8%	17991	1.2%	35737	0.6%	118139.37	2.18%
LT	139	0.2%	40658	2.6%	47300	0.8%	73235.92	1.35%
MT	916	1.1%	6502	0.4%	72956	1.2%	2223.17	0.04%

NL	731	0.9%	99091	6.4%	245470	4.0%	363097.22	6.69%
PL	827	1.0%	32326	2.1%	80220	1.3%	225225.45	4.15%
PT	7791	9.6%	86945	5.6%	344925	5.7%	173601.63	3.20%
RO	165	0.2%	1533	0.1%	6350	0.1%	14998.18	0.28%
SI	137	0.2%	673	0.04%	8801	0.1%	265.60	0.005%
FI	3201	3.9%	15619	1.0%	170547	2.8%	190375.74	3.51%
SE	1211	1.5%	24547	1.6%	143753	2.4%	232632.79	4.29%
UK	5933	7.3%	228047	14.7%	768963	12.7%	723306.25	13.32%
EU 28	81253	100%	1550919	100%	6065198	100%	5428570	100%

The important variations that exist among European countries with regard to their fleets and production can also be found in the implementation of the CFP, since the process did not follow the same pace in the different EU basins. For instance, the 1983 CFP measures on TACs were not applied to the management of fish stocks in the Mediterranean Sea, where the first technical regulations were adopted only in 1994 (EU, 1994).

2.2 The 2013 Common Fisheries Policy (CFP)

After declaring i) the intent of ensuring a long-term sustainable balance between socio-economic and environmental objectives, ii) the application of the precautionary approach to fisheries management, iii) the respect of the MSY principle, iv) the implementation of an ecosystem-based approach and v) the support of scientific data collection, Article 2 of the regulation sets out the ten specific objectives of the CFP. These are:

1. gradually eliminating discards, reducing unwanted catches and ensuring that catches are landed;
2. making the best use of unwanted catches;
3. supporting the economic viability of the fishing industry;
4. adjusting fishing capacity while balancing environmental and economic needs;

5. supporting the development of sustainable aquaculture activities;
6. guaranteeing a fair standard of living for those who rely on fishing activities;
7. contributing to an efficient and transparent market for products from fisheries and aquaculture;
8. considering the interests of both producers and consumers;
9. supporting coastal fishing, also considering its social impact;
10. contributing to the achievement of a good environmental status by 2020, in coherence with other Union policies on environmental protection.

Among the various conservation measures that are envisaged in the CFP (like technical regulations limiting certain fishing gears), Articles 9 and 10 describe the principles, objectives and content of multiannual plans, which are intended to restore and maintain fish stocks above MSY levels (or apply the precautionary approach in case of data unavailability). Multiannual plans may concern either single species or fisheries exploiting more than one stock in the case of mixed fisheries. The measures included in multiannual plans should be proportionate to the declared objectives and time-frames, while “account shall be taken of their likely economic and social impact”. More specifically, multiannual plans should include i) the scope, in terms of stocks, fishery and the area of application, ii) objectives that are coherent with the objectives set out in Article 2 (CFP objectives) and with the relevant provisions of Articles 6 (general provisions for conservation measures) and 9 (principles and objectives of multiannual plans), iii) quantifiable targets like fishing mortality rates and/or spawning stock biomass, iv) precise time-frames to reach the scope, v) conservation reference points consistent with the provisions of Article 2, vi) objectives for conservation and technical measures in line with the targets established in Article 15 (landing obligation), and measures aimed at minimizing unwanted catches, vii) safeguards to ensure that quantifiable targets are met, as well as remedial action, like in those contexts where the low quality or unavailability of data constitute a threat to the stock. A multiannual plan may also include i) other conservation measures, especially to gradually eliminate discards or to minimize the negative impact of fishing on the ecosystem, ii) quantifiable indicators for regular monitoring and assessment, iii) where needed, precise targets for the freshwater part of the life cycle of anadromous and catadromous species. Moreover, “a multiannual plan shall provide for its revision after an initial ex-post evaluation, in particular to take account of changes in scientific advice”.

With the goal of avoiding and minimizing unwanted catches in European fisheries, Article 15 of the CFP introduces the landing obligation (LO), to be applied from 2015 and fully in force since January 2019. According to Article 15, “all catches of species which are subject to catch limits and, in the Mediterranean, also catches of species which are subject to minimum sizes as defined in Annex III to Regulation (EC) No 1967/2006, caught during fishing activities in Union waters or

by Union fishing vessels outside Union waters in waters not subject to third countries' sovereignty or jurisdiction, in the fisheries and geographical areas listed below shall be brought and retained on board the fishing vessels, recorded, landed and counted against the quotas where applicable, except when used as live bait". Nevertheless, the same article specifies that the landing obligation should not be applied to i) species with high survival rates, ii) species whose fishing is prohibited and iii) catches falling under de minimis exemptions (e.g. those cases where improvements in selectivity are very hard to achieve or there is a disproportion between the costs of handling unwanted catches and their weight in the total catches of the fishing gear). The LO marked a shift from a "landing" to a "catch quota" system, but the process has resulted to be more challenging for some fisheries than others (EC, 2021c). Some examples of actions pursued by Member States to respect the LO obligation include selective gear trials, weekly catch limits, avoidance (or "move-on" rules), changes to national quota management and initiatives to increase survivability, improve accountability and quota alignment. The report by the European Commission on the subject claims that other measures such as areal closures, TAC removals and changes to minimum conservation sizes were considered by stakeholders to be less effective. However, it is held that overall "the estimated discard rates did not show clear trends or patterns as a response to the implementation of the LO. The short time-series of available information in combination with the highly variable nature of discard data could explain this" (EC, 2021c). Hence, maintaining scientific sampling programmes to evaluate modifications in discard rates is a priority to understand the effectiveness of the LO.

Articles 21-24 concern the management of fishing capacity. In particular, Member States "may establish a system of transferable fishing concessions" (Article 21) and they "shall manage entries into their fleets and exits from their fleets in such a way that the entry into the fleet of new capacity without public aid is compensated for by the prior withdrawal of capacity without public aid of at least the same amount (Article 24). Articles 25-28 cover the scientific base for fisheries management (data requirements, consultation of scientific bodies and the development of fisheries and aquaculture research and innovation national programmes), while Articles 28-32 are concerned with the external policy of the EU on fisheries, which is based on six pillars: i) support of scientific knowledge and advice, ii) improvement of policy coherence of Union initiatives on the environment, trade and development cooperation, iii) promotion of sustainable and economically viable fishing activities, iv) application of the same rules to Union fishing activities outside Union waters and promotion of a level-playing field for Union operators vis-à-vis third-country operators, v) eradication of Illegal, Unreported and Unregulated (IUU) fishing, vi) empowerment of Regional Fisheries Management Organisations (RFMOs).

With regard to aquaculture, Article 34 states that "with a view to promoting sustainability and contributing to food security and supplies, growth and employment, the Commission shall

establish non-binding Union strategic guidelines on common priorities and targets for the development of sustainable aquaculture activities”. Such strategic guidelines should aim at improving the competitiveness of the aquaculture industry, reducing the administrative burden on stakeholders and encouraging economic activity while taking into account opportunities for diversification and integration of aquaculture into spatial planning plans. Member States are hence urged to establish multiannual strategic plans for aquaculture activities on their territory. Article 35 deals with the establishment of a common market organization (which shall include market stabilization measures, production and marketing plans of producer organisations, common marketing standards and consumer information), in order to improve the competitiveness of the industry while promoting a sustainable exploitation of resources. The importance of ensuring both a balanced distribution of added value along the supply chain and the availability of information regarding the origin of the product is highlighted throughout the text. Lastly, the remaining articles cover the financial assistance that the EU shall provide to both Member States and operators to reach the objectives of the CFP (Articles 40-43) and the establishment of additional Advisory Councils (Article 43).

2.3 The European Maritime and Fisheries Fund

Together with other four European Structural and Investment Funds (ESIF), the European Maritime and Fisheries Fund (EMFF) was meant to support the economic recovery of the EU during the period 2014-2020. The fund was provided with a budget of € 6.4 billion (5.7 billion of which allocated to the Member States to be used under their responsibility in shared management). The EMFF was conceived “to support the CFP in the conservation of the biological resources involved in marine and freshwater activities, in the management of all fishing activities exploiting those resources, and in the processing and marketing of fisheries and aquaculture products” (Utizi et al., 2018). More specifically, the EMFF rested on six main priorities with different levels of absorption of the total budget (Article 6):

- 1- Sustainable fisheries (26.9% of the budget);
- 2- Sustainable aquaculture (21%);
- 3- Implementing the CFP (19.1%);
- 4- Marketing and processing (17.6%);
- 5- Employment and territorial cohesion (9%);
- 6- Integrated maritime policy (1.2%).

The remaining 5.1% was devoted to the technical assistance needed “to help the implementation of the programmes and improve the administrative capacity of the Member States”. Apart from the 11% of the total budget controlled directly by the Commission, the majority of funds (89%)

were distributed among Member States according to the size of their fishing industry and then managed by national authorities through operational programmes (OPs), to be approved by the European Commission. The OP document to be submitted to the Commission would have to include i) a description of the elaboration process and the involvement of partners, ii) a SWOT analysis and the identification of needs, iii) a description of the strategy, iv) the requirements for specific EMFF measures, v) information on integrated territorial development, vi) the fulfilment of ex ante conditionalities, vii) a description of the performance framework, viii) a financing plan, ix) the respect of horizontal principles, x) an evaluation plan, xi) programme implementing arrangements, xii) the bodies responsible for control, inspection and enforcement, xiii) the system of data collection and xiv) the planned use of financial instruments. The EMFF regulation also set out the types of measures that could be financed. Table 2 summarizes the projects that could be supported through EMFF funds under shared management (Title V of the regulation), and the Union Priority (UP) they would be included in.

Table 2. Measures financed under shared management in the EMFF. Source: EU (2014).

UP1- Sustainable development of fisheries	UP2- Sustainable development of aquaculture	UP3- Implementing the CFP
<ul style="list-style-type: none"> - Innovation (Art. 26) - Advisory services (Art. 27) - Partnerships between scientists and fishermen (Art. 28) - Promotion of human capital, job creation and social dialogue (Art. 29) - Income diversification (Art. 30) - Start-up support for young fishermen (Art. 31) - Health and safety conditions (Art. 32) 	<ul style="list-style-type: none"> - Innovation (Art. 47) - Productive investments (Art. 48) - Management, relief and advisory services (Art. 49) - Promotion of human capital and networking (Art. 50) - Increasing the potential of aquaculture sites (Art. 51) - setting-up of sustainable aquaculture enterprises by new farmers (Art. 52) - Conversion to eco-management and audit 	<ul style="list-style-type: none"> - Control and enforcement (Art. 76) - Data collection (Art. 77) - Further eligible operations were possible under direct management (Title VI)

<ul style="list-style-type: none"> - Temporary/permanent cessation of fishing activities (Art. 33,34) - Mutual funds for adverse climatic events and environmental incidents (Art. 35) - Support for the systems of allocation of fishing opportunities (Art. 36) - Support for the design and implementation of conservation measures and regional cooperation (Art. 37) - Limitation of the impact of fishing on the marine environment and adaptation of fishing to the protection of species (Art. 38) - Innovation linked to the conservation of marine biological resources (Art. 39) - Protection and restoration of marine biodiversity and ecosystems and compensation regimes in the framework of sustainable fishing activities (Art. 40) - Energy efficiency and mitigation of climate change (Art. 41) - Added value, product quality and use of unwanted catches (Art. 42) 	<p>schemes and organic aquaculture (Art. 53)</p> <ul style="list-style-type: none"> - Provision of environmental services (Art. 54) - Suspensions due to reasons of public health (Art. 55) - Animal health and welfare measures (Art.56) - Aquaculture stock insurance (Art. 57) 	
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<ul style="list-style-type: none"> - Fishing ports, landing sites, auction halls and shelters (Art. 43) - Inland fishing and inland aquatic fauna and flora (Art. 44) 		
<p>UP4- Sustainable development of fisheries and aquaculture areas</p> <ul style="list-style-type: none"> - Implementation of community-led local development strategies (Art. 63) - Cooperation activities (Art. 64) 	<p>UP5- Marketing and processing</p> <ul style="list-style-type: none"> - Production and marketing plans (Art. 66) - Storage aid (Art. 67) - Marketing measures (Art. 68) - Investments in the processing of fishery and aquaculture products (Art. 69) 	<p>UP6- Supporting the Integrated Maritime Policy (IMP)</p> <ul style="list-style-type: none"> - Actions promoting the objectives of the Integrated maritime surveillance (IMS) and the Common information sharing environment (CISE) (Art. 80) - Marine environments monitoring and protection programmes (Art. 80) - Further eligible operations were possible under direct management (Title VI)

In order to provide for a demonstration of how Member States would translate such UPs into their OPs, what follows is a summary of Italy's programme for the EMFF period 2014-2020. In particular, the budget was distributed among the six priorities in the following way:

- Union Priority 1: € 346,111,570.00 (34.5% of the total OP allocation). The projects to be financed would mainly cover the overcapacity of the fleet, the respect of the MSY principle, increases in gear selectivity, aid for temporary and permanent cessation, modernization of infrastructures, possibilities for income diversification and partnerships with the scientific sector. Specific measures would be tailored to support small-scale fishing activities.
- Union Priority 2: € 221,134,830.00 (22.6% of the total OP allocation). The EMFF would support actions to achieve the targets set by the multiannual national strategic plan for

aquaculture in Italy 2014-2020. These included the enhancement of the competitiveness and viability of aquaculture farms, the protection and restoration of aquatic biodiversity and ecosystems and the support for innovations related to an efficient use of resources.

- Union Priority 3: € 120,335,674.00 (12.3% of the total OP allocation). This part of the EMFF was devoted to data collection and management as well as operations supporting monitoring, control and enforcement.
- Union Priority 4: € 84,860,000.00 (8.7% of the total OP allocation), aiming at fostering the economic and social sustainability of Italian fisheries and aquaculture areas, the creation of jobs and diversification possibilities within and/or outside the sector and the elaboration of comprehensive local development strategies.
- Union Priority 5: € 138,088,028.00 (14,1% of the total OP allocation) to be spent on “measures dedicated to fostering marketing and processing and in the phasing out of storage aid”.
- Union Priority 6: € 8,891,120.00 (0.9% of the total OP allocation) would be invested in “measures under integrated maritime policy aiming at improving CISE and the knowledge on the marine environment”.
- Technical Assistance: € 58,686,460.00 (6% of the total OP allocation).

Summing up, it results that Italy’s 2014-2020 had a total budget of € 978,107,682.00. The contribution from the EU amounted to € 537,262,559.00, while the national budget would cover the remaining € 440,845,123.00.

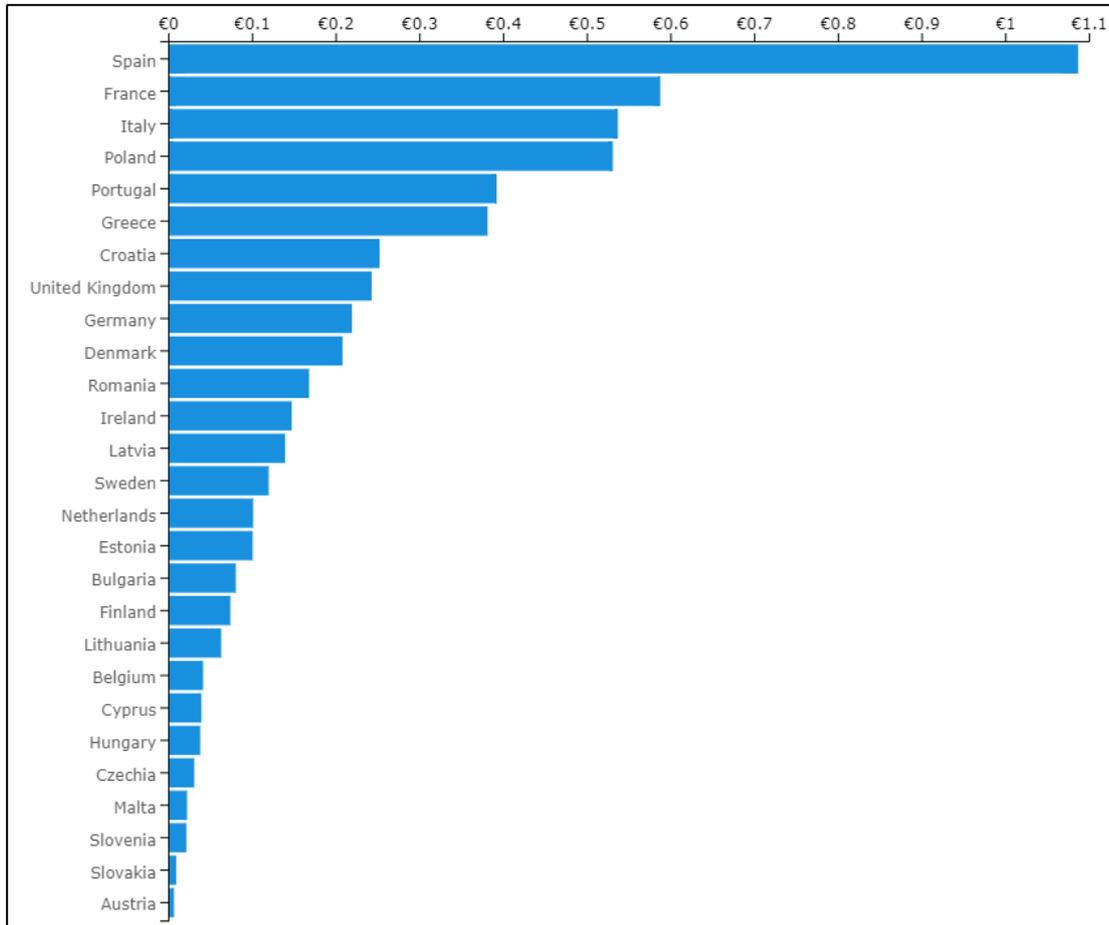


Figure 1. EMFF total budget by Member State. Source: European Commission (2021).

The latest report by the FAME (Fisheries and Aquaculture Monitoring and Evaluation) unit, in support of the European Commission’s Directorate-General for Maritime Affairs and Fisheries (DG MARE), provides us with very detailed insights regarding the use that Member States made of the EMFF financial support during the programming period 2014-2020. In summary, “by the end of 2020, EUR 4.1 billion of EMFF support had been committed to operations in the Member States. This corresponds to 71.6% of the total EMFF envelope of EUR 5.69 billion available under shared management”. Approximately 46% of all EMFF support (€ 1.9 billion) was related to the

objective of increasing the competitiveness of small and medium-sized enterprises (SMEs), while € 1.5 billion (37% of all EMFF support) contributed to the preservation and protection of the environment. The remaining € 0.7 billion has been allocated to a variety of topics, in particular the promotion of quality employment and labour mobility. With regard to the specific measures supported by EMFF funds, “six of the 51 measures in the EMFF account for nearly EUR 2.43 billion, or 60% of all EMFF funding committed to date. These are: data collection (EUR 482 million), productive investments in aquaculture (EUR 440 million), control (EUR 439 million), processing of fisheries and aquaculture products (EUR 404 million), local development strategies (EUR 353 million), and fishing ports (EUR 313 million)”. Moreover, the report stresses the impact of the COVID-19 pandemic crisis on the implementation of operational programmes. On the one hand, 32 OP modification decisions were adopted by the Commission to respond to the challenges posed by the pandemic (like delays in the implementation of projects, falling landing values and challenges with the import and export of goods and raw materials, among others). On the other, it should be stressed that the “COVID-19 pandemic mitigation measures in many cases boosted OP implementation and the absorption of funds”. Tables 3 and 4 show the levels of implementation of the EMFF in relation with UPs and sea basins. With concern to the Adriatic Sea, Table 5 illustrates the top five measures in Italy and Croatia according to the EMFF amount committed.

Table 3. EMFF implementation per Union Priority. Adapted from European Commission (2021b).

UP	Total EMFF allocation by 31/12/20	Total EMFF committed by Managing Authority by 31/12/20	Commitment rate	Total eligible EMFF expenditure declared by beneficiaries to the Managing Authority	Absorption rate	Number of operations
UP1	1,492,533,195 €	1,078,725,002 €	72.30%	591,381,059 €	39.60%	40266
UP2	1,124,690,222 €	754,785,986 €	67.10%	365,161,949 €	32.50%	8562
UP3	1,093,894,229 €	921,678,745 €	84.30%	626,593,764 €	57.30%	1013
UP4	547,691,820 €	364,319,194 €	66.50%	163,237,517 €	29.80%	8666
UP5	1,078,850,376 €	715,555,478 €	66.30%	480,038,293 €	44.50%	8176
UP6	72,890,432 €	55,730,571 €	76.50%	23,521,192 €	32.30%	230
Technical assistance	286,529,073 €	185,627,882 €	64.80%	117,162,162 €	40.90%	1499
Total	5,697,079,346 €	4,076,422,857 €	71.60%	2,367,095,937 €	41.50%	68412

Table 4. EMFF implementation per sea basin. Adapted from European Commission (2021b).

Sea basin	Total EMFF allocation by 31/12/20 €	Total EMFF committed by Managing Authority by 31/12/20 €	Commitment rate	Total eligible EMFF expenditure declared by beneficiaries to the Managing Authority €	Absorption rate	Number of operations
Atlantic	2,502,146,056 €	1,633,127,991 €	65.30%	1,078,132,275 €	43.10%	26552
Baltic	1,030,005,010 €	809,269,783 €	78.60%	481,116,819 €	46.70%	15285
Black sea	249,245,098 €	214,172,683 €	85.90%	72,260,048 €	29.00%	953
Landlocked	88,298,056 €	67,824,768 €	76.80%	33,578,673 €	38.00%	1352
Mediterranean	1,256,164,135 €	884,733,038 €	70.40%	416,147,985 €	33.10%	18338
North sea	571,220,991 €	467,294,595 €	81.80%	285,860,136 €	50.00%	5932
Total	5,697,079,346 €	4,076,422,857 €	71.60%	2,367,095,937 €	41.50%	68412

Table 5. Top five measures in Italy and Croatia according to the EMFF amount committed. Adapted from European Commission (2021b).

MS/Top 5 EMFF measures	Total EMFF committed by Managing Authority by 31/12/19	Total eligible EMFF expenditure declared by beneficiaries to the Managing Authority	Number of operations
IT			
Article 34 (<i>permanent cessation</i>)	52,194,529 €	27,465,477 €	351
Article 77 (<i>data collection</i>)	46,717,934 €	37,742,064 €	6
Article 69 (<i>processing</i>)	38,376,060 €	22,640,655 €	292
Article 76 (<i>control and enforcement</i>)	31,778,408 €	23,298,722 €	2
Article 48(1) (a) to (d) and (f) to (h) (<i>productive investments in aquaculture</i>)	27,182,759 €	13,513,544 €	385
Other	159,988,669 €	68,963,789 €	10491
Total	356,238,359 €	193,624,252 €	11527
TOP 5 measures total	196,249,691 €	124,660,463 €	1036
TOP 5 / Total	55.10%	64.40%	9.00%

EMFF OP allocation	537,262,559 €		
Total number of measures	42		
HR			
Article 76 (<i>control and enforcement</i>)	27,302,173 €	11,212,438 €	4
Article 63 (<i>CLLD</i>)	21,079,002 €	2,317,142 €	98
Article 69 (<i>processing</i>)	18,930,203 €	13,976,831 €	59
Article 33 (<i>temporary cessation</i>)	15,503,352 €	14,911,929 €	2176
Article 48(1) (a) to (d) and (f) to (h) (<i>productive investments in aquaculture</i>)	14,170,809 €	10,473,921 €	72
Other	76,874,070 €	45,408,576 €	789
Total	173,859,608 €	98,300,837 €	3198
TOP 5 measures total	96,985,538 €	52,892,261 €	2409
TOP 5 / Total	55.80%	53.80%	75.30%
EMFF OP allocation	252,643,138 €		
Total number of measures	26		

2.4 The European Maritime, Fisheries and Aquaculture Fund (EMFAF)

The new EMFAF entered into force on July 14 2021 and it will run until 2027. As its predecessor, the fund is meant to foster the implementation of the CFP, the EU maritime policy and the EU agenda for international ocean governance. The total budget for the programming period is € 6.108 billion, to be divided between shared (€ 5.311 billion) and direct (€ 797 million) management. Under shared management, Member States receive the same percentage of the budget as during the programming period 2014-2020. Table shows the resources of the budget allocated to Italy and Croatia during the period from January 1 2021 to 31 December 2027.

Table 6. EMFAF resources allocation to Italy and Croatia. Adapted from EU (2021b).

	2021	2022	2023	2024	2025	2026	2027	Total
Italy	63,388,749 €	84,665,656 €	81,321,871 €	77,868,885 €	69,058,907 €	70,402,853 €	71,509,909 €	518,216,830 €
Croatia	29,808,019 €	39,813,303 €	38,240,917 €	36,617,179 €	32,474,362 €	33,106,342 €	33,626,925 €	243,687,047 €
Total EU	649,646,302 €	867,704,926 €	833,435,808 €	798,047,503 €	707,757,512 €	721,531,085 €	732,876,864 €	5,311,000,000 €

With regard to the rate of EMFAF support under shared management, the maximum rate of public aid for beneficiaries is set at 50%. However, there are some exceptions like certain specific on-board individual investments for fishing vessels (maximum 40%), projects combining innovation, collective interest and protection of marine biodiversity (up to 100%) and actions targeting small-scale fishermen (who can claim 100% support for the majority of projects). There exists an upper cap on the co-financing rate (i.e. the share paid by the EMFAF in the total public expenditure of a project) of 70%, which is extended to 100% in the case of compensations in the outermost regions to cover additional costs. In the FAQ document published by the Commission to guide the study of the regulation, it is claimed that the EMFAF has a simpler and more effective structure compared to the 2014-2020 EMFF for the following reasons:

- It has 4 priorities (rather than 6) setting the overall scope of support in line with the objectives of the CFP, the EU maritime policy and the EU agenda for international ocean governance:
 - (1) fostering sustainable fisheries and the restoration and conservation of aquatic biological resources;
 - (2) fostering sustainable aquaculture activities, and processing and marketing of fishery and aquaculture products, thus contributing to food security in the Union;
 - (3) enabling a sustainable blue economy in coastal, island and inland areas, and fostering the development of fishing and aquaculture communities;

- (4) strengthening international ocean governance and enabling seas and oceans to be safe, secure, clean and sustainably managed.
- Each priority contains specific objectives, which indicate the operational scope of support along thematic areas (e.g. protection of biodiversity, promotion of sustainable aquaculture, collection of scientific data).
 - There are limited eligibility rules at EU level. It is up to EU Member States to elaborate in their operational programmes the means for achieving the objectives set in line with the 4 priorities. They are granted flexibility in setting the eligibility rules.
 - Some types of subsidies are subject to conditions and restrictions. The EMFAF Regulation includes a list of ineligible operations that may have a negative impact on the sustainability of the sector (e.g. investments increasing fishing capacity). Furthermore, certain categories of subsidies to the fishing fleet are dependent upon the demonstration that they are consistent with the objectives of the CFP (e.g. a new engine installed on a fishing vessel cannot have more power than that being replaced).
 - Performance monitoring. The implementation of the EMFAF is monitored with output and result indicators and each year Member States must report on the progress made towards meeting targets established, sharing with the Commission the status of the programme implementation. This allows for an early detection of potential implementation issues, thus identifying the remedial actions needed.

Moreover, it could be added that the more agile structure of the new regulation is confirmed when comparing the text of the two regulations (66 articles in the EMFAF, 130 articles in the EMFF).

An important point to be made concerns the reference- which is present in the EMFAF but was not in the EMFF- to a “sustainable blue economy”, which is defined as “all sectoral and cross-sectoral economic activities throughout the internal market relating to oceans, seas, coasts and inland waters, covering the Union’s insular and outermost regions and landlocked countries, including emerging sectors and non-market goods and services, aimed at ensuring environmental, social and economic sustainability in the long term and which are consistent with the SDGs, and in particular SDG 14, and with Union environmental legislation”, hence highlighting the contribution of the EMFAF to the realization of the Blue Growth agenda of the EU. Indeed, the term blue appeared only once in the EMFF regulation, while its search in the EMFAF text leads to forty results.

With regard to the sustainable management of fisheries in EU waters (Priority 1), Table 7 summarizes the specific objectives and the type of operations eligible for support under shared management.

Table 7. Specific objectives and eligible operations under Priority 1 in the EMFAF.
Source: EU (2021b).

Fostering sustainable fisheries and the restoration and conservation of aquatic biological resources	
Specific objectives (Article 14)	Eligible operations and specific conditions (Articles 17-25)
<ul style="list-style-type: none"> - Strengthening economically, socially and environmentally sustainable fishing activities - Increasing energy efficiency and reducing CO2 emissions through the replacement or modernisation of engines of fishing vessels - Promoting the adjustment of fishing capacity to fishing opportunities in cases of permanent cessation of fishing activities and contributing to a fair standard of living in cases of temporary cessation of fishing activities - Fostering efficient fisheries control and enforcement, including fighting against IUU fishing, as well as 	<ul style="list-style-type: none"> - First acquisition of a fishing vessel - Replacement or modernisation of a main or ancillary engine - Increase in the gross tonnage of a fishing vessel to improve safety, working conditions or energy efficiency - Permanent cessation of fishing activities - Temporary cessation of fishing activities - Control and enforcement - Collection, management, use and processing of data in the fisheries sector, and research and innovation programmes - Promoting a level-playing field for fishery and aquaculture products from the outermost regions

<p>reliable data for knowledge-based decision making</p> <ul style="list-style-type: none"> - Promoting a level-playing field for fishery and aquaculture products from the outermost regions - Contributing to the protection and restoration of aquatic biodiversity and ecosystems 	<ul style="list-style-type: none"> - Protection and restoration of aquatic biodiversity and ecosystems
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To conclude, it is worth mentioning the importance attributed to the empowerment of local actors for the sustainable development of coastal communities through an approach known as community-led local development (CLLD), which has been present in the Union structural policy since 2007. In this regard, the EU has promoted the formation of Fisheries Local Action Groups (FLAGs), which can be described as local partnerships bringing together the private sector, local authorities and civil society organizations, which have been responsible for the implementation of CLLD in European fisheries. The area-based approach of CLLD was included in Priority 4 under the EMFF while it is now covered by Priority 3 in the EMFAF. It is up to FLAGs to elaborate local development strategies, focusing on fisheries and aquaculture activities as well as diversification possibilities for coastal communities. However, Article 63 of the EMFF set out five specific objectives for which CLLD strategies may be granted support, namely i) adding value, creating jobs, attracting young people and promoting innovation at all stages of the supply chain of fishery and aquaculture products; ii) supporting diversification inside or outside commercial fisheries, lifelong learning and job creation in fisheries and aquaculture areas; iii) enhancing and capitalising on the environmental assets of the fisheries and aquaculture areas, including operations to mitigate climate change; iv) promoting social well-being and cultural heritage in fisheries and aquaculture areas, including fisheries, aquaculture and maritime cultural heritage; v) strengthening the role of fisheries communities in local development and the governance of local fisheries resources and maritime activities. Preparatory support, cooperation activities, running costs and animation were also mentioned among the operations eligible for support. On the contrary, Article 30 of the EMFAF is far less comprehensive, since it only refers to articles to Articles 31 (“Community-led local development”, containing general requirements on CLLD, such as a balanced representation of interest groups in decision-making) and 32 of Regulation (EU)

2021/1060. In particular, Article 32 prescribes the elements that CLLD strategies should include. These are:

- the geographical area and population covered by that strategy;
- the community involvement process in the development of that strategy;
- an analysis of the development needs and potential of the area;
- the objectives of that strategy, including measurable targets for results, and related planned actions;
- the management, monitoring and evaluation arrangements, demonstrating the capacity of the local action group to implement that strategy;
- a financial plan, including the planned allocation from each Fund, and also, where appropriate, the planned allocation from the European Agricultural Fund for Rural Development (EAFRD) and each programme concerned. It may also contain types of measures and operations to be financed by each affected Fund.

Moreover, “the relevant managing authorities shall define criteria for the selection of those strategies, set up a committee to carry out this selection and approve the strategies selected by that committee”. Through the participation of stakeholders from multiple sectors in their CLLD strategies, the 348 FLAGs (as of 2021), distributed among 19 Member States, have been taking charge of the implementation of both sectoral and territorial development- thus tackling those social impacts of the CFP that used to be neglected in favor of biological and economic priorities (Piñeiro-Antelo et al., 2019).

2.5 The EMFAF Operational Programme in Italy

Although at the moment of writing (December 2021) the final national OP is not available yet, throughout the year 2021 three rounds of meetings with different representatives of the partnership responsible for the elaboration of the PO took place, leading to a provisional draft approved in September 2021. From this draft it is possible to discern some changes in the weight given to the different priorities with respect to the previous 2014-2020 programme. Even if there has been a reduction in the number of Union Priorities from the EMFF to the EMFF and hence they are not directly comparable, by looking at their objectives it is possible to compare the changes in the percentage of the OP budget allocated to some specific measures.

Table 8. Proposed allocation of EU funds for the implementation of the EMFAF in Italy. Source: Italian Ministry of Agricultural, Food and Forestry Policies (2021).

Priority	Specific objective	Support from the EU	National support	Total support	Co-financing rate
1	Strengthening economically, socially and environmentally sustainable fishing activities (excluding Articles 17 ² and 19 ³)	69,500,000 €	69,500,000 €	139,000,000 €	50.0
	Strengthening economically, socially and environmentally sustainable fishing activities (only Articles 17 and 19)	9,000,000 €	9,000,000 €	18,000,000 €	50.0
	Increasing energy efficiency and reducing CO2 emissions through the replacement or modernisation of engines of fishing vessels	2,500,000 €	2,500,000 €	5,000,000 €	50.0
	Promoting the adjustment of fishing capacity to fishing opportunities in cases of permanent cessation of fishing activities and contributing to a fair standard of living in cases of temporary cessation of fishing activities	51,000,000 €	51,000,000 €	102,000,000 €	50.0
	Fostering efficient fisheries control and enforcement, including fighting against IUU fishing, as well as reliable data for knowledge-based decision making	86,000,000 €	36,857,143 €	122,857,143 €	70.0
	Promoting a level-playing field for fishery and aquaculture products from the outermost regions	€ -	€ -	€ -	0.0
	Contributing to the protection and restoration of aquatic biodiversity and ecosystems	40,000,000 €	40,000,000 €	80,000,000 €	50.0

² First acquisition of a fishing vessel.

³ Increase in the gross tonnage of a fishing vessel to improve safety, working conditions or energy efficiency.

2	Promoting sustainable aquaculture activities, especially strengthening the competitiveness of aquaculture production, while ensuring that the activities are environmentally sustainable in the long term	77,000,000 €	77,000,000 €	154,000,000 €	50.0
	Promoting marketing, quality and added value of fishery and aquaculture products, as well as processing of those products	93,216,474 €	93,216,474 €	186,432,948 €	50.0
3	Enabling a sustainable blue economy in coastal, island and inland areas, and fostering the development of fishing and aquaculture communities	51,907,347 €	51,907,347 €	103,814,694 €	50.0
4	Strengthening sustainable sea and ocean management through the promotion of marine knowledge, maritime surveillance or coast guard cooperation	7,000,000 €	7,000,000 €	14,000,000 €	50.0
Technical assistance	Provide financing for carrying out, inter alia, functions such as preparation, training, management, monitoring, evaluation, visibility and communication (According to Art. 36 of Regulation (EU) 2021/1060)	31,093,009 €	31,093,009 €	62,186,018 €	50.0

A first comparison can be made with regard to the previous UP4, now UP3, which concerns the sustainable development of fisheries and aquaculture areas. Its weight within the 2021-2027 programming period may increase from 8.7% to 10.5%. In particular, in the document it is proposed to divide the EU funding support in the following way: 1.9% for CLLD preparation, 74.6% for CLLD implementation and 23.5% for CLLD management and operation costs. Based on the SWOT analysis contained in the OP draft, the renewed importance attributed to CLLD in the EMFAF confirms Italy's commitment to overcome the financial limits of the previous 2014-2020 programming period by reducing the number of FLAGs in the national territory and fostering the realization of more effective projects (involvement of local banks in the partnerships, collaborations with other sectors of the Blue Economy, coordination with other Union funds..). Regarding the OP allocation to technical assistance, it remains stable around 6% as prescribed by the Common Provision Regulations (Regulation (EU) 2021/1060). The allocation to measures regarding the promotion of marketing and processing of fisheries and aquaculture products (former UP5, now as a specific objective within UP2) is supposed to increase from 14.1% in the 2014-2020 period to 18.9% of the OP allocation. Other important changes in the repartition of EU funds may concern measures for "compensation for unexpected environmental, climatic or

public health events” affecting fisheries (from € 2,000,000.00 to € 3,500,00.00), permanent cessation (from € 33,081,144.00 to € 27,000,000.00) and temporary cessation of fishing activities (from € 18,674,840.00 to € 24,000,000.00).

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3 PROPOSED FUNDING PRIORITIES AND POLICY RECOMMENDATIONS FOR THE ADRIATIC SEA

The five public institutions⁴ involved as partners in the Prizefish project have been consulted in order to provide their opinion on the public funding priorities to foster the building up of Adriatic value chains. Each institution chose a representant (see the list name at the beginning of the report) to answer a simple questionnaire where two actions had to be done, starting from a list of hypothetical measures for public funding:

- 1) Score the measures' relevance from 1 to 10 (1=not at all relevant; 10=very relevant), which could be used as an index for the allocation of public funding.
- 2) Provide for every measure a theme/argument that looks particularly relevant for the Adriatic Sea, expressing it as a hypothetical project proposal (title or key words)⁵.

The measures were chosen by the University of Bologna team starting from the those adopted by the European Maritime and Fisheries Fund (EMFF) for 2014-2020, and are:

- **Innovation:** projects to improve or innovate products, equipment, production processes and techniques and management and organisational systems.
- **Consultancy services:** feasibility studies of projects and consultancy services concerning sustainability and business strategies.
- **Partnerships between scientific experts and fishermen:** networks, partnerships and associations between scientific bodies and industry organizations.
- **Promoting human capital, job creation and social dialogue:** vocational training, the dissemination of knowledge and the acquisition of new skills, as well as the exchange of good practices and social dialogue.
- **Diversification and new forms of income:** development of complementary activities such as tourism linked to sport fishing, catering, environmental services and educational activities.
- **Support for the starting-up of young fishermen:** support to young fishermen starting up a business.
- **Health and safety:** investments to improve hygiene, health and safety on board, providing they go beyond the requirements established by law.

⁴ Zadar County; Assam - Agency for Agrofood Sector Services of Marche; Ministry of Agriculture of the Republic of Croatia; Public Institution RERA S.D. for coordination and development of Split-Dalmatia County; Emilia Romagna Region

⁵ Respondents were asked to be specific (for example indicating specific fishing gears, or species, or geographic areas).

- **Temporary cessation:** cessation of fishing activities as emergency and species conservation measures.
- **Permanent cessation:** permanent cessation of fleet segments in excess of fishing opportunities through the scrapping of fishing vessels or their conversion to other activities.
- **Mutual funds for adverse climatic events and environmental emergencies:** contribution to the establishment of mutual funds to support fishermen who suffer economic losses caused by severe climatic events, environmental emergencies or accidents during fishing activities.
- **Supporting the system of allocation of fishing opportunities:** support to the design, development, monitoring, assessment and management of systems for the allocation of fishing opportunities.
- **Limiting the impact of fishing and adapting fishing to the protection of species:** investments in improved equipment that helps the selectivity of catches and reduces the impact on the ecosystem.
- **Protection and restoration of marine biodiversity, ecosystems and compensation schemes in the context of sustainable fishing activities:** support to actions such as: the collection of waste at sea by fishermen; the construction, installation or modernisation of fixed or movable elements to protect and enhance marine fauna and flora; the preparation and updating of protection and management plans for fisheries in NATURA 2000 sites and areas subject to special protection measures.
- **Energy efficiency and climate change mitigation:** investments in studies and equipment that reduce polluting emissions as well as in the replacement or modernisation of main or auxiliary engines.
- **Added value, product quality and use of unwanted catches:** investments that allow fishermen to process and market their catches directly, as well as investments in on-board innovations to increase quality.
- **Ports, landing sites, auction rooms and fishing shelters measures** to improve the infrastructure of fishing ports, auction rooms and landing sites.
- **Supporting participatory local development:** support to the implementation, cooperation and management and animation costs of participatory local development strategies proposed by the FLAG local action groups.
- **Production and marketing plans:** support to the preparation and implementation of production and marketing plans.
- **Storage aid:** payment of compensation to recognised producer organisations and associations of producer organisations that store fishery products in accordance with the conditions laid down in the Regulation.

- **Marketing measures:** marketing measures for fishery and aquaculture products in order to: create producer organisations and associations; find new markets and improve market access conditions; promote quality; increase the transparency of production and markets; contribute to product traceability; and carry out communication and promotion campaigns.
- **Processing of fishery and aquaculture products:** interventions for the processing of products that: contribute to energy saving; improve safety and hygiene; support the processing of fish not intended for human consumption; implement the processing of by-products of the main activities; refer to the processing of products from organic aquaculture; that create new or improved products, processes, management systems and organization.

Table 9 shows the results obtained aggregating the information provided by the five experts (the single opinions are not included). The scores are presented in three ways:

- 1) The general average scores.
- 2) The average scores by Italy and Croatia. This separation can be important to identify priorities that are considered relevant in one of the two countries but not in the other one.
- 3) The minimum and maximum scores. This detail permit to distinguish measures for which the opinion is common from those where the experts' opinion is discordant.

The table has been ordered on the base of the general average score, starting from the measures that are considered primary. For convenience, the table has been divided into four areas of different color: in green (scores > 8,8) we find the measures that are considered more urgent and important, for which there is general agreement among experts; in blue (scores: 7,8-8) we find other important measures, for which, however, the opinion is not always unambiguous among experts; measures in orange (scores 7-7,5) are considered of lesser importance; finally, measures in red (scores < 6,3) are not well judged, event if important differences can be found at country level.

The table also includes, for each measure, some of the important topics indicated by the experts, without making distinction by country.

“Green” measures (score > 8,8)

The most valued measures include a mix of six heterogeneous interventions. Three of them are specifically related to infrastructures and services that are often provided by public institutions,

such as the *promotion of human capital and job creation* (the only measure obtaining “10” scorers by all the experts), *the support for the starting-up of young fishers*, *the development of ports and auction rooms*.

In the framework of human capital promotion and support for young fishers, experts have included education courses and continuing education for sea-jobs creation and innovation, as well as economic and professional aid to starting up new businesses (including aid to buy new vessels). On the other hand, the development of ports and auction rooms has been associated with fish waste management inside fishing ports and to infrastructures for direct sale (especially for small scale fishers). Furthermore, due to the decrease and concentration of the fleet (especially in Italy), it could be necessary a reconsideration in the logistics of ports and markets.

Two measures are related to *innovation*, both in a general perspective (important topics have been selected both for processing innovation and for the development of new fishing techniques and selective gears) and in specific for *energy efficiency and climate change mitigation*. In relation to this last priority, it has been suggested the use of electric/hybrid engines and the funding of auxiliary engines used for processing on board.

The last “green” measure deals with *temporary cessation*, which should be made more efficient including innovative models for spatial and temporal management of the Adriatic resources (e.g. considering areas associated to fish reproduction where fisheries need a specific regulation).

“Blue” measures (score 7,8-8)

Other six important (but with less consensus) measures can be found in this group. Three measures deal with the marketing and processing opportunities that should be developed in order to add value to seafood products (i.e. *Processing of fishery and aquaculture products; Added value, product quality and use of unwanted catches; Production and marketing plans*). In this area of intervention, specific topics mentioned by experts are: research for new processing technologies (e.g. increasing shelf-life, preparation of fillets, new products, ready to cook); development of technologies for processing by-products; innovative food packaging systems in order to avoid larger amounts of waste and adverse environmental impact; ad-hoc certification schemes for the Adriatic Sea; interventions on board to increase quality and shelf-life; marketing campaigns for less known/appreciated specie; studies for Production- Sales relation and optimization planning.

All these measures have obtained higher scores for the Croatian experts compared to the Italian ones. One of the Italian experts has raised some concerns related to these specific measures. Firstly, Adriatic production can cover only a small share of the local needs of fish, being most of

the fish consumed imported from other countries. Thus, processing cannot be thought as a measure linked to overproduction and need to extend the durability of the product. It should be mainly thought as a measure of value adding, but many Adriatic products already have high fresh prices, thus it is difficult to increase even more the price without suffering the competition of foreign processed products. In this situation, processing can be thought only for products that currently have very low prices (e.g. small pelagics, clams). The second concern deals with the trade of by-products, that could lower the general level of prices. For one of the experts, by-products should be thrown to the sea, since in this way they could maintain the natural food-web.

In the same “blue” category we also find *health and safety* measures. Some of the topics considered by experts continue to be related to the above “value added” strategies (i.e. increase the awareness of high health and safety standard on board, in order to increase the quality of the product; best practice of cold chain implementation on small boats), while others deal with health condition of workers and suggest, for example, the development of guide lines for work health.

Finally, we find in this group the *mutual funds for adverse climatic events and environmental emergencies*, and *protection and restoration of marine biodiversity, ecosystems and compensation schemes in the context of sustainable fishing activities*, for examples interventions like: restoration of abandoned marine ponds and semi-intensive rearing of juveniles for the protection of biodiversity and conservation of fish populations, contribution of fishers for marine litter reduction, involvement of fishers in the management of protected areas

“Orange” measures (score 7-7,5)

These measures are less appreciated than previous ones, but still have positive judgment and scores. Here we find:

- *partnerships between scientific experts and fishermen* (e.g. Involvement of scientists in fishing methods and fish processing; Definition of new management plans);
- *limiting the impact of fishing* (e.g. Size selection of small pelagic fish on boat as a tool for increased quality and return of unwanted size fish live to the sea; Development of selective gears and sustainable techniques)
- *marketing measures* (e.g. Promotional campaigns in kindergartens and schools on the nutritional value of fishery products; Development of certification schemes and labels; Valorization of unknown species in public procurement; Organization of supply chains, including e-commerce, Logistic development for transporting fresh & frozen fish products the distant markets).

- *consultancy services* (mainly for organizational improvements of firms)
- *diversification and new forms of income* (e.g. Pescaturismo, acquiturismo, ittiturismo, environmental and cultural education)
- *supporting participatory local development* (e.g. FLAG developments and self-financing models; International cooperation between FLAGS)

For these measures, not always we find a common appreciation and scoring among experts. Some large differences among countries is also well defined. The clearest of these differences concerns diversification and new forms of income, which is completely excluded by Croatian experts (which still see future in the fisheries) and is strongly suggested by the Italian experts.

“Red” measures (score < 6,3)

Here we find the three measures that have found very little appreciation on average, even if in two of these cases the average low score is the result of a high score for Croatian experts and a low score for Italian experts. This happens for *storage aid* (score 3,5 in Italy and 9 in Croatia) and for *permanent cessation* (2,5 in Italy and 8,5 in Croatia).

The need of storage aid in Croatia is probably the result of over production for specific species, in particular low value species that require this kind of intervention of support the income of fishers.

At the same time, the importance attributed to permanent cessation in Croatia, is an indicator of an overcapitalized fleet that needs to be reduced following the example of other EU fleets which begun this process much earlier. On the other hand, Italian experts feel that the cessation of Italian fleet cannot proceed anymore, being a process that has continued for several decades.

The only measure that is clearly considered unnecessary on both sides of the Adriatic Sea is *supporting the system of allocation of fishing opportunities*. Experts believe that this kind of intervention have never provided (around the word, where applied) the hoped results.

Table 9. Results of consultations with national experts for the choice of funding priorities (minimum score, maximum score, average, Italian average and Croatian average)

Measure	Min	MAX	Average	ITA	HR	Important topics
Promoting human capital, job creation and social dialogue	10	10	10,0	10,0	10,0	Promotional campaigns in elementary schools. Partnerships between advisory bodies, educational institutions and the fisheries sector. Education courses and continuing education for sea-jobs.
Innovation	8	10	9,6	10,0	9,0	Fish processing innovation. Develop and test of new fishing techniques and selective gears
Support for the starting-up of young fishers	8	10	9,5	10,0	9,0	Economic and professional aid to starting up new business. Aid to buy new vessels. Education courses
Ports, landing sites, auction rooms and fishing shelters	8	10	9,3	9,0	9,5	Fish waste management inside fishing ports. Infrastructures for direct sale (for small scale fishers)
Temporary cessation	7	10	8,8	8,5	9,0	Include innovative models for spatial and temporal management of Adriatic resources (considering areas associated to fish reproduction where fisheries need a specific regulation)
Energy efficiency and climate change mitigation	7	10	8,8	9,0	8,5	Use of electric/hybrid engines. Funding for less polluting engines. Funding for auxiliary engines used for processing on board
Processing of fishery and aquaculture products	3	10	8,0	6,0	10,0	Research for new processing technologies (e.g. increasing shelf-life, preparation of fillets, new products, ready to cook). Development of technologies for processing by-products of the processing industry and linking related activities.
Added value, product quality and use of unwanted catches	5	10	8,0	7,0	9,0	Innovative food packaging systems in order to avoid larger amounts of waste and adverse environmental impact. Ad-hoc certification schemes for the Adriatic Sea. Technologies to increase shelf-life. Interventions on board to increase quality and shelf-life. Marketing campaigns for less known/appreciated specie.
Health and safety	7	9	8,0	8,0	8,0	Increase the awareness of high health and safety standard on board, in order to increase the quality of the product. Best practice of cold chain implementation on small boats. Analysis and guide lines for health condition of workers.
Production and marketing plans	6	10	8,0	7,5	8,5	Use of management software. Studies for Production-Sales relation and optimization planning
Mutual funds for adverse climatic events and environmental emergencies	3	10	7,8	6,5	9,0	Increase funds to help fishers' families when accidents occur
Protection and restoration of marine biodiversity, ecosystems and compensation schemes in the context of	6	10	7,8	8,5	7,0	Restoration of abandoned marine ponds and semi-intensive rearing of juveniles for the protection of biodiversity and conservation of fish populations. Contribution of fishers for marine litter reduction.

sustainable fishing activities						Involvement of fishers in the management of protected areas
Partnerships between scientific experts and fishermen	5	10	7,5	8,0	7,0	Involvement of scientists in fishing methods and fish processing. Definition of new management plans
Limiting the impact of fishing and adapting fishing to the protection of species	6	9	7,5	7,5	7,5	Size selection of small pelagic fish on boat as a tool for increased quality and return of unwanted size fish live to the sea. Development of selective gears and sustainable techniques
Marketing measures	4	10	7,3	6,0	8,5	Promotional campaigns in kindergartens and schools on the nutritional value of fishery products. Development of certification schemes and labels (local/Adriatic products). Valorization of unknown species in public procurement (schools, hospitals). Organization of supply chains, including e-commerce. Logistic development for transporting fresh & frozen fish products the distant markets.
Consultancy services	5	8	7,3	8,0	6,5	Consultancies services for organizational improvements of firms.
Diversification and new forms of income	5	9	7,3	9,0	5,5	Pescaturismo, acquiturismo, ittiturismo, environmental and cultural education.
Supporting participatory local development	6	8	7,0	7,0	7,0	FLAG developments and self-financing models. International cooperation between FLAGS
Storage aid	2	10	6,3	3,5	9,0	Fish in box-Payment scheme for storage seasonal catch of small fisherman
Supporting the system of allocation of fishing opportunities	5	8	6,0	5,5	6,5	
Permanent cessazioni	1	10	5,5	2,5	8,5	Fleet renewal by reducing total GT trough scraping and creating a new smaller fishing boats building activity. Conversion to small-scale fishery.

3.1 Policy recommendations

From the results of the previous activity, developed to highlight the intervention priorities to foster the building up of Adriatic value chains, we can now draw specific recommendations for the institutions that can drive this process through public fundings.

We will consider possible interventions that can occur both at EU level and at national level (i.e. Italy and Croatia). These recommendations are tailored for each institutional level considering the ongoing process for the definition of the European Maritime, Fisheries and Aquaculture Fund (EMFAF). At the EU level, the EMFAF entered into force on 14 July 2021 when Regulation (UE) 2017/1004 was published, defining priorities and budget.

Since the Regulation has been already published, and the EMFAF will run from 2021 to 2027, it is not very useful to provide recommendations at this level. On the other hand, national authorities are still working for the preparation of the Operational Programmes that must specify how the EMFAF will be managed in Italy and Croatia. It is therefore at this level that recommendations can be still accepted. The new EMFAF only includes four priorities and leave large flexibility to national authorities to define specific interventions, without having to choose from a preset list of recommended actions.

For the EU level, even if the EMFAF has already been defined, it is still possible to consider other funding opportunities for the Adriatic value chains that must be programmed in the next years. We will focus in particular on HORIZON EUROPE, in order to provide recommendations addressing research and technological development.

Italy

The Italian Operational Programme is still under definition, even if at an advanced stage. If recommendations are not accepted at national level (by the Ministry of Agricultural, Food and Forestry Policies), there is still the possibility that they are accepted by Adriatic regions; in fact, Italian regions are intermediary organizations of the process. The distribution of resources among regions has not been decided yet; when resources will be divided, each Region will also have the possibility to set its own priorities and will present its budget. Thus, this is a second opportunity to apply our recommendations at Adriatic level.

In our opinion the priorities that should be considered (intended as those where budget share should be higher) are:

- 1) **Promoting human capital, job creation and social dialogue:** the EMFAF should support vocational training, the dissemination of knowledge and the acquisition of new skills, as

well as the exchange of good practices and social dialogue. In Italy, particular, attention should be paid to training courses for sea jobs and continuing education; young entrepreneurs and workers should be helped.

- 2) **Support for the starting-up of young fishermen:** the EMFAF should support young fishermen starting up a business. These opportunities should include not only fisheries and aquaculture, but Blue Economy in general (i.e. tourism, value chains linked to fisheries). Institutions should intervene through public funds for start-ups, training and specific credit opportunities.
- 3) **Innovation concerning the conservation of marine biological resources:** to gradually phase out discards and unwanted catches, the EMFAF should support the development of new technical and organisational knowledge, including more effective catching techniques and improved selectivity of fishing gear. Development and test of new gears should be supported, especially if targeting species with high economic potential; these should include both species that are key today (in terms of quantities and value) and species that are currently neglected but could have higher potential if accurately promoted or processed.
- 4) **Ports, landing sites, auction rooms and fishing shelters:** to protect product quality and worker safety, the EMFAF should support measures to improve the infrastructure of fishing ports, auction rooms and landing sites, as well as measures to build or modernise small fishing shelters. Artisanal fishers could be supported organizing places where direct sale to consumers is possible (specific structures “traditional-market style” can be built to attract consumers); the same places could also be used to show and share examples of fishery culture (e.g. exhibitions). On the other hand, the strong decrease of Italian fleet can inspire a more rational distribution (i.e. a confluence) of vessels in ports where markets and other services can be provided in more efficient ways.
- 5) **Energy efficiency and climate change mitigation:** to improve the energy efficiency of fishing vessels, the EMFAF should support: investments in studies and equipment that reduce polluting emissions as well as in the replacement or modernisation of main or auxiliary engines. Classic engines should be substituted with new technologies (e.g. electric engines) that do not have CO₂ emissions. Acquisition of auxiliary engines should be fostered to process seafood in order to increase value added and safety parameters.
- 6) **Diversification and new forms of income:** in order to diversify the sources of income of fishermen, the EMFAF should finance the development of complementary activities such as tourism linked to sport fishing, catering, environmental services and educational activities. Fishing-tourism opportunities continue to be not completely grabbed by the fishing sector; new business models for private and cooperative initiatives need to be

developed (legislation bottlenecks need to be removed). Training of entrepreneurs and workers is necessary.

- 7) **Temporary cessation:** in order to implement emergency and species conservation measures, the EMFAF should finance temporary cessation of fishing activities. New scientific data on resource distribution (including reproduction and nursery areas) should support new models of temporary cessation with differentiated periods on a regional basis.
- 8) **Protection and restoration of marine biodiversity, ecosystems and compensation schemes in the context of sustainable fishing activities:** in order to protect marine biodiversity, the EMFAF should support actions such as: the collection of waste at sea by fishermen; the construction, installation or modernisation of fixed or movable elements to protect and enhance marine fauna and flora; the preparation and updating of protection and management plans for fisheries in NATURA 2000 sites and areas subject to special protection measures; the management, rehabilitation and monitoring of NATURA 2000 sites and marine protected areas.
- 9) **Health and safety:** the EMFAF should finance investments to improve hygiene, health and safety on board, providing they go beyond the requirements established by law. Specific education interventions are necessary to increase the awareness of fishers that healthy and safety intervention on board can also increase the quality and value of products. Specific studies are necessary to identify professional illnesses; safety guidelines on-board have to be produced.
- 10) **Partnerships between scientific experts and fishers:** to promote knowledge transfer between experts and fishermen, the EMFAF should support the creation of networks, partnerships and associations between scientific bodies and industry organisations. In particular, from a biological and management perspective, it is necessary to arrive to a common vision of management plans for the main target species of the Adriatic Sea, which must be shared by both scholars and fishers.

Croatia

In Croatia, such as in Italy, the Operational Programme for the European Maritime, Fisheries and Aquaculture Fund is still in the process of being accepted. Differently from Italy, the Ministry of Agriculture is the only responsible for preparing the Programme without the intermediation of Counties. Thus, these recommendations are directly addressed to the Ministry. Counties can only benefit from some of the EMFAF measures, such as the construction and equipping of ports for fishing vessels.

In our opinion the priorities that should be considered (intended as those where budget share should be higher) are:

- 1) **Processing of fishery and aquaculture products:** the EMFAF should finance interventions for the processing of products that: contribute to energy saving; improve safety and hygiene; support the processing of fish not intended for human consumption; refer to the processing of products from organic aquaculture; that create new or improved products, processes, management systems and organization. In particular, development of technologies for processing by-products of the processing industry is considered key by Croatian stakeholders.
- 2) **Promoting human capital, job creation and social dialogue:** the EMFAF should support vocational training, the dissemination of knowledge and the acquisition of new skills, as well as the exchange of good practices and social dialogue. New job categories must be created (e.g., in value chains that provide services and raw material to fishery, in value chains that buy seafood from fisheries, or in value chains that take advantage from fishery coexistence, like tourism). Partnerships between advisory bodies, educational institutions and the fisheries sector should be fostered, including promotional campaigns in schools.
- 3) **Added value, product quality and use of unwanted catches:** to improve the added value or quality of fish, the EMFAF should support investments that allow fishermen to process and market their catches directly, as well as investments in on-board innovations to increase quality. In particular, innovative food packaging systems that avoid larger amounts of waste and adverse environmental impact are required.
- 4) **Mutual funds for adverse climatic events and environmental emergencies:** the EMFAF should contribute to the establishment of mutual funds to support fishermen who suffer economic losses caused by severe climatic events, environmental emergencies or accidents during fishing activities.
- 5) **Storage aid:** The EMFAF should support the payment of compensation to recognised producer organisations and associations of producer organisations that store fishery products in accordance with the conditions laid down in the Regulation. Contrary to Italy, this measure still seems to be a priority in Croatia.
- 6) **Ports, landing sites, auction rooms and fishing shelters:** to protect product quality and worker safety, the EMFAF should support measures to improve the infrastructure of fishing ports, auction rooms and landing sites, as well as measures to build or modernise small fishing shelters. New processes and infrastructures for the management of fish waste inside ports need to be developed, since this could feed innovative processing industries addressing to human or animal alimentation as well as to blue biotechnologies.
- 7) **Innovation concerning the conservation of marine biological resources:** to gradually phase out discards and unwanted catches, the EMFF should support the development of

new technical and organisational knowledge, including more effective catching techniques and improved selectivity of fishing gear. Collaboration with innovation providers should be fostered with a clear focus on the relationship between innovation and sustainability, since innovation can require a reduction of fishing effort.

- 8) **Support for the starting-up of young fishermen:** the EMFAF should support young fishermen starting up a business. Buying a first fishing boat- scheme- from pension to new generations should be designed. However, starting-up needs to be supported not only for young people.
- 9) **Temporary cessation:** in order to implement emergency and species conservation measures, the EMFAF should finance temporary cessation of fishing activities.
- 10) **Permanent cessation:** in order to ensure a sustainable balance, the EMFAF should support the permanent cessation of fleet segments in excess of fishing opportunities through the scrapping of fishing vessels or their conversion to other activities.

European Union (HORIZON EUROPE)

As explained, the EMFAF structure has been already defined at the EU level. Thus, we will join the policy recommendations that emerged from the discussion with Italian and Croatian institution, with other scientific considerations emerged from the results obtained by Prizefish technical activities, in order to provide recommendations for the next calls of HORIZON EUROPE (Work Programme 2023-24, currently under definition, and beyond). In this section, we will focus then on research and innovation priorities. It is clear, that the same recommendations could be adapted for other European funding opportunities (including INTERREG projects).

The Horizon Europe mandate for Cluster 6 is to provide opportunities to enhance and balance environmental, social and economic goals and to set human economic activities on a path towards sustainability. Research themes that we are proposing are divided following four **Destinations** (using the same Horizon terminology): 1) Biodiversity and ecosystem services; 2) Fair, healthy and environment-friendly food systems from primary production to consumption; 3) Circular economy; 4) Resilient, inclusive, healthy and green coastal communities.

Biodiversity and ecosystem services:

- 1) **Understanding the food-web relations in the Adriatic Sea for a sustainable management of fish stocks.** New models of management plans need to be developed, not only for the Adriatic Sea but, more in general, for the entire Mediterranean Sea. They should take into consideration aspects such as: trophic relations between commercial and non-commercial species, spatial distribution, areas of reproduction and nursery, catchability

patterns of fleets. Multispecies plans, based on fishing effort or on catch quotas, should be considered.

- 2) **Valuating the nexus between marine-coastal ecosystem services and Blue Growth.** A maritime planification of Adriatic spaces must be based on a strong knowledge of the relationships existing between ecosystem services and Blue Growth. Different uses of coasts and seas determine trade-offs in monetary and non-monetary benefits for coastal communities that need to be accurately valued.

Fair, healthy and environment-friendly food systems from primary production to consumption:

- 1) **New business models for management of resources and value-added opportunities.** Too often management of resources and value-added initiatives are considered as independent issues. Strong Producer Organizations demonstrate that value-added opportunities are strongly related to a bottom-up sustainable management of resources. The link between production, processing and trade must be considered. Eco-labels and other certification schemes must be evaluated in this perspective.
- 2) **Technologies for seafood processing and “Knowledge and Innovation Systems”.** Processing technologies develop at a velocity that is not easy to follow for SMEs and fishing POs. Current models of “Knowledge and Innovation Systems” (i.e. how innovation is produced, shared and communicated) have to be evaluated, best practices need to be shared and more efficient innovation frameworks need to be considered.
- 3) **Assessing the economic potential of neglected and invasive species.** A small quantity of Adriatic species is currently used for human alimentation. An organic assessment of the economic potential of other species is missing. This includes a quantification of theoretical sustainable catches, the evaluation of processing techniques to use these resources for human or non-human consumption or for other biotechnological purposes, the assessment of most feasible fishing techniques, gears and management options.

Circular economy:

- 1) **Assessment of opportunities linked to fish waste and plastic waste recovered by the sea.** Ports can become the key ring for new circular economy paths. From one hand, the fish that is not sold for human consumption and/or the waste from seafood processing can feed emergent industries (for food, feed, biotechnology). From the other hand, plastics recovered by fishers are an opportunity to clean oceans (positive externalities). Both paths need a careful evaluation of bottlenecks, costs and opportunities. Required infrastructures must be considered; legislative bottlenecks have to be considered; economic benefits for citizens (i.e. positive externalities), including ecosystem wealth and food security aspects, have to be evaluated.

Resilient, inclusive, healthy and green coastal communities

- 1) **New business and production models for fishers and coastal communities.** The focus is on developing innovative business and production models, including the fishery sector, that are fit for the future and foster improved economic outcomes, cooperation, inclusiveness and fairness for fishers and coastal communities, and at the same time achieve high sustainability, contribute to climate neutrality and meet societal expectations, in particular with regards to local economies and critical resources.

Finally, we can conclude indicating a few long-run ideas, for the next European fisheries fund (e.g. **post EMFAF 2021-2027**). Until now, several measures and approaches derived from the Common Agricultural Policy have been applied and adapted to the Common Fisheries Policy (including Community-Led Local Development – CLLD, and Fisheries Local Action Groups - FLAGs). The next step in the translation of themes from CAP to CFP could be, in our opinion, the attention on themes developed in the framework of the **European Innovation Partnership** (EIP-AGRI) to foster competitive and sustainable fisheries. This should include a coherent vision on both “Research and innovation programmes” (i.e. Horizon) and “Coastal development programmes”. This second pillar is currently missing and should be channeled (as in agriculture) through **Operational Groups** that can be funded under the maritime funds and are project based. Operational Groups tackle a certain (practical) problem or opportunity which may lead to an innovation and contribute to achieving the programme's objectives. Following the example of rural development, each Operational Group is project oriented and composed of those key actors (such as fishers, advisers, researchers, businesses, NGOs, etc) that are in the best position to realize the project's goals, to share implementation experiences and to disseminate the outcomes broadly. The Operational Group approach makes the best use of different types of knowledge (practical, scientific, technical, organisational, etc) in an interactive way. Operational Groups can use support to develop new products, practices, processes and technologies. Further possible areas of action would include joint work processes, short supply chains, joint climate change actions, collective environmental projects etc.