The SAFER Policy Toolkit

How to boost innovation transfer in the seafood sector?

Recommendations for regional authorities and policy makers

www.saferatlantic.eu
This project is co-financed by the INTERREG Atlantic Area Programme 2014-2020.
TABLE OF CONTENTS

PART I:
The results of the SAFER project.................................................................5

PART II:
What’s in there for regional authorities?.......................................................7
  1. How SAFER can be used for the implementation of Regional Smart Specialisation Strategies (RIS3) for the Seafood sector in the Atlantic Area?
  2. How SAFER can support other regional initiatives for the development of the seafood sector: the example of regional quality brands?
  3. How SAFER can inspire the use of EMFAF at regional level?

PART III:
The legacy of SAFER for policy makers....................................................12
  1. Recommendations to the EU programmes and assistance mechanisms
  2. Recommendations to the Atlantic Member States, the European Commission and Parliament
About the SAFER project

SAFER project was created to improve the innovation performance of the seafood sector by increasing the adoption of technology and transnational cooperation. The project, supported by the INTERREG Atlantic Area program 2014-2020 has been running from 2017 and ends in June 2023. The project has involved 10 partners from 5 Atlantic Area member states. It has aimed at building a transnational network of smart seafood clusters gathering stakeholders around the development of pilot actions of transfer of innovation.

“SAFER aims at transferring technological innovations on a transnational basis to increase the competitiveness of the SMEs belonging to the Atlantic seafood sector which has huge potential of growth”

Jose Manuel San Emeterio
ERNACT (Project leader)

About the SAFER Policy Toolkit

Taking stock of this ambition, this Policy Toolkit aims at:

1. Inform the Atlantic community on the results of the project (PART I)
2. Identify concrete ways for regional authorities to use SAFER results for future regional initiatives (PART II)
3. Inform more generally policy makers on lessons learnt by SAFER when it comes to boosting innovation transfer in the seafood sector (PART III)
Part I: The results of the SAFER project

As platform for the transfer of innovation, SAFER developed a series of pilot actions where companies were able to cooperate with other companies to test and apply Industry 4.0 solutions and methods to improve the reliability and efficiency of their processes. The main solutions implemented were:

- A Manufacturing Execution System (MES): a software designed to optimize the manufacturing process by monitoring, tracking, documenting, and controlling the entire production lifecycle. It was developed by FoodinTech company (Norte, Portugal) and implemented in Mytilimer (Bretagne, France), NorteSea (Norte Region, Portugal), Irish Fish Canners (Donegal, Ireland), Consorcio Conservero Español (Cantabria, Spain) and Thaeron Fils (Bretagne, France).

- A digital app to assist inspectors to manage the levels of oyster harvesting. It is an innovative service that simplifies the inspection process enabling the access to more accurate information, better traceability and improved reporting. The remote control of oyster breeding also prevented workers from making daily checks on site, reducing the arduousness of their work. It is developed by Wisar Lab (Donegal, Ireland) in coordination with Derry City & Strabane District Council and piloted in the Loughs Agency (Derry & Strabane, UK).

- An IoT (Internet of Things) system applied to the oyster farms from the Loughs Agency in Derry to help monitor the environmental conditions while the oysters are growing. The system uses wireless technology to sense conditions such as water oxygen levels, chlorophyll, and temperature and send the data back to a remote database which can be accessed from anywhere by staff. This service is developed by Wisar Lab (Donegal, Ireland) in coordination with Derry City & Strabane District Council and piloted in the Loughs Agency (Derry & Strabane, UK).

- A digital app to assist health and safety inspections in the factory floor to simplify the inspection process allowing the access to more accurate information, avoiding legibility or transcription issues, saving time and storage space and improving reporting. This service is developed by Wisar Lab (Donegal, Ireland) in coordination with Udaras and piloted at Mowi, the world’s leading supplier of organic farmed salmon (Donegal, Ireland).
• ELOXIRAS®: an innovative process for the treatment and reuse of marine and brackish water, aimed to increase productivity, boost competitiveness and reduce environmental impact of recirculation aquaculture systems (RAS). It is developed by APRIA (Cantabria, Spain) and piloted in the aquaculture facilities of the Oceanographic Center of Santander (Cantabria, Spain) and in Cultivos Piscícolas Marinos - CUPIMAR (Andalucía, Spain).

• An IoT (Internet of Things) solution to remote monitoring water quality was implemented by WiSAR Lab (Donegal, Ireland) in S2AQUA, a collaborative laboratory on Sustainable and Smart Aquaculture (Algarve, Portugal).

Companies where innovative services were transferred benefited from an improvement of their logistical processes, improved workers safety and decreased their workloads, as well as the environmental impacts of production. A Catalogue of services was developed by the project partners to gather knowledge on similar innovation projects dealing with the seafood sector performance, eventually enabling the Atlantic community around innovation in the seafood sector to grow.

Download: The SAFER Catalogue
Part II: What’s in there for regional authorities?

Beyond concrete transfers of innovation, the SAFER project has also aimed at supporting regional efforts to boost innovation in the seafood value chain. With their competences, Atlantic regions can bring support for the seafood sector in their territories. This can be done via adapting funding schemes, organisation of a territorial governance around the seafood value chain, and the development of regional objectives and strategies to guide the sector development, while adapting European legislations and instruments to the specificities of their territories.

The following sections aims at translating SAFER results into useful information for regional authorities supporting the development of the seafood value chain.

1. How SAFER can be used for the implementation of Regional Smart Specialisation Strategies (RIS3) for the Seafood sector in the Atlantic Area?

The project SAFER has been an example of how stakeholders can cooperate to improve innovation in the seafood value chain. In a context where regions are responsible for developing their Smart Specialisation Strategies, the SAFER experience brings the latest information to regional authorities on innovation ongoing in the seafood sector, on possible investment priorities and future market opportunities, key stakeholders to count on when assessing the possible transfer relevant emerging technologies.

The seafood sector stands as one of the most common areas of innovation identified by Atlantic Regions in their Smart Specialisation Strategies, and SAFER’s results should thus be useful to most of them.
**Seafood Regional Smart Specialisation Strategies in Atlantic regions**

<table>
<thead>
<tr>
<th>Region/Business</th>
<th>Strategy and Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Region Bretagne</strong></td>
<td>Objective 3 “Maritime economy for a Blue growth”: increase the competitiveness of the region on maritime resources and improve it by the means of innovation.</td>
</tr>
<tr>
<td><strong>Ireland</strong></td>
<td>Investment on the agri-food and agri-tech sectors work on different fields such as aquaculture. Improve technology in the sector to render food production more effective.</td>
</tr>
<tr>
<td><strong>Gobiemo de Cantabria</strong></td>
<td>Blue economy; innovation in the fields of fisheries, aquaculture; tourism; trade; marine energy; offshore renewable energy; developing investments in Blue Biotechnology.</td>
</tr>
<tr>
<td><strong>CCDR-Norte</strong></td>
<td>Promotion of development of new SMEs, support to their internationalization.</td>
</tr>
<tr>
<td><strong>CCDR-Alentejo</strong></td>
<td>Negotiation models based on digital technology with a focus on the agri-food sector.</td>
</tr>
<tr>
<td><strong>Region Pays de la Loire</strong></td>
<td>Development of technologies in the agri-food sector, especially the development of new skills and solutions in aquaculture that will benefit technology transfer from other sectors. Moreover, the region wants to work with other countries and share with them their knowledge and increase international presence of the regions aquaculture and fishing sectors.</td>
</tr>
<tr>
<td><strong>Xunta de Galicia</strong></td>
<td>Become an international reference in food quality. Development of the agricultural sector by developing technology.</td>
</tr>
<tr>
<td><strong>Welsh Government</strong></td>
<td>According to the Innovation Strategy for Wales, the country aims to furthering the innovation in the food system with the aim to reduce the carbon emissions, protect existing habitats, create more space for nature and produce healthy, affordable food. The country also offers support to aquaculture and fisheries management and technology for monitoring and understanding the marine environment, for understanding the impacts of development, the impacts of climate change on ecosystems and the opportunities these might present.</td>
</tr>
</tbody>
</table>
Inspiration from Cantabria

SAFER directly supported the creation of a seafood dimension to Cantabria Smart Specialization Strategy. During the project, the government of Cantabria used the SAFER project to gain knowledge on the latest innovation of the seafood sector and engaged with its regional stakeholders involved in the seafood value chain.

Inspiration from Norte Region

With the SAFER consortium, the Portuguese company Foodintech, located in Norte region, was able to gain visibility at Atlantic level and extend their market to other companies located in Atlantic States. It contributed to achieve the goal of CCDR Norte fixed in its Regional Smart Specialisation Strategy to support Start-ups and SMEs’ internationalization.

“SAFER supported FOODINTECH internationalization, for us it would be great to continue this internationalization supported by SAFER type projects”

Miguel Fernandes, CEO of FoodinTech (Norte Region)
2. How SAFER can support other regional initiatives for the development of the seafood sector: the example of regional quality brands

Beyond giving support to the definition and implementation of regional smart specialization strategies, the SAFER project can also be useful for the support of regional quality brand.

Galicia’s “Galicia Calidade” is the regional quality brand that certifies the level of quality of a product and/or services which deserve the distinction. This recognition includes seafood products among others and help to promote regional products and services to the international markets, ensuring quality and origin, which contributes to a higher added value.

SAFER project is a useful tool to increase the quality level of products thanks to software tested in real conditions in participating companies. These software proved to improve the reliability of the process, reduce the environmental impact of the production and thus contribute to the overall quality of the distribution chain of the product.

3. How SAFER can inspire the use of EMFAF at regional level?

SAFER project also represents an interesting example to guide future investments to be performed with the co-financing of the European Maritime, Fisheries and Aquaculture Fund (EMFAF). As innovation measures as well as measures related to the quality of products and the improvement of skills and working conditions, are often delegated to regional authorities via a dedicated envelops, Regional Authorities may find in SAFER an inspiration to guide EMFAF spending in their territories.

In Nouvelle Aquitaine, the former EMFF programme supported the valorisation and transformation of products and “co-products” from the fishing and aquaculture sectors, the increase of sustainability in the aquaculture and seafood sector. The University of Bordeaux benefited from EMFF and developed an innovative project called DEEP-SMS consisting of having a transmitter attached to a fishing net allowing on the one hand to locate lost fishing nets thus avoiding accidental fishing and on the other hand the taking of in-situ marine data adjacent to fishing conditions.
SAFER could benefit from including other type of innovation transfers performed in the seafood sector, while innovators could integrate a broader Atlantic network to support their business to thrive.

Regions can also build on SAFER results when it comes to inspire activities performed within the Fisheries Local Action Groups (FLAGs). FLAGs organise a territorial governance for a coordination of the seafood sector value chain and take the form of partnerships between fisheries actors and other local private and public stakeholders. Together, the partners design and implement a local development strategy to address their area’s needs be they economic, social and/or environmental. Based on their strategy, the FLAGs select and can provide EMFAF funding to local projects that contribute to local development in their areas, involving thousands of local stakeholders.

The Norte region Litoral Norte FLAGS focus their coordination on “A territory that values its maritime and fishing resources and traditions, while supporting new opportunities for economic development and job creation” approach. To achieve their goals, they set four strategic objectives within which are the objective to support increased competitiveness, diversification, entrepreneurship, and innovation in the local economy and in the maritime activities or the objective to support skills development and accreditation, and promote employment, employability and inclusion.

The SAFER project may enable such FLAGs to integrate a network of companies and regions at Atlantic level, beyond local ecosystems to exchange good practices on innovation to bring to the seafood sector and experiences to harness locally.

“The benefits from SAFER and the pilots are the cooperation between regions and the close relationship between partners that helped us to address the seafood industry challenges in a more efficient way. Being aware of the situation in other regions and trying to find synergies to tackle different situations are some of the SAFER added values”

Juliana Carvajal, Head of EU Affairs, Pole Mer Bretagne Atlantique
Part III: The legacy of SAFER for policy makers

Beyond developing pilots and contributing to building up an Atlantic ecosystem of innovation in the seafood sector, SAFER has progressively integrated the concept of Industry 5.0 in its reflection on the transfer of innovation in the seafood value chain, the first of its nature. This new concept brings a new holistic approach to industry development that goes beyond productivity and reinforces the role and its contribution to society. Worker and environment protection take a new and more central role in the development of new technologies. The seafood industry gives more attention to be more sustainable, human centric and resilient.

Against this background, SAFER partners leave as a legacy the following recommendations to policy makers at all levels of governance:

1. Recommendations to the EU programmes and assistance mechanisms

SAFER project showed how much the success of a transfer of innovation increases when it contributes to social improvement and improves the environmental benefit as well as the economic resilience of a company. EU legislation has progressively integrated those three principles, especially after the COVID19 pandemic, where the attention to the resilience of the seafood sector grew. It should be careful to continue down this path.

Different EU budgetary instruments can support this transition of the sector and build on local innovations. For example, the new Interregional Innovation Investment (I3) is an interesting tool which could produce a new generation of SAFER projects, aligning with the three principles entail in the Industry 5.0 concept and benefitting to maritime regions value chains. Other programmes exist to support innovation and internationalization of Start-ups which could also contribute to the seafood sector. Regular and adapted communication on possibilities for seafood sector to benefit from other EU funding schemes would be beneficial to local ecosystems.

These elements of information could be included in EU assistance mechanisms such as the Atlantic Strategy Assistance Mechanism or the new EU Aquaculture Mechanism, provided that they can reach their target, e.g. Seafood sector companies, regional and local aquaculture and fisheries committees, FLAGS, etc. Communication activities from the INTERREG Atlantic Area programmes could also aim at making sure that the results of SAFER project can be used by other Atlantic stakeholders beyond the timeframe of the EU co-financing.
2. Recommendations to the Atlantic Member States, the European Commission and the European Parliament

SAFER projects started the development of a community of practice matching seafood companies with innovation providers. Many other EU funded projects have carried on the same objectives for other important Atlantic economic sectors. Against this background, to improve the sustainability of their results in the long term and improve the general capacity of innovation of Atlantic regions, one could think of the benefit of creating a governance framework to support them.

Consolidating the SAFER model into a more structured cooperation would be very beneficial to streamline the results, compile new innovation and give the possibility of further transfers.

One could think of joining efforts at all levels of governance in the Atlantic on a new priority related to an Innovative and Sustainable Atlantic Economy to:

- Foster cooperation between research centres, clusters and industries to create an Atlantic Smart Specialisation ecosystem geared towards the green transition;
- Create synergies among Atlantic maritime clusters and diversify funding sources for innovation “made in the Atlantic” to support start-ups and SMEs to overcome the “Valley of Death”;
- Develop a long-term vision for Atlantic economic sectors taking into account land-sea interactions.
Project partners

**ERNACT Network**  
Lead Partner  
Donegal, Ireland

**CPMR/CRPM**  
In charge of the capitalization  
Brittany, France

**Pôle Mer Bretagne Atlantique**  
In charge of the regional node  
Brittany  
Brittany, France

**GOBIERNO de CANTABRIA**  
Gobierno de Cantabria  
In charge of the regional node in Cantabria  
Cantabria, Spain

**APRIA Systems S.L**  
Technical partner in charge of implementing water treatment pilots for the seafood industry  
Cantabria, Spain

**Lyit**  
In charge of research capacity, technical support, production of technical papers  
Donegal, Ireland

**Údarás na Gaeltachta**  
In charge of the regional node in Donegal  
Donegal, Ireland

**BIM**  
Ireland’s Seafood Development Agency

**Forum Oceano**  
In charge of the regional node  
Norte Region  
Norte, Portugal

**Foodintech Lda**  
In charge of the coordination of the pilots  
Norte, Portugal

**Government of Newfoundland and Labrador**  
In charge of connecting Atlantic Canada blue economy clusters to those on the European Atlantic coast  
Newfoundland & Labrador, Canada

**Derry City & Strabane District Council**  
In charge of the regional node in Derry  
Derry & Strabane, United Kingdom
For more information, please contact:

Elise Wattrelot, Executive Secretary of CPMR Atlantic Arc Commission
Rond-point Schuman, 14, 1040 Bruxelles (Belgium)
+32 (0)2 431 09 95 | elise.wattrelot@crpm.org
https://cpmr-atlantic.org/

Jose Manuel San Emeterio, Programme Manager
ERNACT, Unit 271, CoLab, ATU Donegal Letterkenny Campus
Letterkenny, Co. Donegal (Ireland)
+353 (0)74 916 8212 | info@saferatlantic.eu
www.saferatlantic.eu

Follow us on social media: @SAFERatlantic

Facebook: https://www.facebook.com/SAFERatlantic/
Twitter: https://twitter.com/saferatlantic
Linkedin: https://bit.ly/3qSqhAA
This project is co-financed by the INTERREG Atlantic Area Programme 2014-2020.