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BLUEfasma

Empowering innovation capacity of SMEs, maritime clusters and networks in MED islands and coastal areas to support blue circular economy growth in fishing/aquaculture

Deliverable 4.5.2 - Findings from BLUEfasma Living Labs

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1. INTRODUCTION

Circular economy thinking is fast becoming a guiding force in business and government, but to understand why it is so necessary, we must understand the fundamental differences between linear and circular economies.

Our current economic model relies heavily on the extraction of natural resources to produce products that are used by consumers, too often, before they are discarded. Different studies calculate that between 80 and 99% of the products stop being used after six months of their manufacture. This is the linear economy.

That is why the transition to a circular economy is the key element for a sustainable future. The circular economy aims to mimic Earth's natural cycles by applying similar principles to our economic system. The innovative model involves a complete rethinking of our approach to products and services and how we consume them. Better use of resources, close the circuits of resource flows recovering as much as possible and prevent waste and pollution through better design.

This report addresses the perspective of the BLUEfasma Living Lab concept which is based on a systematic user co-creation approach that integrates research and innovation processes with a special focus on the co-creation, exploration, experimentation and evaluation of innovative ideas, scenarios, concepts and related technological artifacts in real life use cases, to reach a circular economy model.

The Mediterranean region desperately needs a major paradigm shift in the way goods and services are consumed and produced to decouple development from environmental degradation and resource depletion. The environmental challenges derived from our current development model are especially critical in the Mediterranean region. The region has been identified as one of the regions most sensitive to climate change in the world.

In the transition to a circular economy, the determined engagement and participation of all stakeholders in society is imperative.

Aware of these challenges for the prosperity and development of the region, the governments of the Mediterranean must strive, both at the

regional and national levels, to initiate political reforms that can accelerate the adoption of techniques and strategies and thus allow the change to new models of production and consumption of circular economy.

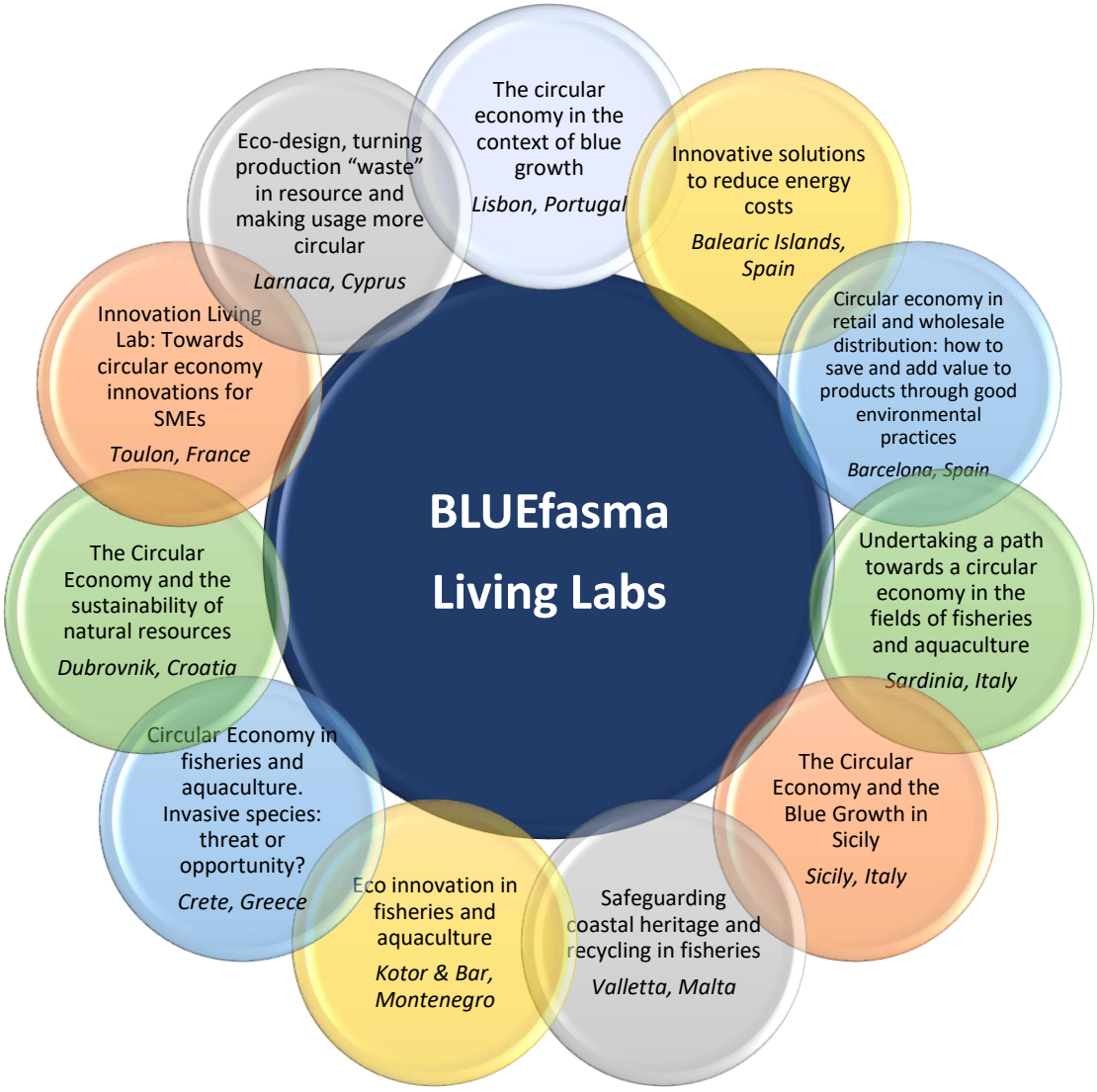
BLUEfasma approach aims to change the current thinking of the sector on circularity, through different measures such as:

- The repetition of successful best practices thanks to the Circular Economy.
- Test the improved circularity self-assessment tool in 11 participating Mediterranean territories.
- The BLUEfasma Living Labs implementation and specific transfer activities.
- Change policies towards a more circular economy.
- Systematize financing opportunities for business investment in blue innovation.

2. THE BLUEfasma LIVING LABS

The "BLUEfasma Living Labs" are laboratories for co-creation and innovation. Each region has been involved in the project by organizing thematic laboratories around the application of a more circular economy. The labs were an opportunity to share existing good practices and discuss possible solutions to implement circulare .

11 BLUEfasma Living Labs were established in 11 territories in 9 countries (Cyprus, France, Croatia, Greece, Montenegro, Malta, Italy, Spain, Portugal).
In the figure below, the title of each BLUEfasma Living Lab and the country and region in which it was implemented is presented.



The main information related to the 11 BLUEfasma Living Labs (BLLs) is summarized in the table below:

COUNTRY REGION	BLL TITLE	SCOPE	SOLUTIONS	INITIATORS
GREECE / CRETE	Circular Economy in fisheries and aquaculture. Invasive species: threat or opportunity?	The Region of Crete and the University of Patras organized the Greek BLUEfasma Living Lab in Crete. It was focused on the Circular Eonomy in Fishing and Aquaculture, presenting BLUEfasma and good practices in the sector. And the issue of invasive species and how to turn the threat into an opportunity was addressed.	Installation of containers in ports to collect fishing equipment for recycling (e.g., nets, etc.). Questions and reports for the self-assessment tool must be available in Greek.	Region of Crete and University of Patras - Supported by Dynamic Vision
FRANCE / TOULON	Innovation BLUEfasma Living Lab: Towards circular economy innovations for SMEs	Collection and valorization of shells and fish waste	Working group to think collectively about alternative systems that allow to recover waste Coaching to support SMEs in the valorization process of waste in aquaculture and fisheries and to support any innovation idea related to a circular economy in both sectors.	Pôle Mer Méditerranée – Toulon Var Technologies
SPAIN / BALEARIC ISLANDS	Innovative solutions to reduce energy costs	To emphasize the reduction of energy costs through the	Project WET: transforming saltwater into freshwater with clear	Maritime Cluster of

		application of new technologies	energy savings and at a lower cost than that offered by current desalination systems. Plus, the adoption of an autonomous renewable energy generation system.	Balearic Islands
SPAIN / BARCELONA	Circular economy in retail and wholesale distribution: how to save and add value to products through good environmental practices	Hub of distribution: the retail sector and the wholesale sector. Challenges regarding transport, energy, packaging, and food waste.	Pilot Tests using compostable packaging at fish retailers and generating a circular economy area at the Guild of Retailers website; facilitating agreements with green energy providers to improve efficiency (electricity bill); facilitating an agreement with TooGoodtoGo to engage fish retailers in avoiding organic waste with no registration cost in the app; market research about bicycle transport for fish delivery in Barcelona town.	MEDCITIES
ITALY / SICILY	The Circular Economy and the Blue Growth in Sicily	Funding as the main theme, and the contact political decision-makers, administrators, as an "intermediate" body that mediates between the Distretto, and the final recipients of funds and aid, the SMEs.	The process of implementation focused on funding and on the opportunities to be exploited to speed up the transition to the CE. The activity saw the stakeholders looking for open funding calls, especially at local level, to apply	Taormina Etna Consortium

			what they learned in the previous phases of their workshops. The Distretto aided and tools to approach future calls and then participate submitting proposals.	
ITALY / SARDINIA	Undertaking a path towards a circular economy in the fields of fisheries and aquaculture	To collect relevant information on the drivers and barriers that could hinder the adoption of circular economy solutions, trying to find solutions to prevent or eliminate the barriers that hinder the development of the circular economy in this sector.	Provide an operative tool, "Position Paper" where all the inputs and outputs drawn from all Living Labs activities (round tables, interviews, meetings with stakeholders) were summarized with the aim at implementing future circular economy solutions.	IMC Foundation - International Marine Centre
CYPRUS / LARNACA	Eco-design, turning production "waste" in resource and making usage more circular	To introduce to the fishing and aquaculture sector the concept of eco-design to re-thinking what they produce, how to produce it and how the product or service will be distributed and used. To disseminate all information to spread the knowledge on circular economy.	The solution proposed to solve the problem is to find ways with the relevant stakeholders of the Living Lab to support the owners of fishing boats to reduce their fuel needs. Set up the process for the fishermen can work together and share and repair fishing gear, nets, sharing of fuel, ice points, and storage space, working together as a cluster to use the same transportation for the sales points.	Larnaca-Famagusta District Development Agency (ANETEL) and Stratagem Energy Ltd.
CROATIA / DUBROVNIK	The circular economy and	Bivalve farming is an important industry in	Production of souvenirs and	

	the sustainability of natural resources	this area, and considerable waste co-products, mainly shells, are currently underutilized and disposed of in landfills or returned to the sea. The scope is to bring together different stakeholders and promote the use of bivalve shells as a valuable resource in many industries.	jewelry was chosen as the first option to be tested. Workshops. A representative of the investment fund was present at the final workshop and introduced participants to the financing opportunities for SMEs and start-ups.	Dubrovnik Neretva Regional Development Agency - DUNEA
PORTUGAL / LISBON	The circular economy in the context of blue growth	Generate a document that will act as a support tool in the implementation of new Circular Economy measures and assist SMEs in the path towards sustainability. To organize networking for all stakeholders willing to expand their business network or contacts and improve Circular Economy solutions.	Develop an Action Plan for implementing Circular Economy measures with one aquaculture SME. This Action Plan will serve as a support tool in the implementation of the Circular Economy measures identified and to propose solutions for greater sustainability.	CEEETA-ECO, Energy Consultants
MONTENEGRO / KOTOR AND BAR	Eco-innovation in fishing and aquaculture	Topics such as the rational use of water resources in fishing and aquaculture, the reduction of energy consumption in fishing and aquaculture, the importance and possibilities of application of biological agents in aquaculture or the use of microalgae in food as part of the of the circular bio-economy.	Develop appropriate policies, strategies and action plans that encourage and encourage the introduction of CE practices and the use of models from other countries to replicate them in Montenegro and adapt them according to local needs.	Chamber of Economy of Montenegro

MALTA / VALLETTA	Safeguarding coastal heritage and recycling in fishing	Proposing specific solutions on how to protect Maltese cultural heritage, ameliorating the risks to coastal cultural landscapes through CE. To ensure that CE principles are instilled in the Maltese fisheries sector.	Recycling in Fisheries: Raising awareness, through start a media campaign. Training specifically targeting professional and recreational fishers. Gear marking: To create an effective monitoring system. Safeguarding Coastal Heritage: Identification and prevention.	Department of Fisheries and Aquaculture

3. BENEFITS AND KNOWLEDGE GAINED

BLL - The circular economy in the context of blue growth Portugal/Lisbon

The Portuguese partner CEEETA-eco organized the first BLUEfasma Living Lab (BLL). The main objective of the BLL was to transfer knowledge to enrich and strengthen the Circular Economy solutions available in the fisheries and aquaculture sectors.

BLL participants

The BLUEfasma Living Lab was organized mostly in virtual format, because of the restrictions associated to Covid19 pandemic, for this sessions and meeting. The first mailing, inviting for the BLL, was sent to 122 contacts identified as SMEs, companies, business support organizations, Public Authorities, policy makers.

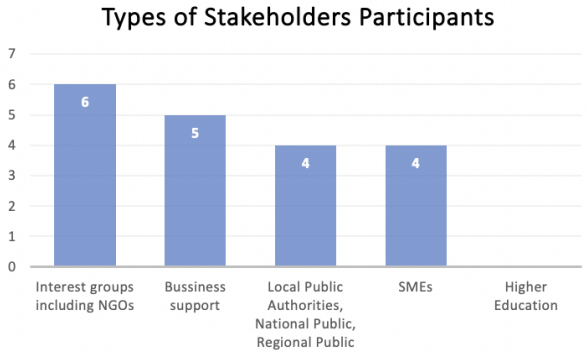
Benefits and Knowledge obtained
Bring together researchers, politicians, NGOs and professionals to discuss innovative ideas and solutions.

Challenges and Risks
The lack of information and available solutions in CE and funding opportunities for the blue sector.

BLL - Innovative solutions to reduce energy costs Spain/Balearic Islands

The BLL organized by the Maritime Cluster of the Balearic Islands focused on innovative solutions to reduce energy costs.

BLL participants
Well-known people in the Balearic Islands and others we know from other events, from other European projects, and from test activities that aimed to measure the willingness and readiness of SMEs to adopt the principles of the Circular Economy. We recall here the self-assessment tool, which helped SMEs to identify their commercial position for circularity, among others.



Benefits and Knowledge obtained

Very interactive and has obtained incredibly valuable information for the development of the pilot and to meet the objectives that we set ourselves.

The BLL can continue once the project is finished, through the promotion of Local Action Groups for Fisheries.

Challenges and Risks

Finding a technological solution, an innovative solution to achieve the reduction of energy costs.

Lack of means to develop projects.

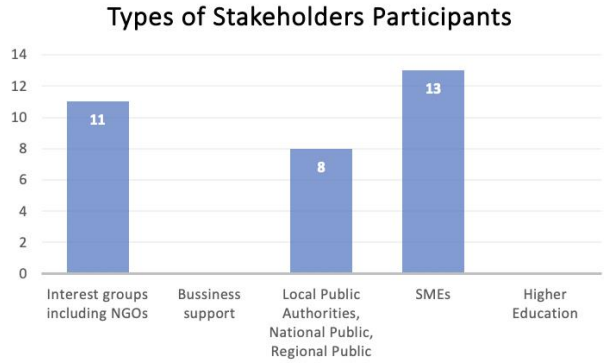
BLL - Circular economy in retail and wholesale distribution: how to save and add value to products through good environmental practices - Spain/Barcelona

BLL was organized by the partner MedCities. The BLL focused on circular economy practices for the sector.

BLL participants

In the Metropolitan Area of Barcelona (MAB) territory two type of actors are considered of major importance for its level of

presence: 1) the retail sector and 2) the wholesale sector.
The retail sector, the best way to reach all its stakeholders was to establish close contact with its main organization, the Guild of Fish Retailers of Catalonia (Gremi dels Peixaters de Catalunya). The wholesale sector, the best way to reach all the stakeholders was to establish close contact with the two following main organizations: the Wholesalers Guild of the Central Fish Market of Mercabarna and to the institution of Mercabarna itself.



Benefits and Knowledge obtained
- TRANSPORTATION: there is no availability of refrigerated electric vehicles for the delivery of fish, but there is the possibility of acquiring an electric or hybrid vehicle and incorporating an isothermal cabin inside.
- ENERGY: The head of business development at Barcelona Energía, a public green energy company, explained the savings that fishermen can achieve with the switch to green electricity.
- ORGANIC WASTE PREVENTION: Several examples of food maximization initiatives and subsidies available for circular economy initiatives were presented.
- PACKAGING: There are several alternatives to expanded polystyrene, such as cardboard or reusable hard plastic boxes.

Challenges and Risks
- TRANSPORTATION: The technology for electric or hybrid vehicles for the delivery of fish is not yet fully developed.
- ENERGY: awareness to convince the wholesaler and retailer to trust and switch to green energy.
-PREVENTION OF ORGANIC WASTE: how to channel the improvement or recycling of fish waste after its handling on a wholesale and retail scale.

-PACKAGING: high cost of compostable materials compared to EPS and plastic.

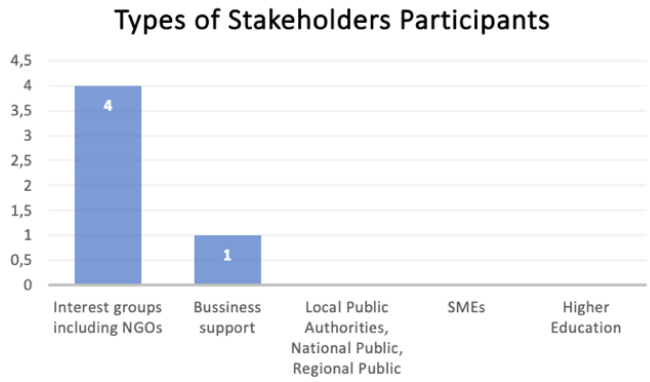
BLL - Undertaking a path towards a circular economy in the fields of fisheries and aquaculture - Italy/Sardinia

BLL organized by the partner IMC Foundation together with the MEDSEA Foundation, focused on the identification of drivers and barriers that could hinder the adoption of blue circular economy in the seafood sector. Key players operating along the life cycle of fishery and aquaculture products in Sardinia, as well as PA, academia, Blue growth-related companies and local civil society organization, were invited to share experiences and unlock their potential towards a more circular economy.

BLL participants

The "Opportunities for eco and circular innovation in fishing and aquaculture'' BLL was firstly directed to SMEs in the fishing and aquaculture sector.

To map the fishing and aquaculture SMEs existing in Sardinia, we refer to several business support organizations, such as: the 4 Sardinian Fisheries Local Action Groups (FLAGs) (FLAG Pescando – Sardegna Centro Occidentale, FLAG Sardegna Sud Occidentale, FLAG Sardegna Orientale, FLAG Nord Sardegna) and one trade association, such as Legacoop.



Benefits and Knowledge obtained

Stakeholders demonstrated growth in knowledge and competence after participating in BLUEfasma Living Lab. Most of the companies participating in BLL stated that involvement in BLL has enabled them to adopt innovative solutions in their business.

Challenges and Risks

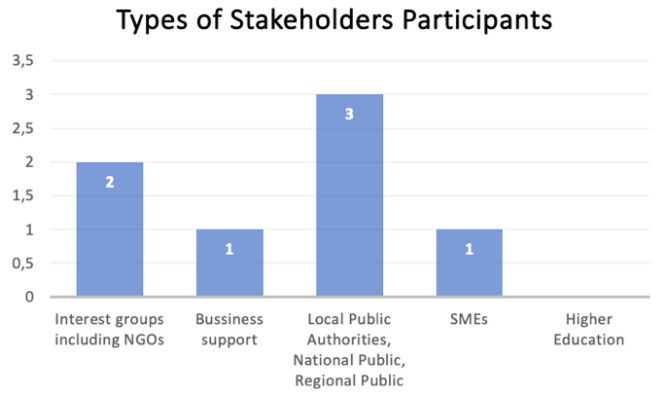
Achieve implementation of a strategy towards the circular economy but considering the strong differences of SMEs in the sector, linked to geographical differences, between companies of different sizes, as well as the intrinsic differences between aquaculture and fishery supply chains.

BLL - The Circular Economy and Blue Growth in Sicily - Italy/Sicily

The partner Distretto Taormina Etna launched its first "BlueFasma Fund Living Lab" (BFLL), with the participation of 6 local actors, local coastal authorities and actors from the fishing and aquaculture sector, to improve their capacity to innovate and encourage growth BLUE.

BLL participants

The event was attended by 8 people in total (out of 12 planned), among which two were stakeholders. The Stakeholders, as established by the BFLL principles, were not passive listeners, but interacted with the speakers or, in the case of Logis s.r.l., shared their specific sector experience to feed the discussion and disseminate useful content to all.



Benefits and Knowledge obtained

Knowledge of funding opportunities disseminated (national and regional programs)

Provided the participants with some useful tools to interpret the calls, evaluate if they are feasible, prepare the documentation to participate.

Challenges and Risks

involve 3 municipalities and make them collaborate with private companies.

Disseminate theoretical knowledge that is not very usable in practice.

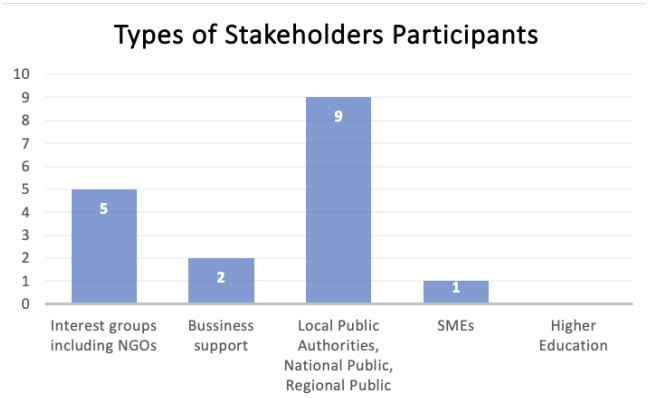
BLL - Safeguarding coastal heritage and recycling in fisheries – Malta/Valletta

The BLL was organized by the Maltese Department of Fisheries and Aquaculture, with the aim of seeking solutions on how to protect Malta's cultural heritage, improving risks to coastal cultural landscapes through the Circular Economy and using tourism as a means. to highlight and preserve cultural heritage. In addition, raise awareness

and propose specific solutions on how to recycle and reuse abandoned, lost or discarded fishing gear.

BLL participants

Overall, more than 60 stakeholders were reached for both BLLs. The type of stakeholders included: SMEs, business support organizations, public administrations, policy makers, social agents.



Benefits and Knowledge obtained

Awareness about the circular economy and identification of problems related to the coastal zone and fishing.

Challenges and Risks

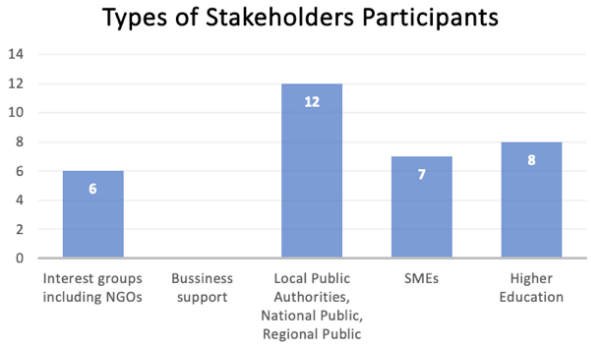
People from different areas and offer them a forum where they could present, discuss and collaboratively generate ideas and solutions for problems that impact the fishing sector.

BLL - Eco innovation in fisheries and aquaculture – Montenegro/Kotor & Bar

The BLL in Montenegro was organized with the Chamber of Economy of Montenegro in cooperation with the Associated Institute of Marine Biology, the Ministry of Agriculture, Forestry and Water Management, the Ministry of Economic Development, Investment and Development Fund and the Donja Gorica University.
Topics such as the rational use of water resources in fishing and aquaculture, the reduction of energy consumption in fishing and aquaculture, the importance, and possibilities of application of biological agents in aquaculture or the use of microalgae in food as part of the of the circular bioeconomy.

BLL participants

Given the good cooperation of the Chamber of Economy of Montenegro with stakeholders in this sector, the process of contacting potential participants has been greatly facilitated. In addition to involving stakeholders with whom cooperation has been established through previous projects, a major challenge has been to make new contacts.



Benefits and Knowledge obtained

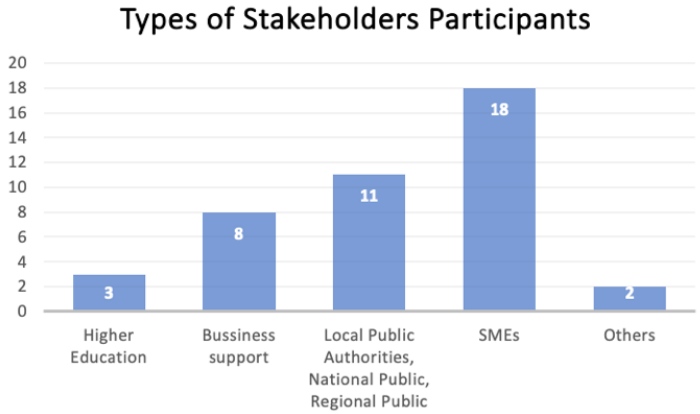
Application of the concept of circular economy, examples of good practices, financing opportunities.

Challenges and Risks
Lack of participation and commitment.

BLL - Circular economy in fisheries and aquaculture. Invasive species: threat or opportunity? - Greece/Crete

The Region of Crete and the University of Patras organized the Greek BLUEfasma Living Lab in Crete, supported by Dynamic Vision. It was focused on the Circular Economy in Fishing and Aquaculture, presenting BLUEfasma and good practices in the sector. And the issue of invasive species and how to turn the threat into an opportunity was addressed.

BLL participants
Directorates of Agricultural Development and Veterinary of the Regional Units of Region of Crete had in their position databases/lists with contact details of SMEs and business support organizations that are involved with the sector of fisheries and/or aquaculture. These lists were the main source for inviting the stakeholders to the BLL.
In the end, 316 stakeholders were invited to participate in the BLL, which consisted of SMEs, business associations, research institutions and relevant representatives of authorities (PA, policy makers etc.).



Benefits and Knowledge obtained
Raise awareness and strengthen capacities on the key pillars of the Circular Economy for SMEs.
Train SMEs in the self-assessment tool.

Challenges and Risks
Achieve sufficient stakeholder engagement.
Stakeholders unfamiliar with the technology.

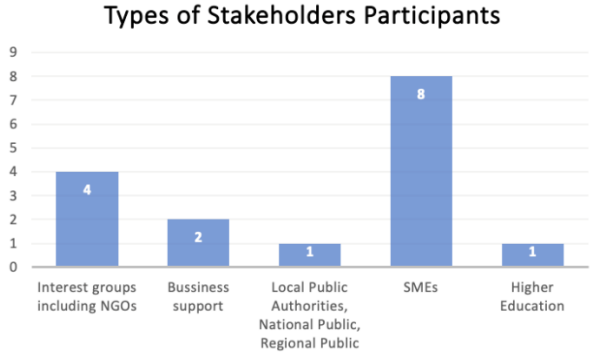
BLL - The circular economy and the sustainability of natural resources – Croatia/Dubrovnik

The Dubrovnik Neretva Regional Development Agency - DUNEA focused BLL on bivalve culture, being an important industry in this area, and currently considerable waste co-products, mainly shells, are underused, and disposed of in landfills or returned to the sea.

The goal has been to bring together different stakeholders and promote the use of bivalve shells as a valuable resource in many industries.




BLL participants
A variety of potential applications of waste shells are currently being exploited, and most of them are established in areas where large amounts of shell waste are generated. Mutually beneficial partnerships can be established between shell producers and other industries identified as appropriate stakeholders for our BLL.



Benefits and Knowledge obtained
New ways to eliminate waste in aquaculture and new knowledge about the principles of the circular economy.
New techniques for making souvenirs from aquaculture waste and instructions for successful market positioning.

Challenges and Risks
Involve the participants and encourage them to think about the principles of the circular economy.
The challenge is to come up with a functional way to involve SMEs in the process.

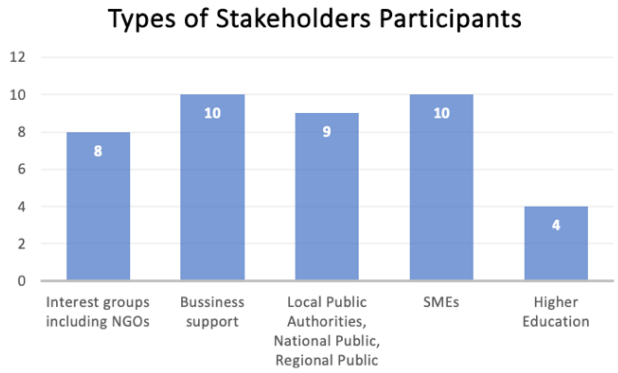
Innovation BLUEfasma Living Lab: Towards circular economy innovations for SMEs - France/Toulon

Pôle Mer Méditerranée – Toulon Var Technologies focused the BLL on the following specific challenge: how to valorize waste from aquaculture and fisheries? The notion of waste includes the shells from oysters and mussels concerning aquaculture and catches not marketable as well as fish waste (skin and bones).

Two main activities were carried out:

- Working groups sessions to gather the community, share knowledge and best practices, and bring out collective challenges, opportunities, and points of improvement for the valorization of waste from fisheries and aquaculture.
- Coaching for the recovery of waste in aquaculture and fishing and to support any idea of innovation related to a circular economy in both sectors.

BLL participants
Several types of stakeholders, located in Sud PACA or Occitanie regions, were targeted. A large diffusion has been done through several communication channels to maximize the involvement of potential stakeholders (digital communication and personal communication to the identified stakeholders).



Benefits and Knowledge obtained
Create a community
Provide knowledge about the surrounding economy
Share local initiatives
Allow networking

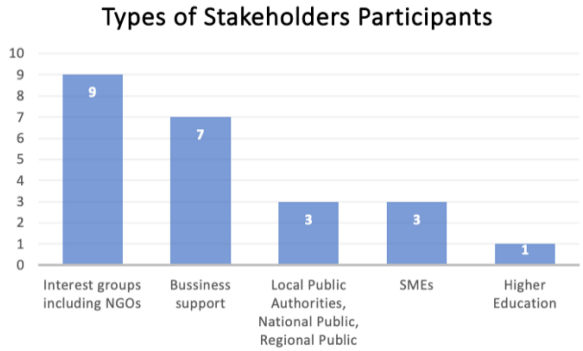
Challenges and Risks
Involve fishermen in the process as they are quite busy
Keep all stakeholders involved during the BLL process
Identify stakeholder need and find a topic of interest that could involve a broad spectrum of stakeholders

BLL - Eco-design, turning production "waste" in resource and making usage more circular - Cyprus/Larnaca

Larnaca-Famagusta District Development Agency ANETEL and Stratagem Energy focused the BLL on introducing the concept of eco-design to the fishing and aquaculture sector to rethink what they produce, how to produce it and how the product or service will be distributed.
Disseminate all the information to expand knowledge about circular economy.

BLL participants

Since ANETEL is a FLAG, we have a big database with local, regional, and national stakeholders that we involve in the different actions of the FLAG.



Benefits and Knowledge obtained

Key concepts of circular economy
Circular consumption and production practices
Rethinking the design of production systems and products (eco-design)
What to do with waste and by-products from fishing / aquaculture (production)
How equipment and products are used and maintained (use): what happens to the materials in these products when they reach the end of their useful life (recycling)

Challenges and Risks

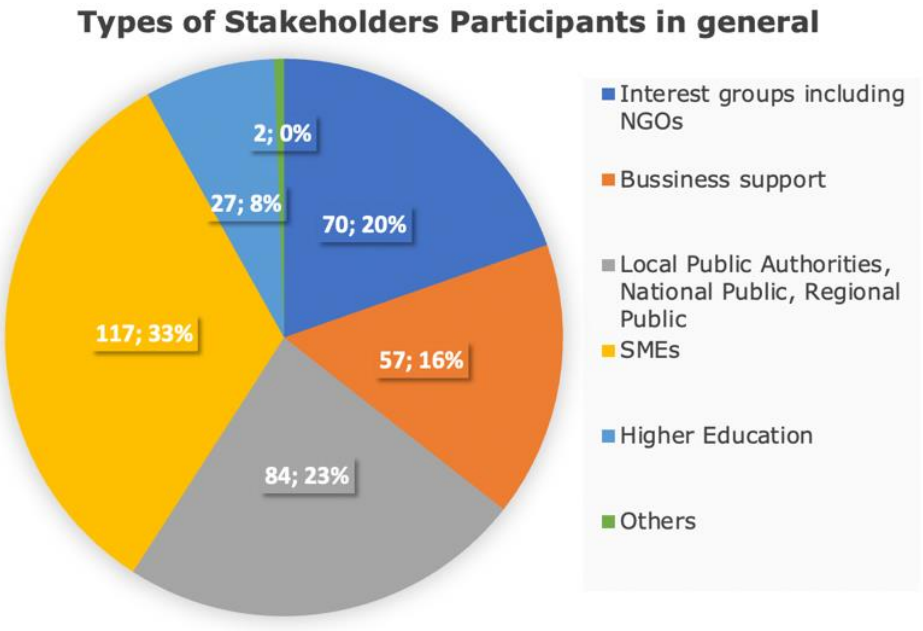
Bring together different actors both locally and nationally. Promote real changes in the fisheries and aquaculture sectors.
Lack of recycling facilities and high financial cost.
Lack of knowledge and need for education.

GENERAL RESULTS OF ALL BLLS

The data shown below represents all BLLs information collected for an overall outcome.

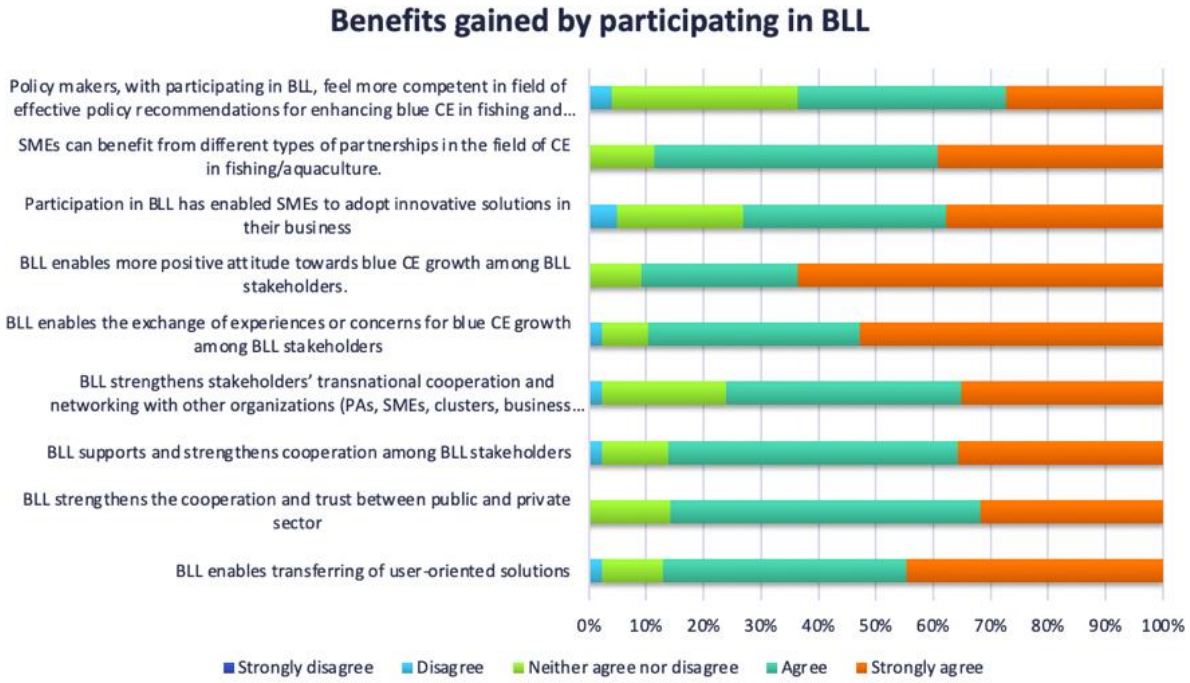
BLLs participants

In general, a total of 357 stakeholders participated in the BLLs. 33% of them, meaning 117 stakeholders, were SMEs, followed by a 23% with 84 Local/Regional/National Public Authorities. 20% of the participants represented 70 Interested groups, while 57 Business Support organizations participated. 8% of the participants represented Higher education institutes, with a total of 27 participating institutes.



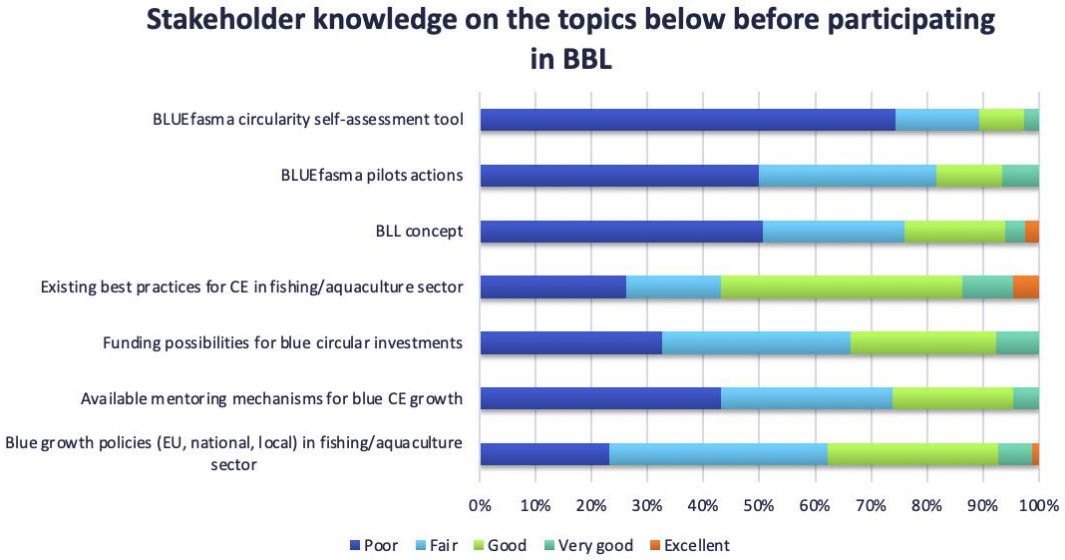
Benefits in general gained by participating in Bluefasma living lab

The benefits gained by participants on the BLL by the stakeholders, present in overall a positive response. With the best responses for the capability of the BLLs to enables more positive attitude towards blue CE growth among BLL stakeholders, as well as higher strengthens from stakeholders' transnational cooperation and networking with other organizations (PAs, SMEs, clusters, business support organization, etc.).



Stakeholder knowledge on the topics below before participating in BLL

The level of knowledge on the topics of the stakeholders before participating in the BLLs in general we can affirm that was poor. The 75% had no knowledge of the Bluefasma circularity self-assessment

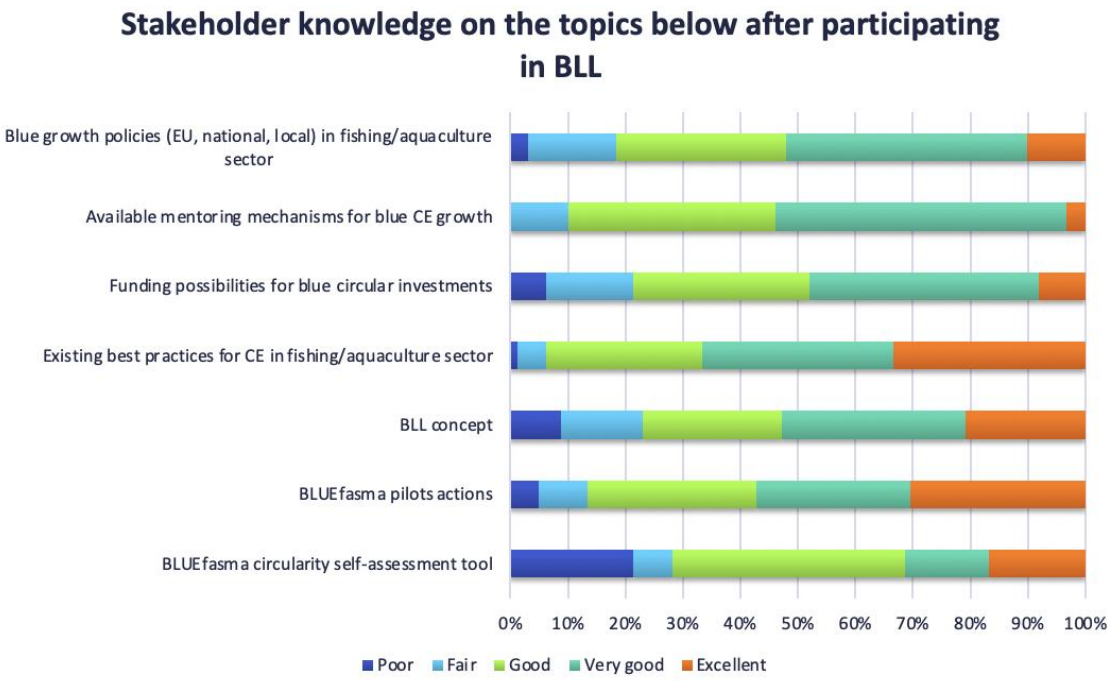


tool. And a 50% had no comprehension about Bluefasma pilot actions and the BLL concept.

Stakeholder knowledge on the topics below after participating in BLL

The level of knowledge on the topics of the stakeholders after participating in the BLLs in general presents a great improvement compared to the previous results. Now only a 22% of the stakeholders has no knowledge on the Bluefasma circularity self-assessment tool. And now, less than the 10% has no comprehension about the Bluefasma pilot actions and the BLL concept.

As a conclusion, we can affirm that the results after participating in the BLLs have increased for a more positive response in all topics.


Stakeholder knowledge on the topics below after participating in BLL
Blue growth policies (EU, national, local) in fishing/aquaculture sector
Available mentoring mechanisms for blue CE growth
Funding possibilities for blue circular investments
Existing best practices for CE in fishing/aquaculture sector
BLL concept
BLUEfasma pilots actions
BLUEfasma circularity self-assessment tool
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Poor
Fair
Good
Very good
Excellent

4. RECOMMENDATIONS

During the development of the BLUEfasma Living Labs, all the participating partners have carried out a series of necessary recommendations to adapt circular economy measures more optimally in the pilot projects that were carried out.

BLL - The circular economy in the context of blue growth - Portugal/Lisbon

1. An integrated approach with the creation of synergies between national authorities, research centers and the private sector.
2. Develop a relationship of greater proximity, of direct contact with companies, where they can have support to obtain financing for modernization and energy efficiency; advice on the best solutions on the market and financial support to improve infrastructure and equipment's; improve CE training and awareness of teams.
3. Promote best practices and networking events for SMEs.
4. Creation of Individual SMEs Action Plan for CE, with technical advice on best solutions on the market

BLL - Innovative solutions to reduce energy costs – Spain/Balearic Islands

1. Support local fisheries to design regenerative production systems that do not deplete fish populations or damage marine ecosystems, so that fishing activities are more sustainable, and businesses are preserved for the future.
2. Look for alternatives to plastic that are already being used in the market: materials based on algae, shells, fish scales, cotton, etc., it is vital to look for suppliers that innovate through new materials.
3. Reduce fuel requirements, for example by using new gear. Swap boat engines for ones that don't rely so heavily on petroleum-based fuels.
4. Reduce energy consumption in the sale and processing of the product.
5. Adopt renewable energies or better energy efficiency of the vehicles that transport the fish to the market, in machinery dedicated to the manufacture of ice for the conservation of fish,

in machinery that transforms the salty water of the sea into drinking water for the consumption of the associations of fishermen, etc.

BLL - Circular economy in retail and wholesale distribution: how to save and add value to products through good environmental practices – Spain/Barcelona

1. Explore and further incentivize the technological development of refrigerated electric / hybrid vehicles for transportation, as well as the use of bicycles for last-mile distribution. Involve the entire sector in the adoption of green energy providers. Involve SME unions in the significant purchase of compostable packaging to reduce the unit price and continue to encourage the identification of alternatives to EPS for the storage and transport of fish.
2. Encourage the transfer of research and testing into the practice of recycling and / or recycling organic fish / shellfish waste. Commit to better understanding the magnitude of the problem and possible solutions.

BLL - Undertaking a path towards a circular economy in the fields of fisheries and aquaculture – Italy/Sardinia

1. Use the results as a pilot study and build subsequent actions based on what emerged.
2. Disseminate the good practices collected.

BLL - The Circular Economy and Blue Growth in Sicily – Italy/Sicily

1. Improve, simplify, make more accessible the system of European funds aimed at the sector, limiting bureaucracy to a minimum, taking into account the reference target.

BLL - Safeguarding coastal heritage and recycling in fisheries - Malta/Valletta

1. Project result that will be used to develop new policies to safeguard the fishing sector.

BLL - Eco innovation in fisheries and aquaculture – Montenegro/Kotor & Bar

1. Develop appropriate policies, strategies and action plans that encourage and encourage the introduction of CE practices and the use of models from other countries to replicate them in Montenegro and adapt them according to local needs.

BLL - Circular economy in fisheries and aquaculture. Invasive species: threat or opportunity? – Greece/Crete

1. Installation of containers in ports to collect fishing equipment for recycling (eg nets, etc.).
2. Questions and reports for the self-assessment tool must be available in Greek.

BLL - The circular economy and the sustainability of natural resources – Croatia/Dubrovnik

1. It is recommended that municipalities and municipal tourism boards promote the destination with recognizable souvenirs made from local secondary raw materials and include associations of people with disabilities in the production process.
2. It is recommended that the techniques and recipes obtained in the project be given to the entrepreneurs for their use. Interested entrepreneurs will make unique souvenirs and jewelry from secondary raw materials.

BLL - Innovation BLUEfasma Living Lab: Towards circular economy innovations for SMEs – France/Toulon

1. Encourage the working groups within the fisheries and aquaculture axis of Pôle Mer Méditerranée to participate in workshops on circular economy topics suggested by the BLL participants themselves:
   - Recycle fishing gear and aquaculture equipment?
   - Produce eco-design of shellfish fishing / farming equipment, including biodegradable and bio-sourced materials?
   - Valorization of pastures collected at sea?
   - Insure farms against cattle theft?
   - Organize a selection of shells after the oyster tastings?
   - Raise awareness about recycling?
2. Another recommendation would be to create a community on the Cycl'op platform, which is an online platform dedicated to the circular economy in the Occitania region. This would allow the actors involved in the BLL to continue exchanging and being aware of financing opportunities.
3. Support SMEs that were coached to continue with their projects.

BLL - Eco-design, turning production "waste" in resource and making usage more circular – Cyprus/Larnaca

1. Results report for recommendation to the new operational program for Cyprus.
2. Further use of the BLL tools and pricing by transferring the methodology to the other two FLAGs in Cyprus.

The general main recommendations are:

- More participation from working groups within fisheries and aquaculture in workshops on CE topics.
- Creation of communities on the platforms that are dedicated to the circular economy in each country / region.
- More research on alternatives of plastic, reducing the consumption and adopting renewables energies.

- Encourage the transfer of research and testing into the practice of recycling.
- Create a more accessible, improved, and simplified system of system of European funds aimed at the sectors.
- The Development of appropriate policies, strategies and action plans that encourage the introduction of CE practices.

5. CONCLUSIONS

The conclusions found during the BLUEfasma Living Labs are explained below, detailed by each of the participating partners.

BLL - The circular economy in the context of blue growth - Portugal/Lisbon

Partnerships with professional associations should be established and involved in creating solutions; A policy brief on circular economy can be useful to support decisions on the blue circular economy.

Most SMEs are willing to change but fail to identify solutions to current work approaches and it was also found that despite this willingness to implement circular economy practices, one of the main obstacles was access to finance and lack of knowledge on the subject.

Networking and actively involve stakeholders in the process of exchanging experiences and concerns for blue CE innovative solutions and practices, blue eco-innovation, funding and mentoring, policy recommendation.

CE Action plan to support SMEs in the identification and implementation of CE measures and improving their energy efficiency.

BLL - Innovative solutions to reduce energy costs - Spain/Balearic Islands

The biggest problem in the sector is that it is extremely fragmented and due to its structure it does not have the necessary capacity to generate innovation. The sector needs assistance to generate this process, where ideas exist but then cannot be carried out due to lack of financing. Fishing is not the problem, it is the solution that can generate income from the blue circular economy. Regarding the implementation of solutions, the main conclusion is that we must develop a culture of innovation, understanding that the decision to innovate is not an expense but a profitable investment and a daily practice that favors business excellence. The implementation of a technological solution, as in the process of reducing energy costs in the use of water and ice in the fishermen's union, needs, As if it were a

product launch, evaluate its feasibility. To do this, the entrepreneur needs to be able to spread the culture of innovation, have a human team committed to improvement and appoint an innovation manager. All these strategic conditions of the company can determine the ability to innovate, of course with due financial support since without the appropriate means nothing is possible.

The impulse of the Fishermen's Guilds, the business associations of the sector, the administrations, the clusters, is fundamental. These organizations must carry out deep and continuous actions of training, mentoring and dissemination of the principles of the circular economy. By its very nature, the Circular Economy fosters connections between stakeholders and individual sectors. For all these reasons, the role of the administration is crucial: we are talking about the "Public-Private-People" implication to achieve a Circular Economy. Municipalities, as an administration close to citizens and companies, followed by regional governments, have an important role in promoting the Circular Economy, to achieve the integral sustainability of the territory.

BLL - Circular economy in retail and wholesale distribution: how to save and add value to products through good environmental practices – Spain/Barcelona

With reference to sustainability, circular economy is a new field to explore and new funding possibilities through European funds are coming in the following years. From the Barcelona fishermen's Guild there is a huge predisposition of collaboration in sustainable projects, especially regarding to fish delivery transportation.
Finally, it is essential to keep the contact network and proper communication among all the stakeholders involved: public administration, SMEs, research organizations, etc., as this will assure the success of future initiatives.

BLL - Undertaking a path towards a circular economy in the fields of fisheries and aquaculture – Italy/Sardinia

Addressing the circular economy transition requires a major collective effort as there are many actors involved, all with different interests and points of view. Several opportunities were identified such as economic savings, reduced environmental impact, diversification of income opportunities and the existence of public subsidies and/or public and private funds and were well known by local stakeholders. The interest groups involved in BLL were important in pointing out the lack of current legislation that is the main barrier emerged, along with the lack of communication / information towards consumers, and the collaboration between institutions, companies, and consumers.
In conclusion, what has been pointed out so far contributes to outline a context in which the effective creation of circuits and supply chains of the circular economy in a sector as important as fragile for the island's economy, such as the fisheries and aquaculture sector, is an opportunity that cannot be missed but that requires the contribution of all the necessary actors to act as drivers in a systemic and integrated way.

BLL - The Circular Economy and Blue Growth in Sicily – Italy/Sicily

Overall, the BFLL was very helpful and produced valuable information on the topic of funding and the needs of local stakeholders. At the end of the workshops, all participants demonstrated remarkable growth in knowledge and skills. The levels of knowledge and skills learned during BFLL activities (related to funding, circularity, blue growth, etc.) increased overall. The BFLL created a network of stakeholders who shared information and contacts, suggestions, and proposals, but still managed to complete a training and knowledge enhancement path on Circular Economy, Blue Growth and fundraising. This network already seems destined to last and the Distretto could play a connecting role.

BLL - Safeguarding coastal heritage and recycling in fisheries - Malta/Valletta

From the BLL recycling in fisheries we can conclude that the problem is marine litter, the stakeholders themselves have proposed solutions to be carried out to solve this problem: - Gear marking, on-board control technology to locate gear, spatial management, port stet measures, etc. and from the safeguarding of coastal heritage bll we can conclude that the problem is environmental threats, a solution to this: - identification, restoration, preventive.

BLL - Eco innovation in fisheries and aquaculture – Montenegro/Kotor & Bar

The fishing and agriculture sector of Montenegro represents the important part of the country's economy and therefore the implementation of these new concepts in the country is of great importance.
Future cooperation of the scientific research community with producers and fishermen in projects related to the circular economy is planned, as well as the development of new business models using digital technology and aquaponics techniques.

BLL - Circular economy in fisheries and aquaculture. Invasive species: threat or opportunity? – Greece/Crete

Most of Crete's professional fishermen are ecologically conscious and willing to recycle their fishing gear.
The possibility of translating the self-assessment tool into more languages should be explored.

BLL - The circular economy and the sustainability of natural resources – Croatia/Dubrovnik

The first steps have been taken to include the principles of the circular economy in the issue of waste management in fisheries and aquaculture.
The artisans showed great interest, as evidenced by the great response to the many workshops organized. We believe that the next tourist season, recognizable products obtained from fishing and aquaculture waste will appear on the market.

Innovation BLUEfasma Living Lab: Towards circular economy innovations for SMEs – France/Toulon

SMEs, which do not have all the internal resources (time, person) and experience to implement circular economy projects, through the support received has been a real boost for their projects.
In the BLL, the set objectives have been achieved, among which the following stand out:

• To create a community
A diversity of types of actors has been reached, with a good representation of public authorities. Fishermen and fish farmers were reached through the professional associations that represent them given the difficulty of reaching them directly. The workshops have been dynamic, with strong stakeholder participation. Get to know each other, share ideas and impressions, interact is the goal.
In addition, most of the participants attended several sessions, which shows great interest in the subject, as well as the viability and relevance of creating such a community.
• Provide knowledge about circular economy.
Many stakeholders improved their knowledge of circular economy by participating in the activities of the living lab, judging from the results of the satisfaction survey. To respond to their needs, emphasis was placed on regulatory aspects.
• Share local initiatives
The BLL was the opportunity to share existing good practices in terms of circular economy.
• Networking

One of the positive outcomes of the BLL is networking. The BLLs have made it possible to identify the main actors involved in the recovery of waste in Occitanie and Sud PACA.

BLL - Eco-design, turning production "waste" in resource and making usage more circular – Cyprus/Larnaca

The concept of circular economy is gaining more and more recognition, although it is still in its infancy in many areas of Cyprus.
To move towards a more circular economy, we must take the following five steps:

1. Analyze the potential of the circular economy in Cyprus,
2. Awareness to change mentalities and behaviors,
3. Build on new innovative ideas,
4. Build partnerships and synergies,
5. Rethink business models and attract in

The general conclusion is the manifest predisposition on the part of the fishing and aquaculture sectors to adopt the circular economy and prioritize its establishment along the value chain as a key element for the future.

The barrier to a sustainable development of the sector resides in the current framework of technical, legal, economic, and financial support if it is really desired to overcome the latent risks and meet the challenges identified in the experiences lived through the Living-Lab.