



Multiregional collaboration schemes:

Knowledge transfer

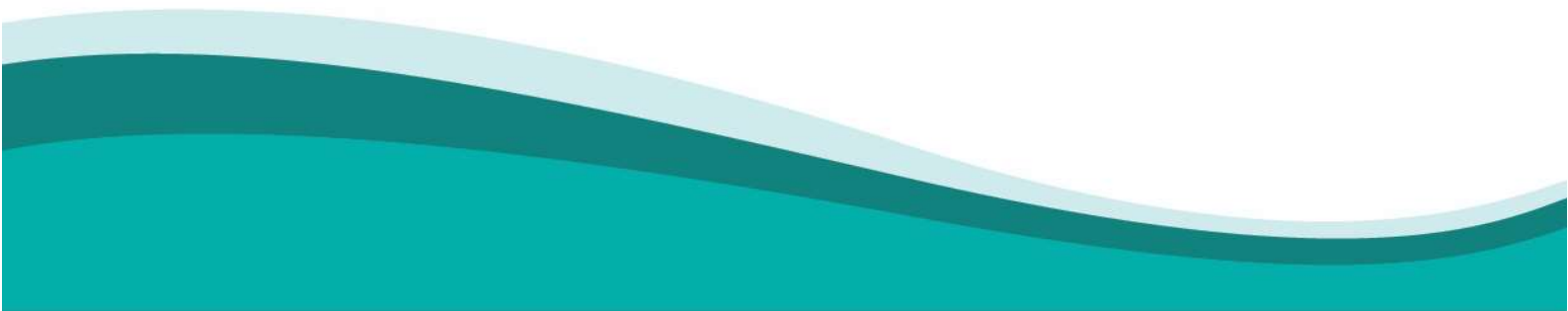
WP3.A5 Report

University College Cork



Contents

Executive Summary.....	3
Introduction	4
Findings	5
Survey Findings	5
Knowledge Exchange in the Marine-based Space	5
Opportunities and Challenges in the Marine Development.....	9
Summary and Brief Analysis	11
Online Session Findings.....	12
Summary and Brief Analysis	15
Recommendations	16





Executive Summary

ProtoAtlantic, an Interreg Atlantic Area funded project, aims to develop and validate a model for the prototyping and exploitation of innovative ideas in the maritime sector in the Atlantic Area. To support this model, ProtoAtlantic hosted multiregional collaboration schemes with the aim to reinforce cooperation and multisite-based action to support the development of innovative solutions in blue growth-related sectors. For each collaboration scheme a committee of experts and stakeholders belonging to the participating regions joined to discuss common opportunities and challenges. The ProtoAtlantic partner regions include Brest in France, Cork in Ireland, Porto in Portugal, Orkney in Scotland, and the Canaries in Spain.

The aim of this multiregional collaboration scheme was to gain a deeper understanding on **fostering the share of knowledge, coordination and common objectives among stakeholders in the marine ecosystem**. The event was hosted by MaREI, University College Cork, on **April 26th 2023** and was attended by over thirty-five critical marine and blue growth stakeholders across the Atlantic area. The event was opened with a welcome from Jessica Giannoumis, project manager for the project in University College Cork. This was followed by a presentation by Dario Sosa, from Subsea Mechatronics, who discussed their experience of the ProtoAtlantic project and its valuable impact on his company. The event was facilitated by Dr. Lawrence Dooley, Principal Investigator and Senior Lecturer in Enterprise and Innovation at Cork University Business School.

The findings from the session on knowledge transfer highlighted a need to nurture cross-regional collaboration by facilitating regional, national, and international networking opportunities to identify and realise collaborative synergies. From a regional perspective, there is need to invest into building support infrastructure, such as roads, airports, internet access, etc. to provide easier access to remote and peripheral regions. A need for cross-regional matchmaking to increase collaboration potential also emerged as a key finding.

Report written by Jessica Giannoumis and reviewed by Dr. Lawrence Dooley.

Special thanks to Cathal Gannon for administrative support in the organisation of the event.

Introduction

The aim of this session was to gain a deeper understanding the challenges and opportunities that stakeholders across the Atlantic experience in accessing funding opportunities, new international markets, and business strategic partners. 40 attendees registered for the event with 35 attendees from across the Atlantic area actively participating in the event (figure 1). It should be noted that not every registered attendee attended the event and that not every active session participant was registered for the event. Thus, the findings of the online-session and open dialogue are not necessarily representative of the registered attendees.

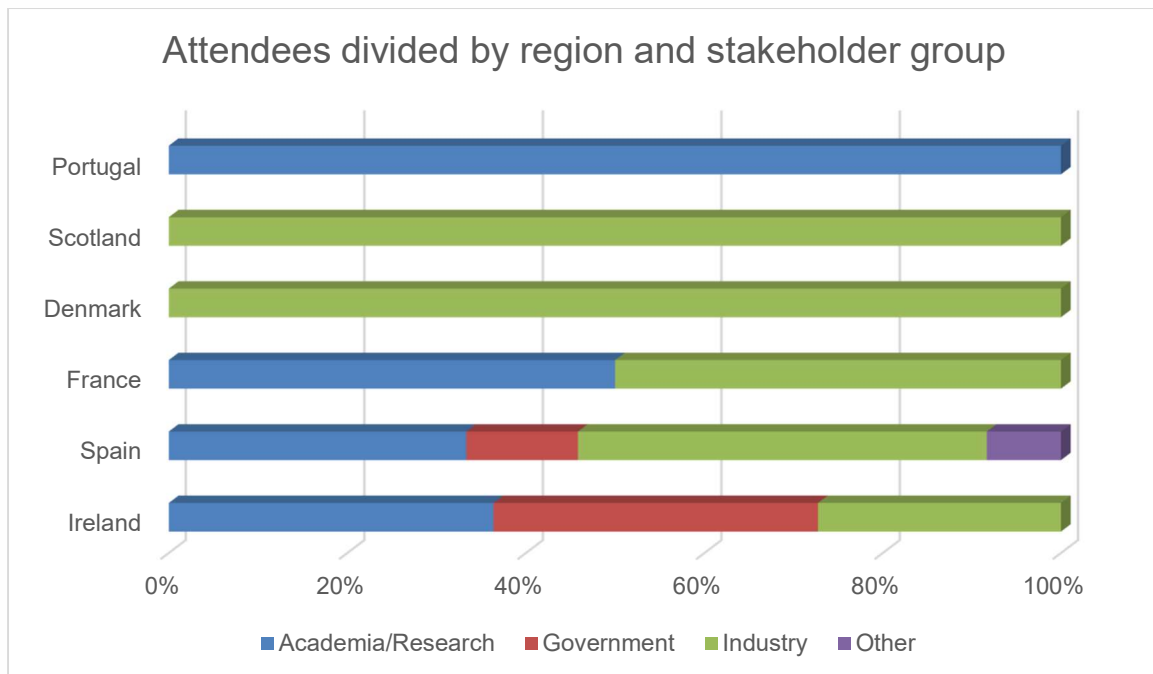


Figure 1 ProtoAtlantic session attendees divided by region (Atlantic area) and stakeholder group

Ireland and Spain had the most attendees with 11 and 24 attendees respectively. Furthermore, there was a large interest from industry and academia – 13 and 22 respectively. This indicates a large interest from industry and academia.

The following section will present the findings from session before presenting an analysis and recommendations based on the findings.

Findings

The findings are divided into two sections:

1. The first section presents the findings from a survey that the attendees of the multiregional collaboration scheme filled out to inform the topics and discussion for the interactive session.
2. The second section presents the findings from the online session which included multiple-choice questions that were asked during the multiregional collaboration scheme and open-ended discussion with the attending stakeholders.

Survey Findings

Prior to the session, attendees responded to a brief online survey to provide insights from a regional perspective on accessing funding for marine-based technologies. The findings from that survey are summarised and presented below followed by a brief analysis of common challenges and opportunities. The survey findings are indicative of registered attendees and are not necessarily capturing the views of the participants that attended the live event.

Knowledge Exchange in the Marine-based Space

The attendees were asked to identify **regional opportunities and challenges for knowledge exchange in the marine-based space**. The findings are presented per region below in tables 1-5.

Table 1 Irish stakeholder feedback from on opportunities and challenges for knowledge exchange across Europe, results from pre-survey

Stakeholder feedback in Ireland	
Opportunities	Challenges
Open access is becoming default option for dissemination of scientific knowledge	Different stakeholder groups use different means of knowledge exchange
	Government and academic silos
	Although MIIN is free the interaction is sporadic and informal. Membership of MRIA and Wind Energy Ireland would cost a total of €8.5 per year which is completely out of reach for an SME trying to develop a technology. I believe that the small technology developers could really benefit from having a forum to discuss and overcome the challenge of the sector, and perhaps even lobby for

	more funding. Moreover, I think there would be genuine enthusiasm to contribute.
There is the Irish Maritime Industry Network. They hold quarterly meet ups around Ireland. This is a good opportunity for knowledge exchange and networking. I think this could roll out into regional hubs.	Finding time and formalising a process to do this consistently and successfully. Linking academic knowledge with private sector knowledge and local practice-based knowledge in a consistent way
Well established regional and pan-European networks (CPMR, EMB, and so on) to leverage for knowledge exchange	There was great momentum before Covid in meeting fellow developers in the maritime domain in Cork/Southern area. A lot of events were arranged by UCC/EI/Entrepreneurship. This has pretty much stopped. As a small start-up, you need to balance time/energy to keep revenue coming in for day-to-day expenses, but also to keep up development work and stay informed of opportunities in funding and industry trends. Getting this balance right can be tricky!

Table 2 Spanish stakeholder feedback from on opportunities and challenges for knowledge exchange across Europe, results from pre-survey

Stakeholder feedback in Spain	
Opportunities	Challenges
There are meetings and specialized events organized by the Maritime Cluster and other institutions in the Canary Islands.	Low volume knowledge production compared to other regions
Renewable energies	Top knowledge creators migration to other countries
Established marine development teams. Regional networks.	Lack of contact between companies and academia; creation of technology based startups
Different European programmes can be used for knowledge exchange and transfer, as well as for skills development among marine professionals, employment and entrepreneurship. some of these programmes are: INTERREG MAC, Europe and Atlantic, Horizon Europe, European Maritime, Fisheries and Aquaculture Fund (EMFAF), Erasmus+, COSME	The already mentioned challenges accessing to funding in the Canary Islands' marine-based space, can make it difficult to attract and retain experts and to invest in the infrastructure necessary to support knowledge exchange

<p>During POEM elaboration in Spain, several workshops were organised to get to know the point of view of different sectors in the marine economy. This kind of workshop should be done regularly so there is a good knowledge exchange and synergies can be created between different sectors</p>	<p>The regulatory framework for marine-based activities in the Canary Islands can be complex and difficult to navigate. This can make it difficult for researchers and scientists to carry out their work and to exchange knowledge with other experts</p>
<p>Regional opportunities in the relationship between science and decision-making, specifically in relation to marine ecosystems and resources, is crucial in the advance on sustainable environmental solutions</p>	<p>The Canary Islands' geographic location presents challenges in terms of access to resources and participation in global research networks, which can impact knowledge exchange opportunities</p>
<p>The Canary Islands are home to several research centers and universities focused on marine science and technology. This presents an opportunity for researchers and scientists to collaborate and share knowledge to advance research and development in the marine-based space. Strong research community</p>	<p>Despite having research centers, the Canary Islands face challenges of limited resources, including funding and infrastructure, which can limit knowledge exchange in the marine-based space</p>
<p>The Canary Islands have a unique marine ecosystem with a high level of biodiversity. This provides a great opportunity for researchers and scientists to study and exchange knowledge about marine life and ecosystems. Access to unique marine environments. Privileged marine conditions.</p>	<p>The primary language spoken in the Canary Islands is Spanish, which can be a barrier to knowledge exchange with researchers and experts from other parts of the world. Efforts to overcome language barriers through translation services and language training programs can enhance knowledge exchange in the marine-based space.</p>
<p>The Canary Islands have great potential for the development of marine renewable energy sources, such as wave and tidal power. This presents an opportunity for knowledge exchange among experts in the field to develop and implement sustainable energy solutions</p>	
<p>The tourism industry in the Canary Islands provides opportunities for knowledge exchange through marine-related activities such as scuba diving, marine conservation, and sustainable tourism practices. These activities can facilitate knowledge exchange between local and international tourists, researchers, and experts.</p>	<p>Lack of data exchange between businesses. Privacy of Data. IP issues etc.</p>
<p>Data sharing networks such as EMODNET and COPERNICUS already exist</p>	



Table 3 French stakeholder feedback from on opportunities and challenges for knowledge exchange across Europe, results from pre-survey

Stakeholder feedback in France	
Opportunities	Challenges
	Lack of time and willingness. I can share the feedbacks from previous Interreg-project such as BlueGIFT, regarding knowledge sharing

Table 4 Portuguese stakeholder feedback from on opportunities and challenges for knowledge exchange across Europe, results from pre-survey

Stakeholder feedback in Portugal	
Opportunities	Challenges
Research expertise above mentioned, and blue economy offer opportunities for knowledge exchange in marine-based space through collaborations, partnerships, and networking among stakeholders, including academia, industry, and government.	Language barriers, varying research priorities, limited resources, and coordination among diverse stakeholders (academia, industry and government bodies) may pose challenges for effective knowledge exchange in the marine-based space.
Collaborative projects	Support and resources for training
	Lack of funding

Table 5 Danish stakeholder feedback from on opportunities and challenges for knowledge exchange across Europe, results from pre-survey

Stakeholder feedback in Ireland	
Opportunities	Challenges
Work together and not against each other to put pressure on local politicians to support marine technologies even more	Companies fear to share a lot of insights since they don't want to lose their competitiveness

Opportunities and Challenges in the Marine Development

The stakeholders were also asked to identify **other potential challenges and opportunities they have experienced in the marine development**. The findings are presented per region below in tables 6-9.

Table 6 Irish stakeholder feedback from on opportunities and challenges on general marine development across Europe, results from pre-survey

Stakeholder feedback from Ireland	
Opportunities	Challenges
<p>Before Covid the world, and very much the EU, was reliant on goods from China. The greatest opportunities lie in the development of EU tech to be manufactured within the EU and distributed from the EU.</p>	<p>In many cases the technologies for a sustainable blue economy exist but their deployment is slowed by policy and governance challenges</p>
	<p>There must be a realisation that developing hardware for the marine environment is inherently capital intensive. It would appear that funding SaaS or even the expensive and slow Medtech development is must more attractive than hardware in the marine space. Perhaps we need to focus on educating and enthusing VCs into our area.</p>
	<p>Complex policy framework, polarised attitudes towards marine development. NIMBYISM. Tragedy of the commons.</p>
	<p>Costs are increasing as a result of the war in Ukraine, restart after Covid, supply chain issues especially from China.</p>

Table 7 Spanish stakeholder feedback from on opportunities and challenges on general marine development across Europe, results from pre-survey

Stakeholder feedback from Spain	
Opportunities	Challenges
Innovation and entrepreneurship, like renewable energy, aquaculture. Collaboration between academia and industry. Growing demand for sustainable products and services	Some regions with limited infrastructure and resources. Climate change and environmental degradation.
Technical support and consultancy for the development, up-scaling and demonstration under real conditions of innovative solutions using local desalination infrastructure at all scales for R&D purposes.	Most tech developers are in what is called the valley of death, meaning the technology is high risk while needing funding to survive. This involves that they can't compete against other technologies with a lower risk profile, reason why we need specific calls to develop and test our technologies.
	Gender imbalance: The lack of women in marine development is a well-known issue and there are several factors that contribute to this gender imbalance, including cultural and societal norms, limited access to education and training opportunities, and workplace biases and discrimination.
Access to funding	Other challenges and opportunities are to address future challenges related to climate change
	Data sharing issues
Opportunities mentioned in previous sections (networks and funding)	Challenges incorporating sustainability and digitization in the sector.
	Challenges incorporating sustainability and digitization in the sector.

Table 8 Portuguese stakeholder feedback from on opportunities and challenges on general marine development across Europe, results from pre-survey

Stakeholder feedback from Portugal	
Opportunities	Challenges
	Difficult for start-ups and SMEs to engage

Table 9 Danish stakeholder feedback from on opportunities and challenges on general marine development across Europe, results from pre-survey

Stakeholder feedback from Denmark	
Opportunities	Challenges
	Slow processes, misconceptions of wave energy leading to no motivation to collaborate, lack of regional resources to accomplish their 2030 wave energy strategy, highly protected marine nature combined with fear about harmful wave energy, people need to understand that CO2 is harming their marine environment and wave energy is one out of many solutions to avoid and reduce CO2 to protect the oceans and reduce ocean acidification and deoxygenation

Summary and Brief Analysis

The summary highlights cross-regional common challenges and opportunities in knowledge transfer in marine sectors.

The stakeholders identified a need for better alignment across industry, academia, and government starting with developing a common understanding of terminology used to identify and realise marine development. This should be aligned with the EU level. Consequently, this common understanding will enable coastal regions to identify potential collaborative synergies across the regions.

European-funded projects, such as ProtoAtlantic, support cross-regional knowledge exchange and should be utilised for skills development, creating employment opportunities, and nurturing entrepreneurship on an international level. The knowledge harnessed within these projects should be effectively utilised on a regional and national level, to enable coastal regions to identify opportunities for marine development, i.e., identify necessary skills and enable collaboration across industry and academia to foster these skills.

The stakeholders identified that clusters support marine development as they present opportunities for networking and building collaboration. Clusters could support the regional matchmaking, as they have and provide access to the regional stakeholders and thus remove market entry barriers.

Online Session Findings

The first part of the online live session consisted of four multiple-choice questions. The first one was more general, whereas the latter three were bespoke to understanding opportunities and challenges of accessing funding for marine-based technologies.

The first questions concerned the current understanding of blue growth development across the regions. A word-cloud was created that presented all the findings with phrases or words that have been mentioned repeatedly being presented in bigger fonts and bolder colours (figure 2).



Figure 2 Results from the first session question, findings presented in word cloud where words/phrases that have been mentioned repeatedly are presented in larger font and bolder colours

The above set the precedence for the session. The second question of knowledge exchange asked attendees for their awareness of existing marine stakeholders across Europe. Half of the attendees noted that they were barely aware of existing marine stakeholders across Europe (figure 3).

★ Q1a: How aware are you of marine stakeholders across Europe?

Rating Poll 18 votes 18 participants

Score: 2.5

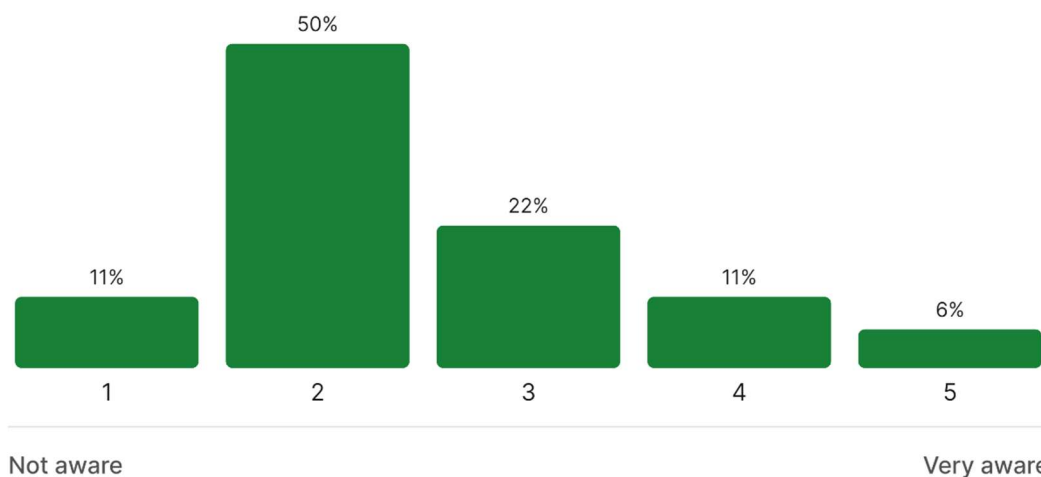


Figure 3 Respondents of awareness of marine testing infrastructure across Europe with 1 = aware and 5 = very aware

The attendees were asked three open-ended questions to gain some more insight into knowledge transfer and enabling collaborations across Europe (table 10-12).

Table 10 First question on knowledge transfer

Country	What routines encourage your collaboration with marine stakeholders?
SP	Talking to and collaborating with experts and active organisations
SP	Expressions of interest
SP	Network, congress, and fairs
SP	International conferences
SP	Find experts in some specific technologies
SP	Networking events
SP	Collaboration workshops like this one
N/A	B2B events
N/A	To add an activity in the context of an event to facilitate the interaction (ex. Gamification)
N/A	Conferences, physical networking events (national and international level)
N/A	Physical networking events
N/A	Going to a marine activity event and making sure I talk to five people about their day on the sea

Table 11 First question on knowledge transfer

Country	How do you seek out and promote appropriate knowledge exchange?
IRL	Open innovation networks like the Information Exchange which try to match corporate challenges to SME solutions
IRL	I make an active effort to meet people who work in areas different from mine and ask them about their work
IRL	Understand how to collaborate otherwise you may just end up subcontracting someone
IRL	We organise workshops and events, and facilitate interactions – seeking out and promoting KE in doing so, and learn loads in the process
IRL	Professional media and other online platforms linked to partnering/collaboration
SP	Joining clusters and knowledge networks
SP	Working groups with a concrete purpose
SP	Trying to participate in networks and seeking centrality in these knowledge networks
SP	Talking to and collaborating with experts and active organisations
SP	By physical events, but rarely start-ups in competence share relevant information
SP	Technology market places (owned by the entity and others), networking sites, fairs, events, consultancy support
N/A	You must be able to describe what you need from a knowledge exchange and understand what the other party will also gain

Table 12 First question on knowledge transfer

Country	How do you protect your knowledge when engaging in collaborations?
IRL	Doing IDFs when we create something, and engaging with folks outside the university with appropriate MTAs and NDAs – our technology transfer folks are brilliant support for this
IRL	NDA, but ultimately developing 1:1 trust
IRL	To date, badly, but I am seeking out training to be better
SP	Signing NDA
SP	By signing NDA between both parts
SP	IPR registers and NDA management
SP	By signing NDAs and sharing limited information
N/A	MoU

Summary and Brief Analysis

The attendees were asked to discuss **how pan-European collaborations for effective knowledge exchange can be nurtured.**

The attendees highlighted that collaboration within and across regions needs to be nurtured and enabled as there are currently missed opportunities in the realisation of marine development. Attendees highlighted a need to increase awareness to the challenges experienced in coastal regions, such as need for securing renewable energy, sustainable development of coastal regions with limited access to private or public funding, etc. Furthermore, there is a need to develop mechanisms to support and learn from these experiences, i.e., cross-regional collaboration and research projects must focus on the challenges, and opportunities of coastal regions to ensure sustainable development.

The need to further integrate clusters and utilise these for knowledge exchange has been raised by attendees. Thus, to enable long-term sustainable development, long-term mechanisms must be considered to enable knowledge generation (through university and academia), and skill development to meet industry needs. Cluster development can act as a one-stop-shop and as can support the development of marine sectors. The attendees also highlighted a need to better integrate and utilise private industry to support marine development. This, it was highlighted, must be done on a European, national, and regional level.

Figure 5 presents a screenshot of the opening session of the multiregional collaboration scheme.



Figure 4 Screenshot of the opening session of the multiregional collaboration scheme

Recommendations

The aim of this multiregional collaboration scheme was to gain a deeper understanding on fostering the share of knowledge, coordination, and common objectives among stakeholders in the marine ecosystem. The research findings highlighted that there is a correlation between knowledge transfer, funding mechanisms, and technology development and as such, each of these themes should be looked at in conjunction with each other rather than in isolation.

The multiregional collaboration scheme emphasised a need for political leadership in the marine spaces with a long-term vision for regional development, strong industry and research connections, and the need for private and public investment opportunities to nurture the development of marine sectors. Based on the results, some high-level recommendations at EU-level and cross-regional level can be made, these are presented below.

- **Need for capacity building of knowledge network.**

The multiregional collaboration scheme highlighted that across the regions there is a need to foster a knowledge network, i.e., enable networking opportunities and identify potential collaborative synergies across academia, industry, and government. Building these regional collaboration efforts would ensure stakeholder alignment within the regions, as this enables stakeholders to identify potential marine development opportunities as well as create a common vision to realise these opportunities. In the absence of a knowledge network, European regions run the risk of missed marine development opportunities which could slow down and halt the transition towards a sustainable marine development.

- **A need to build support infrastructure to enable traveling across the coastal and peripheral areas from a regional perspective.**

A major benefit of EU-funded projects, such as ProtoAtlantic, is the opportunity for project partners to travel across coastal and peripheral areas to gain a regional perspective and understanding of why and how marine development is emerging and developing regionally. These cross-regional learnings build regional capacities as they allow for coastal regions to identify potential development opportunities and unique competitive advantages. Thus, cross-regional travels with the explicit intention of gaining a comprehensive understanding of how regional stakeholders collaborate, what testing infrastructure may look like, and how regional marine resources are being utilised, including creating knowledge and technology development, offers unique insights into potential enablers and challenges of marine development. These *study tours* are invaluable for knowledge transfer and should be a vital part of cross-regional collaboration projects.

- **Need to building trust and due diligence to support the collaboration across the regional stakeholders, i.e., face-to-face meetings, touring and developing marine infrastructure together, collaborating on projects, etc.**

Increasing knowledge transfer across stakeholders, within, and across regions requires both awareness of the regional key stakeholders and enabling opportunities to build trust across the stakeholders. However, building collaboration requires time and effort. *Study tours* are an important part of this and can positively contribute to nurturing the cross-regional relationships. This can build long-term relationships within and across regions. Furthermore, networking events are vital to building capacities, understanding regional stakeholders, and how they operate, and subsequently, this knowledge can be harnessed to realise a long-term vision of marine development. Networking events also support the regional innovation ecosystem, as stakeholders gain access to a knowledge ecosystem where they can identify potential opportunities for innovative solutions. Subsequently, they nurture regional entrepreneurship and build regional economic development.

- **Need for cross-regional matchmaking to support stakeholders in identifying the right partners.**

To access funding mechanisms and to gain access to marine infrastructures, there is a need to identify partners that can support projects and programmes. The stakeholders of the multiregional collaboration scheme identified matchmaking events as an opportunity for stakeholders to meet, network, and connect to identify opportunities for potential collaboration projects. Supporting such events also allows regional stakeholders to synergise their ideas, i.e., identify common opportunities and challenges and create a common strategy to overcome technology development or other barriers of development. On a cross-regional, and regional levels, the organisation of such events should be prioritised.

Two overarching themes emerged, firstly knowledge transfer needs to take place on an enterprise level, on a regional and national level. Thus, mechanisms to support learning across stakeholders should be targeted and supported to ensure regional marine development. Secondly, to enable regional and cross-regional knowledge transfer, there is a need to better understand the available funding mechanisms and the available marine infrastructure. This allows coastal regions to identify and realise their unique competitive advantages of realising their full marine potential.

Lead Partner



Main Partners



Associated Partners

