

DECARBONISATION OF FISHERIES AND AQUACULTURE

A Policy Learning Platform peer review

5-6 June 2024

Final Report

1. Brief presentation of the beneficiary and its motivation to host a peer review

This information is mainly taken from the background paper and the application for the peer review

The Beneficiary is the **Emilia-Romagna Region**, with the **Directorate General of Agriculture, Hunting and Fishing**, which is responsible for policies regarding Fisheries and Aquaculture, hosting the Peer Review.

With this Peer Review, the Emilia-Romagna Region was motivated to:

- **Learn** about other Regions' policies for greening the blue economy (particularly the seafood supply chain)
- **Benchmark** its policy with other region's policies and identify areas that are suitable for adopting "good practices" from other Regions or territories
- **Collect good practices or strategies** to create "climate resilient" fish markets and be able to mitigate and adapt to climate change challenges, including changes to sourcing, transportation, distribution and consumption (e.g. different options for storage or transport as required)
- **Improve knowledge regarding seafood waste separation and collection processes**, reuse of organic waste, monitoring material flows, awareness raising and communication campaigns, population and stakeholder's involvement and methodologies, ensuring continuous improvement.
- **Improve knowledge and experience regarding packaging and containers.**
- **Take into account lessons learned** from the Peer Review within the actions, projects and initiatives to be implemented by the Emilia-Romagna Region in the scope of its PTA¹ and its **Regional Strategy for Sustainable Development, in coherence with the Smart Specialisation Strategy S3**
- **Share the knowledge** with the **CAAB** and with the territory's seafood supply chain stakeholders (COPEGO, CESTHA, Art-ER) **promoting the replicability of the best practices** in our Region. But, also, to share our specific knowledge and expertise with Peer territories
- **Apply what has been learned in the medium-to-long term** to help achieve the EU's Climate objectives and recycling targets.
- **Establish linkages and develop synergies for future cooperation** initiatives and project proposals.

2. Specification of the policy challenges encountered

This information is mainly taken from the background paper and the application for the peer review. The "thematic blocks", i.e. the guiding questions of the peer review should also be mentioned.

Among the key challenges encountered in developing Green and Blue Economy aspects of the seafood supply chain in our Region are the following:

- **Socio-economic and demographic challenges:** generational change and high average age, shrinking fishing sector, fragmentation of sector with many small operators; reluctance to invest and lack of clear prospects for the future.

¹ Piano Triennale di Attuazione del PER 2022-2024, Triennial Implementation Plan of the Regional Energy Plan 2022-2024.

- **Political and governance challenges:** Imperative to decarbonise by 2050, Natura 2000 areas, low political priority and lack of public funding for modernisation of fishing sector; Common Fisheries Policy, food sovereignty. Need for strengthening the strategic approach to setting targets for decarbonisation and circularity for involved sectors and multilevel and multi-stakeholder involvement and activation.
- **Energy and GHG emissions challenges:** fuel costs, slow adoption of green technologies due to high costs and bureaucratic issues, gaps in EV recharging infrastructure, high cost of electric or hybrid vans; Inefficiencies in seafood logistics and distribution chains; ageing fishing fleet and infrastructures. Easier to “green” aquaculture than fishing activities.
- **Circular economy challenges:** reuse of seafood and processing waste in energy and new products; Packaging waste and reuse; replacement of plastic (Styrofoam) with more sustainable materials.
- **Climate change and environment:** Global warming, climate change, natural disasters and invasive species affecting the sourcing of fresh seafood, transportation of seafood and consumer purchasing habits; rising average temperatures putting additional pressure on cold storage and transportation chain; need for changes in aquaculture/shellfish farming techniques.
- **Awareness and consumption challenges:** Lack of awareness of the value of local seafood products, low integration of local seafood into public and private canteens (mensas); rising prices of seafood in supermarkets and restaurants leading to consumer shift to cheaper products and/or away from seafood, and the strong seasonality of tourism and seafood demand along with coastal tourism. MSC Certification

Within this Peer Review the main question was: **How can the Emilia-Romagna Region best pursue the “greening of the Blue Economy with regard to seafood supply chain”.**

- 1) *What are the best policies and types of policy instruments to make the fish logistics chain greener and more efficient?*
 - **to reduce GHG emissions** not only by introducing **cleaner vehicles and cold chain technologies and practices**, but also by **making supply and logistics flows more efficient and effective** in addressing demand, thus reducing unnecessary transport trips.
 - **to improve the waste management** of fisheries and aquaculture products (FAPs) and related packaging and containers, emphasising elements of **circularity**.

3. **Participants**

List of participants in the peer review:

- **Members of the beneficiary organisation (Hosts)**
- Piergiorgio Vasi, Regione Emilia-Romagna, Direzione Generale Agricoltura, Caccia e Pesca, Settore Attività Faunistico-Venatorie, Pesca ed Acquacoltura
- Luca Chiodini, Regione Emilia-Romagna, Direzione Generale Agricoltura, Caccia e Pesca, Settore Attività Faunistico-Venatorie, Pesca ed Acquacoltura
- Greta Santagostino, Regione Emilia-Romagna, Direzione Generale Agricoltura, Caccia e Pesca, Settore Attività Faunistico-Venatorie, Pesca ed Acquacoltura
- Francesco Raphael Frieri, Direzione Generale Risorse, Europa, Innovazione e Istituzioni
- Lorenzo Buratti, Regione Emilia-Romagna, Direzione Generale Risorse, Europa, Innovazione e Istituzioni, Area Cooperazione Territoriale Europea
- Tiziana Apollonia De Nittis, Settore Innovazione Sostenibile, Imprese, Filiere Produttive
- **Local stakeholders involved**
- Stefano Valentini, ART-ER
- Duccio Caccioni, CAAB – Centro Agro Alimentare Bologna •
- Sheliza Thobani, CAAB – Centro Agro Alimentare Bologna

- Linda Bonetti, Simone D'Acunto, CESTHA, Ravenna
- Massimo Genari, COPEGO
- Julia Culver, Nomisma S.p.A. – Bologna
- Davide and Milena Mussi, Lead Architects, Studio Iosa Ghini Associati

- **Peers**
- Angelo Kouwenhoven, Senior Policy Advisor Domestic and International Fisheries Policy, Ministry of Agriculture, NL
- Jaap Broodman, Strategic adviser, Fisheries and Aquaculture, Province of Zeeland, NL
- Claire Adam, Fishery and Aquaculture Unit, Maritime affairs Department, Regional Council of Brittany, FR
- Malte Dorow, Head of Department, Inland and Coastal Fisheries, State Research Agency, Mecklenburg-Vorpommern, DE

- **Interreg Europe team**
- Katharina Krell, Thematic Expert on Greener Europe and Connected Europe, Interreg Europe Policy Learning Platform
- Astrid Severin, Thematic Expert on Greener Europe and Europe for Citizens, Interreg Europe Policy Learning Platform
- Charo Camacho, Senior Policy Officer - Projects, Interreg Europe
- Elena Ferrario, Senior Thematic Manager, Interreg Europe Policy Learning Platform


4. Policy Recommendations

Description of the policy recommendations, with reference to good practices and other information mentioned during the peer review. This section can also include a brief analysis of the feasibility of each recommendation in time (e.g. categorisation of the recommendations into short-term, medium-term, long-term implementation potential).

The following table provides a brief summary of recommendations and some indications concerning the feasibility of each.

Table 1 – Policy Recommendations and Feasibility

Policy Recommendation	References	Timeframe	Feasibility	Stakeholders in host territory
1) Improve data availability on the fisheries and aquaculture sector upstream and downstream	ARGOS project (Emilia-Romagna Region, IT) MarghERita, Geoportale (Emilia-Romagna Region, IT)	Short-term	Can be undertaken immediately— collection and review of all relevant data sources. Identification of missing data (incl. on CO2 footprint of vessels, storage, logistics vehicles, waste generated) and needs for updating, integration Necessary for assessing the current regional baseline situation and support monitoring, reporting and communication as well as policy making	Emilia-Romagna Region ART-ER
2) Strengthen strategic approach to governance and set targets for decarbonisation of the fisheries supply chain	Emilia-Romagna's Smart Specialisation Strategy (S3): Blue Growth is one of 15 cross-sectoral thematic areas, covering the blue bioeconomy and two other areas of innovation. The S3dashboard https://monitoraggios3.art-er.it/cruscotto has some indicators	Short-term	The Emilia-Romagna Region has sent an invitation for participation in the <u>Forum Strategico Regionale per La Blue Economy (Regional Strategic Forum for the Blue Economy)</u> , aimed at multi-stakeholder involvement and activation.	Emilia-Romagna Region ART-ER Companies, cooperatives and knowledge structures
3) Support decarbonisation of fishing supply chain through different types of measures	Mussels Covenant (2008), Oyster Covenant (2023) – (Zeeland, NL) Retrofit Schemes – Selective catalyst reaction (SCR) retrofit, hybrid drive, full electric – shrimp vessels (NL) PILOTHY project (FR) Recirculation aquaculture (Yellow tail King Fish)— 100% green electricity (NL) Resource efficient design (FR)	Short- to Medium-term	Need relevant data and understanding of the situation of the fishing fleet and related infrastructures, logistics and distribution Covenants are effective and, in some cases, (mussels) legally binding in the Netherlands, Some retrofits were more effective than others, but costs (esp. full electric) are quite high.	Emilia-Romagna Region National Government

		<p>New CAAB Fish Market PV solar installations, EV chargers and biogas digesters, (Emilia-Romagna Region, IT)</p> <p>Bans on bottom-trawling</p>		<p>Need for relevant shore infrastructure for electric and hydrogen solutions</p>	
4) Promote Economy	Circular	<p>Use of crab shells as construction material or for other purposes, CULTIMER project (Brittany, FR),</p> <p>Aquaponics closed circle demo project (MVP, DE)</p> <p>Use of fish waste in biogas digester—CAAB (Emilia-Romagna, IT)</p> <p>Use of Blue crab in agriculture, petfood, building materials, pharmaceuticals. Fishing cooperative of Goro –COPEGO (Emilia-Romagna IT)</p> <p>Reuse of cork insulation materials (Portugal)</p> <p>Prevention/recovery of fishing waste: FLAG and recycling into textiles (Emilia-Romagna, IT); Brittany FR; Fishing for Litter, Fluff-free nets (Zeeland, NL)</p> <p>Clean Scheldt Agreement (2019) (Zeeland, NL)</p>	Medium- to Long-term	<p>Necessity for cooperation with different types of stakeholders across sectors</p> <p>Regulations can act as drivers of positive change (push effect)</p> <p>Industry can generate demand for new materials (pull effect)</p> <p>Project funding and subsidies can be useful in supporting investment and behaviour change (i.e. installing biogas digester, collection of marine waste)</p>	CAAB, processors, fish markets, downstream users
5) Promote awareness and change in consumption behaviour					
5a) Shift in consumption behaviour to help transform an Invasive Alien Species (Blue Crab) from a threat into an opportunity		<p>Noted chef transforms grey mullet into delicacy (Zeeland, NL)</p> <p>BluEAT project to use Blue Crab, Fishing cooperative of Goro –COPEGO (Emilia-Romagna IT)</p> 	Short-to-medium term	<p>Some initiatives already started to place the blue crab and other species (pesce serra) in local menus</p> <p>CAAB could be a prime player in the marketing and distribution of the blue crab in inland markets, also capitalising on culinary habits (Asian and North</p>	<p>Emilia-Romagna Region</p> <p>CAAB, Restaurant and catering companies, category associations</p> <p>CESTHA</p> <p>Consumers</p>

	<p><i>CESTHA – cooking classes to prepare blue crab (Emilia-Romagna IT)</i></p> <p><i>Machine to separate shell from meat of crabs (Netherlands, Greece)</i></p>		<p><i>American cuisine), Joe Bastianich Crabcakes at McDonalds? -- Soft-shell crabs—work with fishermen to identify and catch crabs during moulting phase, work with restaurants to prepare the delicacy “moeca” — “it’s soft-shell crab season!”</i></p> <p><i>Cooking demonstrations</i></p> <p><i>Mobilisation of chefs</i></p>	<p><i>Tourism authorities</i></p> <p><i>Mariscadoras Srl</i></p>
<p><i>5b) Improve awareness and consumption of locally produced fisheries and aquaculture products to reduce import share and support local sector</i></p>	<p><i>--Certification of the Cesenatico Mussel (in italian: “Cozza Romagnola”)</i></p> <p><i>--MyFish/Fish from Mecklenburg-Vorpommern (Mecklenburg-Vorpommern, DE)</i></p> <p><i>--Sea Ranger (Mecklenburg-Vorpommern, DE)</i></p> <p><i>--Education of chefs to use local products (Brittany, FR)</i></p>	<p><i>Short-to-medium term</i></p>	<p><i>CAAB could be a prime player in the marketing and distribution of the locally produced FAPs in inland markets,</i></p> <p><i>Cooking demonstrations, engagement of consumers and restaurants, tourism associations</i></p> <p><i>Food education and demonstrations</i></p>	<p><i>Emilia-Romagna Region</i></p> <p><i>CAAB, Restaurant and catering companies, category associations</i></p> <p><i>Consumers</i></p> <p><i>Tourism authorities</i></p>
<p><i>6) Support Innovation</i></p>	<p><i>--National Institute for Maritime Energy—MEET (FR)</i></p> <p><i>--Fisheries Innovation Network (FIN)-- NL</i></p> <p><i>--ART-ER</i></p> <p><i>-- New Blue Forum</i></p>	<p><i>Medium- to Long-Term</i></p>	<p><i>Support to development of new vessels with lower carbon footprints</i></p> <p><i>Subsidy schemes for investments</i></p>	<p><i>Emilia-Romagna Region</i></p> <p><i>Research institutions</i></p> <p><i>National Government</i></p>
<p><i>7) Develop cooperation synergies and linkages</i></p>	<p><i>--MASBBE Partnership -- Maritime Sustainable Blue Economy Partnership</i></p> <p><i>-- Proposal for Interreg Central Europe Third Call (RER/CAAB + various partners)</i></p> <p><i>--Horizon Europe, LIFE</i></p>	<p><i>Short-term</i></p>	<p><i>Invitation to Peers to join MASBBE</i></p> <p><i>Proposal for Interreg Central Europe is being developed</i></p>	<p><i>Emilia-Romagna Region, CAAB, Fisheries and aquaculture stakeholders in Ferrara Province</i></p>

5. Possible calendar of implementation

This section helps the beneficiary to start working concretely on the implementation of the recommendations, by reflecting on the possible time frame and resources to be dedicated for such actions. A Gantt chart can be proposed, or any other easy to use format to visualise and plan a calendar of activities. The information provided here is never binding.

- *July-November 2024. –Follow up with peers and stakeholders*
- *15 October-10 December 2024: Preparation and presentation of a proposal for co-funding under the Interreg Central Europe Third Call involving some Peers and stakeholders participating in the Peer Review.*
- *Within 18 September 2024: Preparation and putting together a consortium to participate to one Horizon Europe Programme’s call in the frame of the EU Mission “Restore our Ocean and Waters by 2030)*
- *Short-term: Collection and review of available data regarding the fisheries and aquaculture value chain and logistics elements*
- *Medium-term: Formulation of measures to support fishing and aquaculture sector (for example the support to clam aquaculture farmers for damages caused by the Blue Crab - L.R. n. 18/2023)*
- *Medium-long term: Formulation of a call in the frame of EMFAF (European Maritime Fund for Aquaculture and Fishery) to greener the aquaculture industry through the financing of a measure to change thermal boat engines with electric ones*

6. Conclusions

In this section, very brief considerations on the peer reviewed recently experienced can be indicated, including possible desired follow up activities to stay in contact with the peers or with the Policy Learning Platform (if deemed relevant).

- *Underscored the importance of political developments in the Regions, but also at the National level (for example, in the Netherlands, return of “Fisheries” to the name of the Ministry), and the general context.*
- *Underline what is possible and what is not reasonably possible to greener the fishing boat engines, through comparable experiences of the Netherlands and French peers*
- *The utmost importance of covenants in the aquaculture and fishing activities*
- *Greening or rather a move towards sustainable technologies and practices needs to take place at both upstream and downstream parts of the of the fisheries and aquaculture value chain, some areas involving investments, but others in changing attitudes and behaviours, which could be implemented more quickly*
- *Learning from other territories, not only good practices, but also things that didn’t work or were problematic—these are learning examples.*
- *The issue of invasive alien species and how to turn them into an opportunity to create a value-chain (e.g. in the frame of circular economy and not only “collect and dump”)*
- *General interest in further cooperation—it is important to identify the appropriate instruments for such cooperation, whether ongoing fora (MASBBE) or joint applications for project funding (Interreg Europe, Interreg Central Europe, Horizon Europe, LIFE)*

Bologna, 12 July 2024