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MUSES Project

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List of abbreviations

CPMR – Conference of Peripheral Maritime Regions

EMEC – European Marine Energy Centre

EMFF – European Maritime and Fisheries Policy

ERI – Environmental Research Institution

EU – European Union

EZZ – Exclusive Economic Zone

GES – Good Environmental Status

GHG – Greenhouse Gas

GMA – Association for Marine Aquaculture Ltd.

ICES – International Council for the Exploration of the Sea

IMO – International Maritime Organization

MU – Multi-Use

MPA – Marine Protected Area

MRE – Marine Resource Economics

MSC – Mediterranean Shipping Company S.A

NGO – Non Governmental Organisation

NI –Northern Ireland

O&G – Oil and Gas

OW – Offshore Wind

OWF – Offshore Wind Farm

RAS – Recirculation Aquaculture Systems

RoI– Republic of Ireland

RSPB – Royal Society for the Protection of Birds

SAMS – Scottish Association for Marine Science

SEA – Strategic Environmental Assessment

SMEs – Small and Medium-sized Enterprises

SMPTE –Sectoral Marine Plan For Tidal Energy

SNA – Stakeholder Network Analysis

TCT – Tidal Current Turbine

TRLs – Technology Readiness Levels

UCH – Underwater Cultural Heritage

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EU countries' abbreviations

Belgium	(BE)	Greece	(EL)	Lithuania	(LT)	Portugal	(PT)
Bulgaria	(BG)	Spain	(ES)	Luxembourg	(LU)	Romania	(RO)
Czech Republic	(CZ)	France	(FR)	Hungary	(HU)	Slovenia	(SI)
Denmark	(DK)	Croatia	(HR)	Malta	(MT)	Slovakia	(SK)
Germany	(DE)	Italy	(IT)	Netherlands	(NL)	Finland	(FI)
Estonia	(EE)	Cyprus	(CY)	Austria	(AT)	Sweden	(SE)
Ireland	(IE)	Latvia	(LV)	Poland	(PL)	United Kingdom	(UK)

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1. Introduction

The MUSES stakeholder environment is highly diverse and complex, and requires a thorough understanding of the wide range of stakeholder groups. A number of multi-use (MU) combinations explored in this project are characterised by a diverse range of individuals, groups and organisations with common and/or competing interests operating at a variety of spatial scales. Namely, there are a wide range of interests in and positions on MU, which are manifested at varying scales and degrees of intensity.

The stakeholder definition used for the purpose of this project is derived from the European Commission –EuropeAid Cooperation Office (2004) and describes stakeholders as individuals or institutions that may – directly or indirectly, positively or negatively – affect or be affected by a project or programme, in this case, the **change from single use of a maritime space to the reality of having more uses in the same space**[1].

The overall aim of stakeholder analysis is to gain a better understanding of the various actors relevant in the context of MU combinations examined in the MUSES project. Therefore, taking into consideration different geographical scales, the stakeholder profiles will be developed with specific attention to those actors identified to be behind the drivers and barriers for the multi-use development in question. This is essential for development of an Action Plan, which will be targeting the suitable type of stakeholders with the right type of action, taking into account national, regional and sea basin dimensions. Specifically, the Action Plan will highlight the real opportunities for MUs in European Seas including the scope for innovation and Blue Growth potential, and propose solutions to overcome existing barriers.

The Stakeholders Profile analyses all the stakeholder related information collected on different spatial scales; case study, national, sea basin and EU. For each of the multi-use combinations, stakeholder profiles have been developed, and visualized through Venn diagrams, providing a clear overview of relevant actors on different geographical scales, for each of the examined combinations.

2. Purpose of the Stakeholder Profile Report

The purpose of this document is to provide overview stakeholder profiles, presenting one of the essential steps in development of an Action Plan. It builds on the work of all other tasks to establish appropriate links with macro-regional and sea basin strategies and plans, stakeholder forums as well as relevant policy processes. Having a good understanding of stakeholder profiles is a prerequisitefor establishment of mechanisms for attracting stakeholder input into the Action Planning process, for effectively feeding the actions back into relevant policy processes, and providing recommendations on ways to achieve social acceptability. In order to ensure the acceptance and implementation of the Action Plan, it is crucial to have those with the power at the table, actively involved in the early development stages of the Action Plan process. **As this is an ongoing iterative process, the stakeholder analysis on country and sea basin level will also identify**

[1] European Commission - EuropeAid Cooperation Office (2004). Aid Delivery Methods – Project Cycle Management Guidelines Volume 1. Brussels

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the main information and knowledge gaps to be filled during the stakeholder engagement process for the Action Plan.

This document is of direct practical use for those planning to develop certain MU, allowing them to understand which actors might be in favor or against such development and which actors might be relevant in general, regardless their attitude towards MU development. It provides a characterization of stakeholders including their power, the way they are organized, their activity in the field of MU, and overall attitude towards MU. The insightful analysis from the MUSES Project may serve needs of several target groups:

- policy makers – to support with the selection on whom to consult with when developing relevant MU related policies;
- future MU project initiators – to foster recognition on whom to make partnerships with and with whom to consult or engage with further;
- funding bodies - to broaden understanding of who might be suitable groups to target with their funding programmes;
- maritime spatial planners and regulators - to identify relevant actors to engage with when developing or revising plans and/or MU relevant legislation and guidance;
- national, regional and local administration – to increase institutional capacity when dealing with innovative initiatives that requires formal administrative interventions

The visuals produced for this report are meant to serve as a *teaser communication tool* for stakeholders during the Action Plan engagement process. Given its interesting content, the report itself is expected to increase the level of engagement and serve as a base for further discussion with stakeholders.

3. Approach

Given that social systems are subject to continuous change, stakeholder analysis is **an iterative process** that will evolve throughout the stages of the MUSES project, rather than a one-off isolated analytical step. An iterative process was used to compile the stakeholder lists and formulate typologies. Stakeholder analysis is conducted in parallel with MU barrier/driver identification and evaluation. As new information is gained (purposefully or opportunistically), stakeholder information will be updated and revised, with an intention to deepen the analysis[2].

The MUSES project has chosen to take a **participatory approach** to stakeholder analysis[3]. Namely, in this project stakeholders have an active role in the analysis, providing the information about their values, aspirations and interests, as well as practical details about how they can/want to support multi-use. The findings that come out of the desktop phase of stakeholder analysis will be verified and revised through various participatory methods including interviews, webinars and workshops.

[2] Varvasovszky and Brugha (2000)
[3] Allen &Kilvington (2001), Harding (2002), and Jennings &Lockie (2002)

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For the MUSES stakeholder analysis, the scale of inquiry (breadth) was primarily focused on identifying **national and sea basin level stakeholders**, however, there are a multitude of stakeholders whose interests are focused at a state, regional and/or local level.

This task capitalizes on work (desk research and interviews) being done under WP2 and WP3, integrating it where necessary with additional desk research, and focusing the analysis on Action Plan needs.

3.1 Deciding on relevant stakeholders

In one way or another anyone can influence or be influenced by a multi-use development. In order to identify those that do have, or could have a specific relationship with a multi-use development, five broad categories of stakeholder legitimacy in the context of multi-use have been identified: legal, economic, political, scientific, and social. The legitimacies are stakeholder's legitimate relationships with the multi-use. Their legitimacies make them relevant to be considered as a stakeholder. More specifically, these five categorisations answers the question – what type of relationship the stakeholder has with the MU and why it is so important to be involved as a stakeholder in the context of the MU development. It is relevant to note that **certain stakeholders can have multiple legitimacies**, each potentially of different intensity. For example, a classification body might be relevant from the legal perspective (legally legitimate stakeholder), but also from the economic (economically legitimate stakeholder) and scientific perspective (scientifically legitimate stakeholder) in certain MU projects. In some cases, economically strong stakeholders will also have a political legitimacy due to their ability to influence political decisions. These stakeholders, however, are not necessarily politicians themselves, but rather economically strong commercial enterprises.

Definitions of the categories of stakeholder legitimacy in the context of the MUSES project are the following:

Legally legitimate stakeholders are those who have the power to grant or restrict the legal right for the MU development. These stakeholders include local/regional, national authorities dealing with licensing and permitting, maritime spatial planning, nature conservation, etc. These stakeholders are usually interconnected within one country and hierarchically organized. Therefore, strength of legal legitimacy might vary between these stakeholders. This legitimacy often comes hand in hand with political legitimacy, as these two are usually interlinked.

Economically legitimate stakeholders are those whose legitimacy is derived from their relative economic power. Usually, the large commercial enterprises that play an important role in the national or regional economy (e.g. large energy corporations), that are or could be involved in development of certain MU, are considered as economically legitimate. However, various funding bodies relevant in the MU context, either funding the MU research, pilots or commercial scale developments are also considered economically legitimate stakeholders.

Politically legitimate stakeholders are those with ability of influencing political decisions. These stakeholders might be either groups of people or groups with particular interests who in general are well connected to the political power, or they themselves could become politically powerful. These stakeholders have the potential to represent an issue that rises to the top of the political agenda.

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Scientifically legitimate stakeholders are research institutes and associations, universities, research groups or other groupings with significant knowledge of the certain type of multi-use.

Socially legitimate stakeholders are those whose legitimacy in the context of MU is based on the strength of their network. These stakeholders are those well connected with other stakeholders of relevance and hence, have the power to influence those in their network. On the national or regional level these could be various networks and business clusters, while on the local level those could be associations involved with society at large. Media could also fall into this group.

4. Definition of stakeholder themes and categories

Analysis of stakeholder themes per categories, as detailed below, has been carried out on the combinations identified in WP2 at country levels. Each chapter presents one MU combination. The overview of chapters presenting MU combinations and relevance of each of the MU combinations in the EU sea basins and countries is presented in the Table 1.

Table 1. Relevance of MU combinations in the EU sea basins and countries

	Eastern Atlantic	North Sea	Mediterranean	Baltic Sea	Black Sea
chapter 7.1	Aquaculture and Renewables (general)				
	PT	/	/	/	/
chapter 7.2	Aquaculture and Offshore wind				
	UK, ES	DE, NL, BE, DK	FR, GR, IT	DK, PL, DE, SE	/
chapter 7.3	Aquaculture and Wave				
	IE, UK	/	MT	DK	/
chapter 8	Shipping terminal (port) and OW				
	/	UK	/	/	/
chapter 9	Tide and Wave				
	UK	UK	/	/	/
chapter 10	Tidal energy development and Environmental protection and Monitoring (Case Study)				
	/	UK	/	/	/
chapter 11	OW and Wave				
	IE	/	/	/	/
chapter 12	OW and Tourism				
	/	UK	/	DE, SE	/
chapter 13	Aquaculture and Environmental protection				

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	IE, FR, ES	BE, DK	MT, IT, GR, FR, ES, SI	LV	/
chapter 14	Underwater cultural heritage (UCH)and Tourism (and Environmental protection)				
	PT, ES	/	SI, CY, ES	DK, DE, EE, LT, FI	RO
chapter 15	Aquaculture and Tourism				
	PT	/	SI, HR, IT	/	/
chapter 16	OW and Environmental protection				
	FR	/	FR, IT	SE	/
chapter 17	OW and Fisheries				
	/	DE, NL	/	/	/
chapter 18	Fisheries and Tourism &(Environmental protection)				
	FR	/	HR, GR, MT, SI, IT, CY	/	BG, RO
chapter 19	O&G and Tourism and Aquaculture				
	/	/	IT	/	/
chapter 20	O&G and Renewables				
	/	/	IT	/	/
chapter 21	Fisheries and Environmental Protection				
	/	/	/	/	BG, RO

For each of the stakeholder themes elaboration is provided per each of the stakeholder categories. However, not all stakeholder themes and categories are identified to be relevant in each country and combination. As some countries have over 10 MU combinations examined, the most feasible approach was to include only the three most important combinations and accordingly the most relevant stakeholder themes and categories. This has also maintained a consistency with the approach taken in the analysis of MU drivers, barrier, added values and negative impacts under the WP2.

The tables, sheets and diagrams related to the stakeholder analysis from the MUSES WP2 Analytical Framework[4] have been considered and used to formulate the structure for the Stakeholder Profiles.

Seven stakeholder themes have been identified that refer to all the relevant sectors involved in the multi-use combinations explored in this project. An eighth theme is also provided for 'Cross sector', which refers to stakeholders that do not fall under any specific maritime sector.

Stakeholder Themes - The seven stakeholder **themes with their possible sub themes** are as follows:

[4]MUSES Analytical Framework is available at: https://muses-project.eu/muses/wp-content/uploads/sites/70/2017/06/MUSES-AF-Version-10_22.pdf

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1. **Aquaculture**: fish, and/or mussels, and/or seaweed;
2. **Fishing**: all types
3. **Energy**: wind, and/or wave, and/or conventional sources;
4. **Tourism**: diving, and/or boat tours to OW or aquaculture sites, and/or recreational fishing tours;
5. **Underwater Cultural Heritage (UCH)**: always refers to organisation engaged with formal protection of the ship wrecks and other cultural artefacts (e.g. authority), and/or informal organisation dealing with the maintenance/preservation of the site (local organisation of enthusiasts cleaning/maintaining the site and raising awareness about the site);
6. **Environmental Protection**: Marine Protected Area (MPA), and/or research station, and/or other;
7. **Transport**: shipping, and/or ports;
8. **Cross sector**[5]**:** stakeholders such as cross-sectoral maritime authorities, and/or maritime intermediaries (i.e. councils or clusters) that do not fall under any specific maritime sector.

Stakeholder Categories - Seven general categories, that partially reflect some broader societal structures that are applicable to identifying stakeholders in many different contexts, have been defined:

- **Commercial Business**

Defined as an organisation deriving commercial value from the maritime use, in one or more activities of the value chain of the certain maritime industry sector. These could be, for example, a producer, operator, commercial, etc. depending on the maritime use considered.

- **Business support – consultancies**

Organisations providing consulting services in either policy, research, management, communications, engineering or any other area.

- **Research organisations**

Research organisations, be it private or public, are universities, research institutes, and or research consultancies. There may be a thin line between consultancy and research, and potentially regulator and research, as some regulatory bodies are involved in research projects themselves. However, in these cases, the major legitimacy of a regulator as a stakeholder is in regulating, hence these should be considered under the 'regulator' category. Only Universities, research institutes or strictly research consultancies are predominantly engaged in research as their main activity and source of income, and therefore should be considered under 'research organisation' category.

- **Regulators**

Regulator is implementing the policy by enforcing regulations that are administrative in their nature. These regulations are the rules that are made to make people/organisations comply and behave in a

[5] These include cross-sectoral authorities (such as MSP authorities), consultancies, or regional cross sectoral policy makers and advisors. However, in the context of this project under 'cross-sector' we are also considering those stakeholders that belong to any other sector that is not one of the previously listed. For example, an MSP authority that is actually under Ministry of Economy, will be classified as cross sector, given the cross sectoral nature of the MSP.

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certain manner in line with policy objectives. For example, regulators are public authorities such as licensing bodies, port authorities, etc. In fact, regulators possess only those powers specifically delegated to them by the Policy maker –usually the government[6].

- **Policy makers**

The policy maker decides what the regulations should be and passes the laws implementing the regulations. In comparison to regulations, policies are general in nature. Both policy makers and regulators make policy. The distinction is that policy makers define the fundamentals and define the parameters within which policy making is delegated to regulators. It is more useful to think, not in terms of policy making versus regulation, but, rather, as macro policy versus micro policy. Basic and macro-policy must be set by the government. Regulators must follow and enforce policies articulated by the government.

- **Classification societies**

These are the organisations that establish and maintain technical standards for the construction and operation of ships and other offshore structures. Classification societies are also responsible for the validation of construction in accordance with these standards and carry out regular surveys to ensure compliance with the standards.

- **Insurance companies**

An organisation that provides coverage, in the form of compensation resulting from loss, damages, injury, treatment or hardship in exchange for premium payments. The insurance company calculates the risk of occurrence then determines the cost to replace (pay for) the loss to determine the premium amount. Insurance companies are usually relevant stakeholder in the context of offshore wind energy, oil and gas and aquaculture.

- **Funding bodies**

These include EU and national/regional funding programmes, private and public funding institutions (e.g. Green Investment Bank)

- **Intermediaries**

Sectoral or cross-sectoral clusters and associations.

- **NGOs and other intermediaries representing society at large[7]**

Environmental Non-Governmental Organisations (NGOs), citizen associations, community movements, etc.

[6] Ashley C. Brown. 2013. REGULATORS, POLICY MAKERS, AND THE MAKING OF POLICY

[7] Despite the fact that this category represents a broader definition, in the furfure text, for the sake of readability, it will be referred to only as NGOs

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5. Definition of attributes

Elaboration on the following six attributes is provided for all combinations of themes and categories on the national level relevant for MU combinations. The attributes are meant to provide better understanding of stakeholder structures for each of the MU combinations. Attributes are as follows:

1. **Overall activity of stakeholders in relation to MU development;**
2. **Overall attitude towards MU;**
3. **Geographical scale at which certain stakeholder has the power;**
4. **Type and level of power;**
5. **Organisation of stakeholders (i.e. clustered, dispersed, monopoly, etc.);**
6. **Stakeholder network analysis.**

Generally, themes covered under one MU will be two sectors and a cross sector. For example, for the MU combination aquaculture and offshore wind energy, relevant themes will be: Aquaculture (with specified sub-theme where relevant: mussel and/or Fish and/or seaweed), Energy (with specified sub-theme where relevant) and Cross-sector.

Sub-categories are also defined where relevant – e.g. for category aquaculture commercial business, sub-category will be producer, operator, commercial, etc.

Overall activity and attitude of relevant stakeholders in relation to the MU:

In regard to activity, those involved in past and ongoing MU projects (incl. MUSES project) as partners and advisory board members are classified as *pro-active*. In some cases, where MU is already implemented, proactive are considered all those who might have been involved in facilitation of the given MU development. Those who attended the workshops and/or interviews are classified as *reactive*, and those who were invited but did not show up or did not respond are classified as *dormant.* The intention is to explain which are the major stakeholder categories per country that have been active, reactive and dormant, in the context of the given MU.

Elaboration on stakeholder's attitude is in general as a result of interviewee mapping, the on-going interview results and literature review. This attribute answers the question: who are the stakeholders behind identified drivers and barriers. Is their attitude towards given MU positive, negative, neutral or perhaps they are still undecided. Also, highlighted are those that are deemed as relevant but we are still not aware of their attitudes.

For each MU combination, the overall activity and attitude are elaborated together under the same subchapter named *Overall activity and attitude of relevant stakeholders in relation to the MU*. For each MU combination, the Venn diagrams are produced to summarise and visually present relevant categories of stakeholders (per each of the relevant themes) and their overall attitude and activity in relation to the given MU. The diagrams are based on the analysis of data collected in the structured way in the Microsoft Excel, and visualised using the **Concept Draw PRO 11** software[8]. The overview is provided for each of the countries where the given MU is relevant. One figure is produced for each of the sea basins with the map of sea basin making the base layer for the Venn diagrams. The

[8]The Concept Draw PRO11 software is available at: http://www.conceptdraw.com/products/drawing-tool/

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location of each diagram is approximately corresponding to the country it was made for. However, names of the countries are clearly marked for easier reading. The common legend for all Venn diagrams is provided in the annex 1.

Geographical scale at which certain stakeholder has the power:

Elaboration on this attribute answers the question: is identified stakeholder operating on the local level (i.e. local aquaculture businesses), national, basin level or EU level. For example, are relevant regulators practicing their authority on a local level (i.e. federal states or municipalities) and/or national?

Type and level of power:

Elaboration on this attribute is based on the interview question: what is the relation between the identified actor and a barrier/driver? Text reflects understanding on what is the power of the actor in relation to the certain barrier or driver. This could be power to control and make decisions (i.e. regulators), or power to influence a barrier directly or via someone. The judgement of the level of power sums up the overall understanding gained through desk research, and input collected from stakeholders including the workshops and interviews.

Organisation of stakeholders:

The elaboration of this attribute builds on the interviewee mapping process and answers the questions such as – is there a lot of stakeholder (e.g. commercial businesses) in a certain sector relevant to MU development, are organisations well clustered through established networks, clusters and associations, or is there one large corporation as an obvious major representative of the given sector.

Sea basin stakeholder network analysis:

The Stakeholder Network Analysis[9] method was employed to examine the structure of the stakeholder network for each of the relevant MU combinations, taking into consideration all European Sea Basins. The analysis was based on the literature review and expert knowledge on relationships among stakeholders involved in the different MU combinations. The aim of the analysis was to identify central actors that are trusted and may enhance communication for development of the MU in the relevant Sea Basin. The analysis presents an attempt to identify key stakeholders and reveal information on who is important to hold the network together and promote the MU development initiative on the Sea Basin level, and likewise enhance development of the MU concept on the national level. The pool of stakeholders used for the SNA for all sea basins apart from the Black Sea, considered the sea basin level actors rather than national.

The results of the stakeholder network analysis illustrate how Stakeholder Analysis and Social Network Analysis (SNA) can be used in order to identify key stakeholders related to the same MU.

[9]Lazic, M., Markantonatou, V., *Social Network Analysis serving transboundary MSP. The Case of the Central Adriatic Sea*, 2017

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Institutions in the central position of the network can promote engagement[10] using the relationships already created and promote MU development.

Central actors were identified by analysing demography of the network:

(1) Degree centrality[11] – number of ties that an actor (stakeholder) has, visualised with the size of the node (shape);

(2) Distance[9]among actors - how actors are embedded within the network, visualised with the distance from other stakeholders in the network.

Position and power analysis were conducted using multi-relational data matrix, analysed using **UCINET**[12]software to run a SNA. From the **NetDraw**[13] software expected product is visualization of the network of identified stakeholders through a map, which shows structure of the network.

6. Limitations

This chapter is meant to list some of the difficulties and limitations which research team has encountered during the stakeholder analysis process and the preparation of this report. One of the first difficulties, in some cases, was **to distinguish between different stakeholder categories.** For instance in the UK, certain stakeholders can fall both in the regulator and commercial enterprise categories. The accuracy and consistency of the approaches taken vary, as they directly correlate to the special policy framework of a given country and the subjective judgement of the authors. For the UK example for instance, the highest level / degree of power was selected to place a stakeholder to an appropriate category but this was not the case in all countries.

For the elaboration of the first attribute; overall activity of stakeholders, a precompiled inventory (excel sheet) with over 600 stakeholders, involved in past or on-going MU projects has been used as a base. The **approach taken to analyse and elaborate on the first attribute might therefore, differentiate from the approach taken to analyse other attributes**, where the main source of information relied on desk research and interview results. Hence, for the better consistency, first two attributes 'activity and attitude' have been described together in the report.

The **results of the analysis are preliminary** and are to be revised together with stakeholders during the MUSES Action Plan engagement process. The results are expected to provide a good base for discussion during the workshops and webinars, anticipated to take place in the second half of the project.

It is important to acknowledge that the extensive knowledge of social systems in a given country is needed in order to conduct an in-depth analysis of each of the stakeholder attributes. In some cases, having this in-depth analysis was a particular challenge given the wide scope of this analysis, both in

[10]Markantonatou, V., Meidinger, M., Sano, M., OIkonomou, E., Di Carlo, G., Palma,M., Ponti, M., Cerrano, C. 2013. Stakeholder Technology .
[11]Prell, C. 2012. Social Network Analysis. History, theory and Methodology.
[12]Borgatti S.P., Everett M.G. and Freeman L.C. 2002. Ucinet 6 for Windows: Software for Social Network Analysis. [Report].
[13]Borgatti SP 2002. Netdraw Network Visualization/ Analytic Technologies, Harvard, MA [Book].

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terms of content (17 MU combinations), and geographical scope (all coastal EU countries). Therefore, this report also **highlights important knowledge gaps** which should be filled in the next steps of the project.

7. AQUACULTURE AND RENEWABLES

7.1. AQUACULTURE AND RENEWABLES (General)

Table 2. Relevance of the aquaculture and renewables MU combination in the EU sea basins/countries

Aquaculture and Renewables	
Sea basin	Eastern Atlantic
Country	PT

7.1.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In **Portugal**, aquaculture companies' attitude towards MU is not clear because stakeholders did not respond to the invitation. However, both the private non-profit association created to develop offshore renewable energy in the country, and the forum for the development of the sea economy, are driving forces for the development of the MU Aquaculture and Renewables. Additionally, the regulator of the maritime activities also has a positive attitude (although issues related to the regulation were mentioned many times as barriers for this MU). The public funding body responsible for the promotion of maritime economy in Portugal was just created in 2017 and no responsible/director is accepting contacts yet. However, this is a stakeholder that needs to be targeted in the near future. In Portugal, insurance companies for maritime activities are mainly involved in shipping, yachting, fisheries and harbours, despite international insurance groups having strong presence in the country. NGOs specific for maritime issues are recent and often lead by international groups. The most representative national one was born from a stakeholder engagement process of fishers into a MPA management plan.

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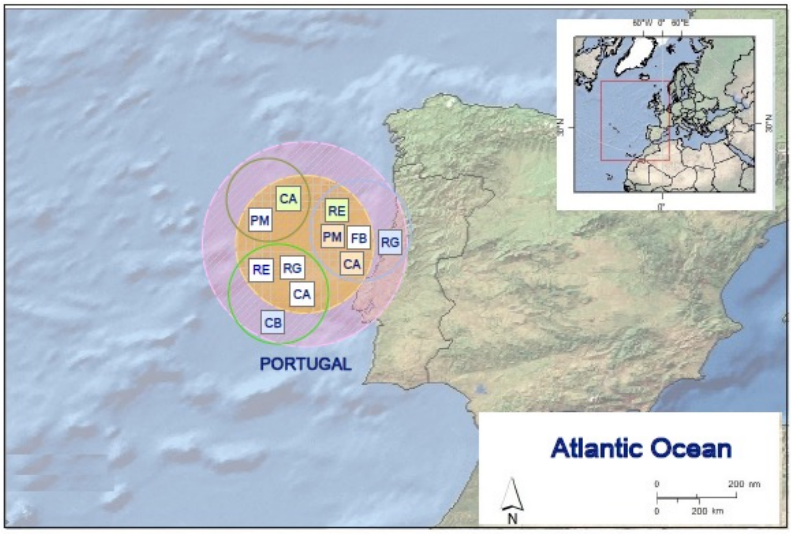

Picture 1. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Renewables MU in the Eastern Atlantic ***(the legend for all visuals is provided in the Annex 1)***

7.1.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

In **Portugal**, the company contacted that represents the aquaculture sector is relevant at a European scale, although there are other national companies with different geographical scale, national or even local. The renewable energy association has mainly a national geographical scope, such as the policy maker, regulator, funding body and other associations.

7.1.3. Type and level of power

Eastern Atlantic

Since the aquaculture association in **Portugal** has not shown much interest on offshore aquaculture, it is not easy to identify stakeholders of this sector who could influence the others. In addition, the association for renewables is also composed by public organizations, representing an easier way to spread the idea of the MU Aquaculture and Renewable Energy. Both sectors share the same policy maker and regulator with the power to control and make decisions, what could also facilitate overcoming the barriers. The companies and the research centres have the power to influence indirectly because they can show successful examples, but they need strong associations in each sector to directly influence the decision makers. In **Portugal**, only the public institutions have strong or medium power and the energy sector seems to be more powerful than the offshore aquaculture sector.

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7.2. AQUACULTURE AND OFFSHORE WIND

Table 3. Relevance of the aquaculture and offshore wind MU combination in the EU sea basins/countries

Offshore Wind and Aquaculture													
Sea basin	Eastern Atlantic		Mediterranean			North Sea				Baltic Sea			
Country	UK	ES	GR	IT	FR	BE	NL	DE	DK	DK	DE	PL	SE

7.2.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In **Spain**[14] this MU combination does not exist (there is no offshore wind energy installed) but was mentioned as a potential to be developed (as aquaculture is a mature use as well as terrestrial wind energy). In general, all the stakeholders have positive attitude towards it. The energy association is neutral because it did not finish the stakeholder engagement phase. The Aquaculture Association and the Energy producers are strongly supporting the future development of this MU. Some research centres also promoted site location studies for this MU. OW policy-makers are considered undecided. Although regulation has been created for licensing, such as the Royal Decree 1028/2007 establishing administrative procedures to license applications to authorise electrical generation installations in the Territorial Sea, barriers at the administrative and policy level make this activity not to be developed at sea.

In **the UK Atlantic**, for the majority of stakeholders overall attitude towards MU is 'positive', as it appears from past implementations of the particular MU (e.g. trials for shellfish aquaculture within North Hoyle OWF, Wales); engagement in marine renewable and aquaculture projects; and feedback from interviews. Certain NGOs/society representatives have expressed concerns about some marine renewable developments for instance the RSPB for OWF development within Liverpool Bay SPA, but this situation ultimately led to improved planning and communication among stakeholders (attitude towards MU: 'negative-but can positively influence barriers').Aquaculture certification societies (e.g. MSC) might require a thorough assessment that could slow down a project, but would result in its better integration ('negative – positively influence barriers').

[14]The same pool of stakeholders has been identified as relevant in both, Atlantic and Mediterranean Sea.

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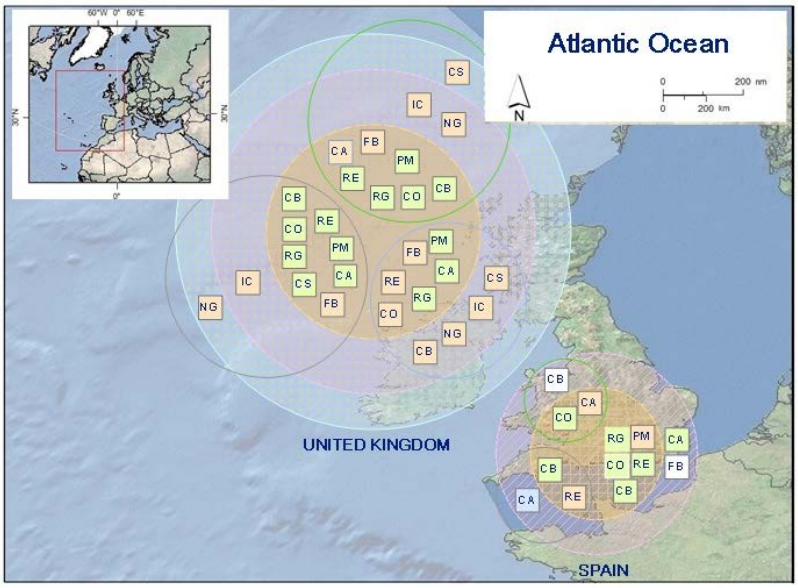

Picture 2. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Offshore wind in the Eastern Atlantic

Mediterranean Sea basin

In **Greece,** categories of stakeholders in the aquaculture field are intermediaries, policy makers, research organisations and commercial businesses. Strong clustered intermediaries, with medium power to influence directly, are considered to be dormant. The policy makers and researchers with are reactive with neutral to positive attitude towards the MU. Finally no clear picture exists about the commercial business initially engaged at the first MUSES workshop in Poole since there is no further input from them in the later stages of the project. The stakeholder categories in the field of offshore wind are commercial business, business support or consultancies, research organisations and policy makers. It is interesting to see that the interest to the MU varies within each category. However the overall impression is that positive driving forces are reflected by the position of the commercial business, consultancies and research organisations, while policy makers seem neutral. The cross-sectoral stakeholders for this MU are policy makers and classification societies. The first have a positive attitude but with medium direct power to influence the development the MU while the second have a negative attitude but can positively indirectly influence the MU.

In **Italy** this MU has not been explored yet (there are actually no offshore wind plants in Italy and the first plant is planned next year). Anyway, on the basis of desk analysis and interviews with local stakeholders, we can assume that the key actors identified for this MU can have in general a positive attitude due to the increasing demand for seafood, as well as the interest in renewable energy. This MU can indeed provide additional income opportunities, new specialized/skilled job profiles (combining offshore wind and aquaculture activities). Commercial business operators and consultancies societies on the offshore wind topic, are considered to have a positive attitude, favouring the permitting process and promoting acceptance by local administrations and local

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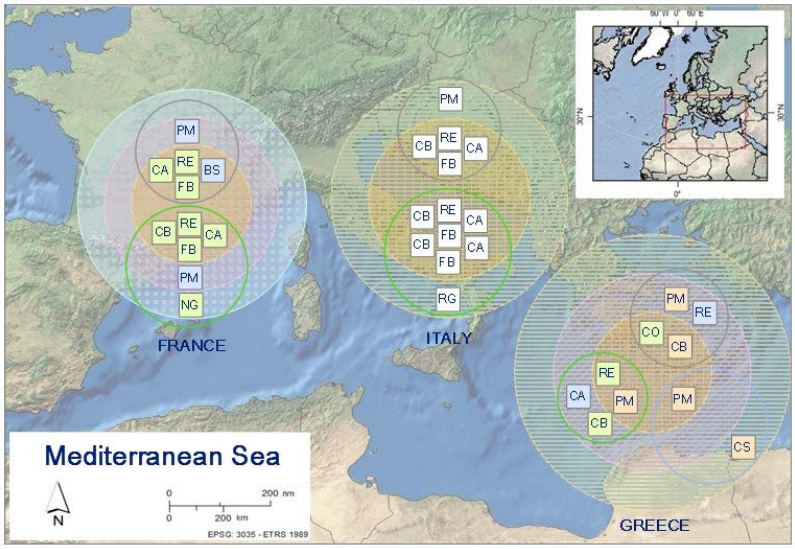
communities, and therefore valorise their consultancy. Research organizations are considered to positively benefit from this MU development, since it implies the research in novel areas: new technologies, siting of new areas suitable for the development of the MU, considering both wind and mussels farms suitability areas, multi-use platforms. Interviews with local stakeholders underline that regulators have in general a negative attitude, imposing barriers and blocking permissions. Also they can be slowed down by the absence of a clear/smart regulation in terms of implementation and monitoring. Policy makers are considered to have a neutral attitude, depending on the possibility that MU makes new plants more sustainable and interesting from a socio-economical point of view. Funding bodies (through EU programs, such as H2020, European Structural and Investment Funds, European Fund for Strategic Investments, Europe's Programme for SMEs and the European Fisheries Fund) act positively, providing financial support for the development of this MU although their awareness of MU is poor. There are finally Wind Energy Associations, which are considered to act positively, doing lobbing at different scale with different stakeholders profiles.



Picture 3. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Offshore wind in the Mediterranean Sea Basin[15]

North Sea basin

There is no offshore aquaculture industry active in the **German North Sea** EEZ as of yet. The strong interest in the offshore aquaculture sector in Germany and the large abundance of research data from past and current project are primarily based on the work of key research institutions. These have been very pro-active in promoting the concept. Stakeholders further up in the value chain are also interested in the idea in order to get a local sustainable product for their markets. The offshore wind industry as a whole has a low interest in multi-use of any kind unless there are clear added values and no risks involved. Certain key companies and associations however are interested in multi-use as a future use concept and have been partners in past research projects. Regulatory

[15]The Mediterranean map presents the structure of stakeholders in Spain, jointly for Atlantic and for Mediterranean Sea.

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bodies are open to additional ocean uses like aquaculture as well as its connection with offshore wind energy as a multi-use. Regulators have been open to inquiries as well as project participation. While aquaculture clusters are many, their focus seems to be mainly on expansion of land aquaculture and RAS technology.

In **Denmark** aquaculture consultancies seem to be the most active in the context of this MU, even on the sea basin level. Their attitude is in general positive, but they point out to certain challenges and conditions needed for this MU to realise. The offshore wind industry sector is neutral, or rather not perceiving any clear benefits that this MU could bring to them. The general opinion is that clear risk assessment and cost benefit analysis would need to be performed in order to think about it any further. Without clear picture about risks and associated costs is difficult to judge. According to the offshore wind sector representative, this move would have to be initiated either from the aquaculture developer and regulator, enabling the feasible regulatory conditions. On the other hand, the aquaculture law that is on hold in Denmark at the moment (due to more information on environmental impacts being requested by the environmental NGOs and fishery association), seem to be the major concern of aquaculture business community.

There are some mussel and seaweed aquaculture companies in **the Netherlands**. Mussel seed is traditionally harvested in the Northern part of the Dutch North-Sea, (Wadden Zee) and grown in the Southern part (Oosterschelde). Dutch mussel farmers have shown no interests in multi-use as they are well-established in inshore waters and don't envisage becoming more active in the open sea. Nevertheless, they might become interested in expanding their activities in the future to harvest and grow mussels in the open sea, as environmental groups are increasingly criticizing the harvesting practice in the Waddenzee. Seaweed farmers in the Netherlands are mostly still small start-ups, who have not yet arrived at the business development stage to think about expanding the scope of their business to a multi-use construction. Both types of aquaculture farmers are positive to the idea of exploring multi-use opportunities and appear to be responsive and willing to partake in new initiative although they are not the initiators of such actions. Wageningen University is a research institute in the Netherlands actively engaged with researching on the concept of Multi-use. The university is participating in several multi-use projects and publishing papers on Multi-Use. The Dutch government Ministries of Infrastructure & environment and Economic Affairs have developed the North Sea "Gebiedsagenda 2050"; this is the policy outlook for the North Sea in 2050. One of the six priorities areas is Multi-Use. Policy makers are positive to the establishment of Multi-use and are currently engaging actively in research on multi-use and setting a policy agenda to stimulate it. Also regulation for passing through wind parks has currently changed and there is an on-going debate regarding the possibilities for passive fishing in wind parks.

There is no noteworthy aquaculture sector in **Belgium**. A big retailer is proactively supporting the multi-use of aquaculture in offshore wind parks. This enterprise envisions developing a niche high quality/local aquaculture product. As this retailer is also a shareholder of one of the major wind parks owners in the Belgium North Sea, it has been an active player for this multi-use on both sides.Belgium has three wind parks and has planned to develop two more. The owner of the existing parks*Parkwind, Northwind, and Belwind,* has been very active in multi-use with aquaculture with participating in the Aquavalue projects and its spin-offs. Ghent University is a research institute

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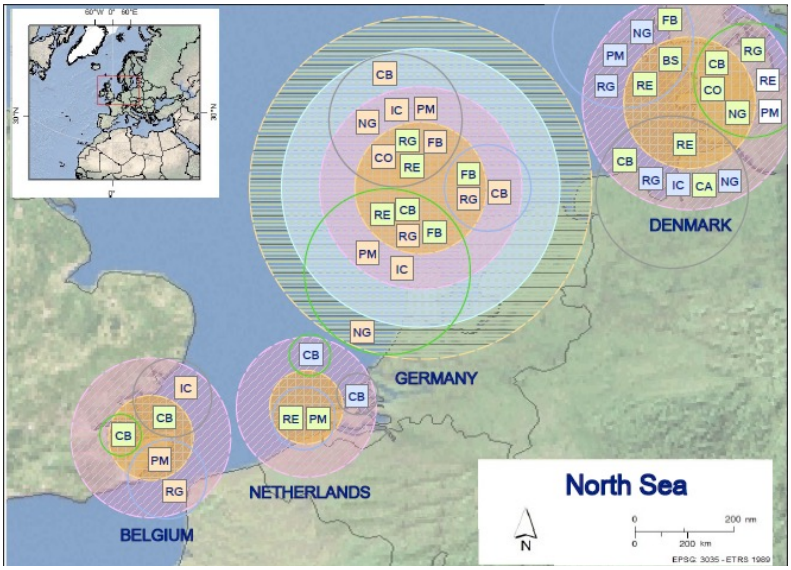
active engaged with Multi-use research in Belgium, especially with its specific expertise in aquaculture. Moreover, several companies and government departments are engaged in the "Blue Cluster", which works together on the spatial planning of the Belgium North Sea. The cluster does not specifically target multi-use, but stakeholders have named this as a prominent group to do research at the different levels: Academic, regulatory, and commercial/implementation. The Ghent University is pro-active in participating in several multi-use projects with several staff members and publishing a diversity of papers on Multi-Use.



Picture 4. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Offshore wind in the North Sea Basin

Baltic Sea Basin

The key research actors in the aquaculture community in **Germany** have a positive attitude towards multi-use and are acting as driving forces behind the development of this combination. The overall attitude of the offshore wind industry in regards to multi-use in any use combination is cautious. Under the German maritime spatial plan for the EEZ, they have priority rights over other users inside their assigned priority areas. These protect their construction, operation and maintenance activities from other users. Most stakeholders see no need to jeopardize the security these rights guarantee them. These opposed actors possess an absolute veto-right against all activities inside their priority areas and use it to impose barriers. Some key stakeholders in the industry however are open to alternative use concepts and have participated in past projects in order to identify the approaches. Regulatory bodies are open to additional ocean uses like aquaculture as well as its connection with offshore wind energy as a multi-use. Regulators have been open to inquiries as well as project participation.

In **Germany (Baltic Sea)** there is just one small-scale mussel farm producer. The producer is positive

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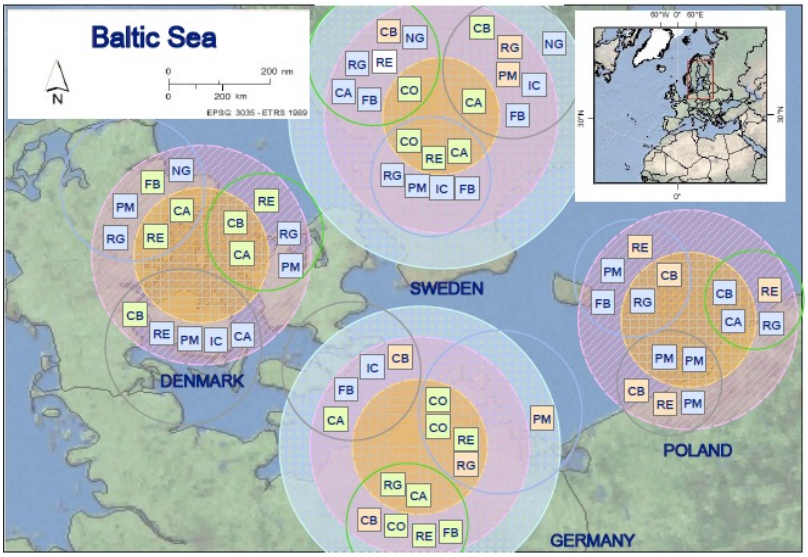
towards, and interested in MU, as well as in expansion of the mussels' production, and possible combination with fish farming. There are also three small-scale fish farm producers who seem not to have aims to expand, but rather to close/sell their business. There is also one fish aquaculture research pilot/testing facility, but MU has not been tested so far nor are there any such aspirations evident, for now. Local (federal state) authorities seem to be more open for this type of MU in comparison to those administering the EEZ, while the main concerns on both sides are the environmental impacts. So far, German research centers seem to be the most active in regard to this MU.

In **Denmark**, business community has also been involved in past MU project, but their attitude is still not clear, as there are no viable business cases yet being made. Likewise the North Sea basin, the aquaculture consultancies seem to be the most active in the context of this MU, even on the sea basin level.

In **Swedish** west coast, public opposition is a possible risk factor. The result of the survey carried out by Thomas et al. (2016), shows that people tend to be favorable towards aquaculture in general. However, fish aquaculture showed the most opposition. People with higher awareness are more supportive, hinting at the benefits of increasing awareness to reduce public aversion. The offshore wind sector is experiencing a financial challenge, which makes it difficult to expect any initiation of such MU development from their side. According to the majority of interviewees, the push would need to come from the policy and regulators side taking into consideration financial current challenges of the offshore wind sector and in general low power of the aquaculture sector to initiate such development, involving large capital investments and long term perspective.



Picture 5. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Offshore wind in the Baltic Sea Basin

7.2.2. Geographical scale at which certain stakeholder have the power

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Eastern Atlantic

In **the UK Atlantic** commercial businesses have close links with other locations (e.g. Ireland) and thus a 'sea-basin' scale of power. Energy business support and intermediaries (e.g. EMEC – European Marine Energy Centre) attract developers from all around the EU and have the 'EU' scale of power; for aquaculture business support (e.g. Scottish Aquaculture Innovation Centre, SAIC)and intermediaries, scale is more confined ('national' and 'local-regional' respectively). Research organisations have the scale of related projects (e.g. MUSES, MARIBE, AQUASPACE, etc.) (Sea-basin). For regulators and policy makers, scale of power is 'national' because that is their level of jurisdiction[16]. Funding bodies have 'EU' scale, because the majority of funds are provided at that level. For the MU NGOs/society representatives have a 'national' scale (e.g. RSPB). In **Spain** (Atlantic), all the stakeholders relevant for this MU combination are found to operate on the national level.

Mediterranean Sea

In **Italy** the stakeholders identified for this combination, have the power at all scales. Consultancies organizations in Italy (e.g. cooperatives and SMEs working supporting operators in developing offshore wind projects, etc.) work both at national and international scales. The newly constituted National Technological Cluster on Blue Growth, the research organizations and National Institute for Energy in Italy act both at national and international (mainly through EU projects) scale, except for the aquaculture sector, where they work also at local level (fishery cooperatives). Regulators act at local/regional scale (environmental impact assessment of offshore wind farms projects), while policy makers at the national level. Funding bodies (through EU programs, such as H2020, European Structural and Investment Funds, European Fund for Strategic Investments, Europe's Programme for SMEs and the European Fisheries Fund) mainly act both at EU level and national scale. In addition FLAGs implement a bottom-up participatory strategy addressing the stakeholder's economic, social and environmental needs at a local, national and international level. Wind Energy Associations, FLAGs, Aquaculture Associations, Trade unions on fishery sector in Italy act at all level, involving different stakeholders' profiles.

In **Greece** except for the commercial businesses that operate at a local/regional scale, the rest of the stakeholders involved with this MU (i.e. Classification societies, Intermediaries, Policy makers and research institute operate at the national level.

North Sea basin

In Germany, the identified key aquaculture stakeholders are associations and research institutions.

[16] National/sub-national definitions as they appear in the HM Government, 2011. UK Marine Policy Statement (See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf (Accessed: 17/10/2017)

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These operate on a national to international level. The individual members of associations from the commercial side however operate mostly on a regional and national level due their small scale of operations.The maritime economy in Germany is concentrated in the coastal regions and can be described as a cluster alliance with five integrated sub-clusters. The Metropolitan Region Hamburg sub-cluster, including Hamburg and the surrounding NUTS-3 regions of Schleswig-Holstein and Lower Saxony are considered particularly important. In Germany, the aquaculture sector is made up of a number of research institutions from public and private research institutions to universities as well as companies focusing on land-based pond or recirculation aquaculture systems (RAS). Most of these individual companies and institutions are members of a sector wide association, the Federal Aquaculture Association (BVAQ). This association acts as a voice for the interests of the German aquaculture sector as well as a competence cluster for its members. German offshore wind industry is dominated by a low number of mostly multi-national energy corporations. They jointly support multiple associations and lobby groups to advance their interests. Relevant cross-sector authorities for this multi-use combination operate on the regional to national level, as Germany has a federation governance system.

Geographical scope of aquaculture businesses in **the Netherlands** is national and local-regional. Wageningen University is seen as a (knowledge) authority both nationally as in the EU. On the other hand, in **Belgium**, the University of Ghent is seen as influential both nationally and in the EU. As multi-use is one of the three working groups for the Marine Spatial Plan and Belgium Vision 2050 development, policymakers are positive towards the concept of multi-use.

Baltic Sea basin

In **Sweden**, the local aquaculture businesses and regulators are relevant as the permission to set up an aquaculture site is given by the responsible state authorities, given that aquaculture normally takes place within 12 nautical miles from shore. The offshore wind commercial corporations, as well as consultancies and other intermediaries operate at the larger scale (national and sea basin).

In **Poland**, identified stakeholders from the OW sector are commercial businesses and research institutes that operate on the Sea Basin level, while increasing demand for the development of the Blue Economies - aquaculture, means that key stakeholders from the aquaculture sector are research organisations on the national and international level. Nevertheless, for the MU combination driving actors are national policy makers and regulators 'opening' the doors for MU in maritime spatial plan which is now being prepared.

7.2.3. Type and level of power

Eastern Atlantic

In the **UK Atlantic**, regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development (e.g. National and sub-national Marine

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Plans). Commercial businesses (investment capital/technology), business support (test facilities) and funding bodies have a 'power to influence directly' ('strong'); for aquaculture, funds are sectoral (e.g. EC EMFF) thus funders have a 'low' level of power. For offshore renewables, certain classification schemes are obligatory (Lloyds Registry) thus relevant societies have the 'power to control and make decisions' ('strong'). NGOS/society representatives have a 'power to influence directly' ('strong') since they have objected relevant developments in the past and could do so in the future. Research organisations have a 'power to influence indirectly' ('medium'), through project results and scientific publications. Intermediaries (e.g. Shellfish Association of Great Britain), although not statutory stakeholders, promote the development of the MU and thus have a 'power to influence directly' ('medium'). Cross sector classification societies (e.g. shipping) have a 'power to influence directly' (strong'). Cross sector NGOs/society representatives have a 'power to influence indirectly' ('medium) since they can potentially challenge developmental activities if the objectives are contrary to their own.

Mediterranean Sea

In **Italy,** commercial business operators and consultancies organizations on the offshore wind sector, as important economic operators in the energy sector, are assumed to influence administrations in promoting in different ways (legislation, permitting, incentives, etc.) offshore wind farms. As pointed out from interview with local stakeholders, whenever a prototype is build, they can have more power to influence directly the policy. All the actors of the seafood market chain have strong power, since they provide the knowledge of the resource and they represent the key actors in the fishery chain for the national economic income. Consultancies organizations working on fishery-aquaculture topic (e.g. National Federation of Fishing Companies, cooperatives and SMEs, etc.) are considered to have the power to influence directly fishery policy since are mainly local private stakeholders interested in receiving and income from this sector. We can consider that research organizations have medium power to influence directly regulations, as they can provide the knowledge on the resource and technologies, but cannot directly influence policy and investments on MU. They can support operators in developing prototypes and technologies; promoting the sector and MU in particular as part of a wider strategy for R&I for blue growth; they are also advisors of ministers and licensing authorities. Regulators and policy makers have strong power controlling and making decisions. Funding bodies are considered to have strong power too to influence directly policies, since they are the funding bodies, and fund/co-fund projects and initiatives. Finally Wind Energy Associations are considered to have medium power: they act at different level and type of stakeholder profiles. They can have a stronger power concerning their influence to the issue of permission. Concerning the specific aquaculture sector, FLAGs, Aquaculture Associations and Trade unions, are assumed to have a strong power to influence directly the policy and the funding programs, acting at different level and type of stakeholder profiles.

In **Greece,** consultancies and intermediaries are organised in strong clustering with medium power to directly influence the development of this MU. Medium to strong power to influence directly or to make decisions lies on policy makers and research institute while classification societies exhibit low indirect power.

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North Sea basin

In **Germany**[17], the Universities in the Schleswig-Holstein region are well connected through Centre of Excellence of Biomass in Schleswig-Holstein, focused on enhancing collaboration between the economy, science and politics. The Association for Marine Aquaculture (GMA) Ltd. together with the Aquaculture Competence Center (Schleswig-Holstein) represents the strongest network with members that include business development consultancies and university research institutes. GEOMAR | Helmholtz Centre for Ocean Research Kiel seems particularly well connected, as it is a member in a large number of associations relevant to both the aquaculture and blue economy in general. According to most of the interviews in Germany, regulators have the crucial role in moving forward the development of MU, as overcoming current barriers depends on them. Other relevant categories are insurance companies as well as funding bodies, given the lack of pilots, risk assessment and financing and business models. The EU has put sustainable aquaculture on its agenda and has allocated funds through the European Maritime and Fisheries Policy (EMFF), which in turn belong to the EU Common Fisheries Policy. The EMFF seeks to promote innovative aquaculture with high growth potential such as offshore, non-food aquaculture (such as mussels for feed) and multifunctional aquaculture. It supports projects by granting subsidies or investments for equipment (boats, engine, and gear), human resources (health, safety, and training) or collective projects (innovation advisory services, partnership between researchers and fishermen). Each country receives funding from the EMFF based on the size of its fisheries sector. Out of the €284.6 million German investment package (€ 219.6 EU funded), 30% was allocated to support aqua-environmental measures and investments in innovative aquaculture[18].

In Germany, the only power key actors from the research sector can exert, is to influence decision makers. This is achieved by providing a scientifically solid advice based on past and present research projects and communicating it the key decision makers. On the other hand, the offshore wind industry has a larger influencing power than the second user, aquaculture in this case, due to their larger operations. The lead corporations are multi-national companies operating sea basin or EU wide and providing thousands of high paid jobs in the technology sector. Further, in German waters offshore wind farm developers have special absolute rights within their assigned priority areas over other uses and users. German cross-sector authorities have direct power to control and make decisions within their mandated purview. They are immediately responsible to apply regulations and manage their jurisdiction accordingly. Apart from that they have the power to directly influence the decision making process. The key aquaculture stakeholder's power to influence can be rated as low since there is no current large commercial body backing their interest progress. The offshore wind industry in Germany has a larger influencing power than the second user, aquaculture in this case, due to their larger operations. The lead corporations are multi-national companies operating sea basin or EU wide and providing thousands of high paid jobs in the technology sector. The power of the cross-sector authorities is strong as it is absolute within their mandated purview. They need to be included in any communication process regarding multi-use.

[17] Reffering to both, German North and Baltic Sea
[18] Rößner, Yvonne; Legislation Issues Status Report, Baltic Blue Growth, forthcoming; p 68

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In **the Netherlands**, Mussels & Seaweed companies both have the power to influence whether they want to be engaged in a MU or not. They do not, however, have the power to enforce this. Offshore wind businesses have power to directly influence but not directly control decisions as they are subjected to government regulation. The companies do, however, have strong lobby positions and the terms of their concessions to restrict or allow multi-use. Wageningen University has a strong role in developing the knowledge framework which policy makers and business use to assess multi-use projects. By initiating and enforcing restrictions or allowances to wind parks, policy makers are able to directly control their level of power is therefore considered to be strong. The national authorities have power in driving this MU further by giving permission to aquaculture activities at wind farm areas.

In **Belgium**, the national authorities have power in driving this MU further by giving permission to aquaculture activities at wind farm areas. Furthermore, the wind farm operators retain a level of power themselves by allowing aquaculture projects in their wind farm.

Baltic Sea basin

In **Sweden,** the national authorities as well as international funding bodies have a strong power in driving this MU combination further in Sweden. This is particularly eminent given the fact that the OW business community is currently struggling financially and new developments are hard to perceive in the near future[19], while any type of MU would imply even more funds and risk involved.

There are strong drivers for the aquaculture sector in **Poland** together with targets set for sustainable aquaculture and available funds for its development. Research organisations have a key role as they are active stakeholders, their power in decision making is rather medium with no direct influence to the decision making process. The highest powers for the MU combination rest with policy-making stakeholders, as they are immediately responsible for applying regulations and management measures.

7.2.4. Organisation of stakeholders

Mediterranean Sea

In **Italy** the Regions are local individual organizations/ administrative offices coordinated by the central public administrations. The policy makers are individual ministries (the Ministry of Economic Development, the Ministry of Infrastructure and Transport, the Ministry of Environment and Protection of Land and Sea and the Ministry of Agriculture, Food and Forestry Policies), which act under the coordination of the Presidency of the Council of Ministers. In general commercial business organizations, societies providing consultancies on the offshore wind and aquaculture topics, research institutions, NGOs can be all considered individual organizations, acting at different level

[19] Foyen. 2017. Available at: http://www.foyen.se/orimlig-nyttobedomning-hindrar-havsbaserad-vindkraft/

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and with several coordination mechanisms (e.g. Ministry for University and Research, Consortia of Universities, National Research Council). Some engineering companies and professionals are also well organized in Associations playing a relevant role with a strong clustering organization. Among the aquaculture commercial business actors, there are a strong group of aquaculture associations/individual aquaculture organizations, which can carry out important lobbying actions. Also FLAGs and the newly constituted National Technological Cluster on Blue Growth are strong clustering organizations well locally assembled. Funding bodies are individual organizations, which refer to policies and strategies, approved at higher level.

7.3. AQUACULTURE AND WAVE ENERGY GENERATION

Table 4. Relevance of the aquaculture and wave energy MU combination in the EU sea basins/countries

Aquaculture and Wave				
Sea basin	Eastern Atlantic		Mediterranean	Baltic Sea
Country	UK	IE	MT	DK

7.3.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In the **UK Atlantic,** for the majority of stakeholders overall attitude towards MU is 'positive', as it appears from investments in the particular MU (e.g. Mingary Bay, W Scotland); engagement in marine renewable and aquaculture projects; and feedback from interviews. Certain NGOs/society representatives have expressed concerns about some marine renewable developments in the past but their engagement ultimately led to improved planning and communication among stakeholders (attitude towards MU: 'negative-but can positively influence barriers'). Aquaculture certification societies (e.g. MSC) might require a thorough assessment that could slow down a project, but would result in its better integration ('negative – positively influence barriers').For cross-sector, overall attitude is 'negative - imposing barriers' as they (fishers, farmers) have objected in the past the development of the specific MU.

In **Ireland**, for the majority of stakeholders overall attitude towards MU is 'positive', as it appears from investments in other locations in the NE Atlantic (W Scotland); engagement in marine renewable and aquaculture projects; and feedback from interviews. Certain NGOs/society representatives (local communities), objected to marine renewable developments in the past, but their engagement ultimately led to improved planning (attitude towards MU: 'negative-but can positively influence barriers'). Aquaculture in the Republic of Ireland (RoI) is to a large degree certified as organic, thus relevant certification societies would have a 'positive' attitude to the MU.

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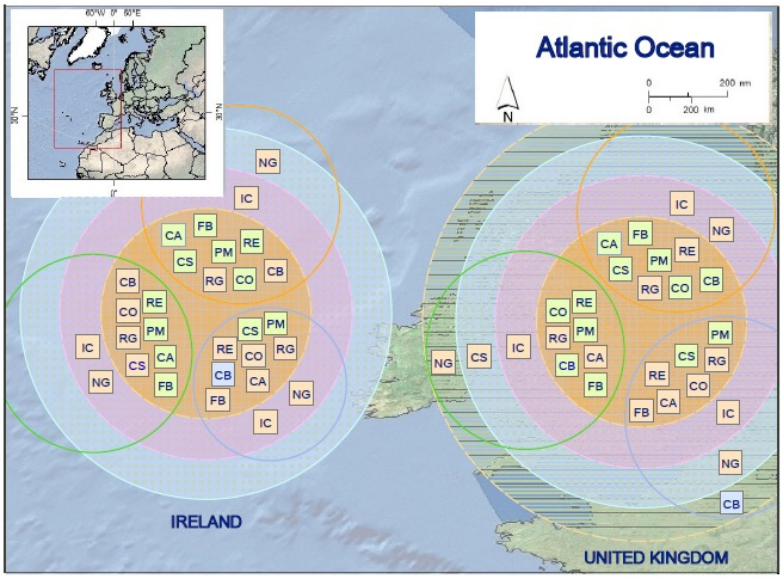

Picture 6. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Wave in the Eastern Atlantic

Mediterranean Sea

It should be pointed out that for **Malta** the process of stakeholder engagement is still on-going and therefore, the results presented herein should not be considered final. The overall impression is that there is a positive attitude towards this MU especially from the aquaculture policy makers and commercial businesses, the wave energy commercial businesses, and the Cross-sector research organisations and policy makers. This conclusion however may not be accurate since half of the stakeholders did not respond to interview invites from the project consortium.

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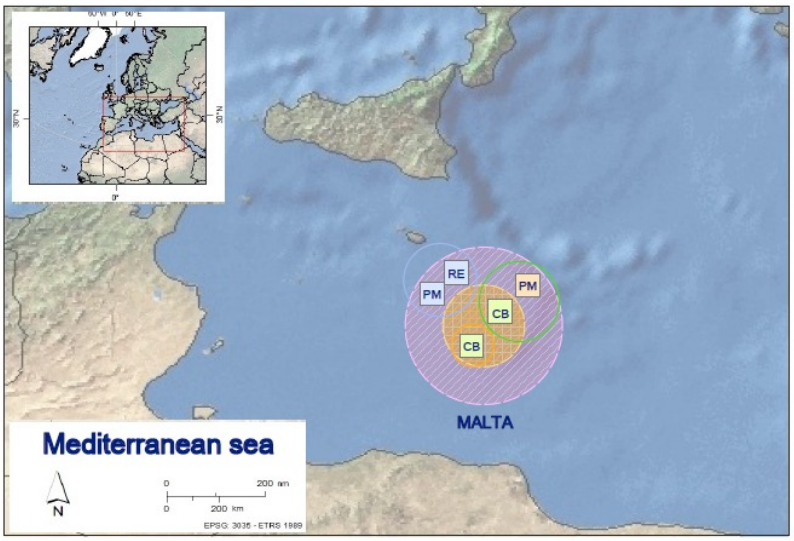
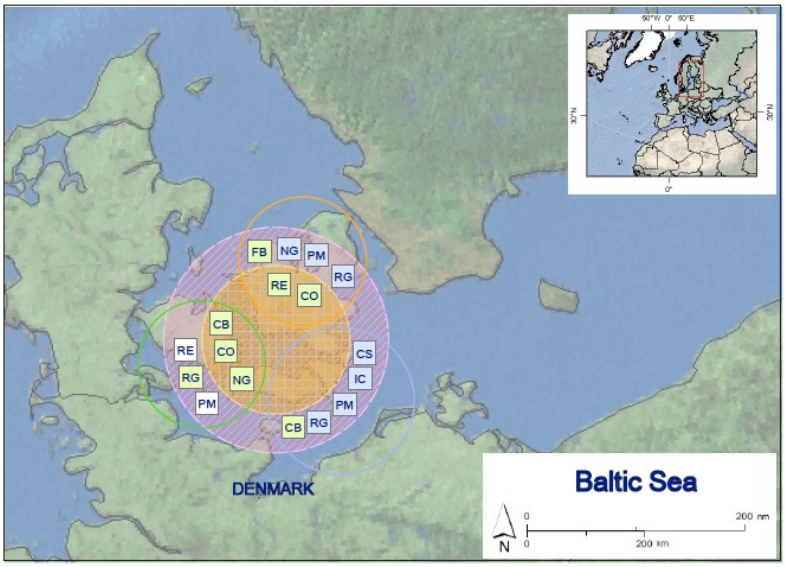


Picture 7. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Wave in the Mediterranean Sea Basin

Baltic Sea Basin

While a lot of research and testing has taken place in **Denmark** led by the research organisations, Danish Wave Test Centre and even commercial business, Danish market was never perceived as final destination for the commercial wave production. In terms of small-scale wave energy generation for the purpose of aquaculture operation, interest seems to be lacking from the side of the wave energy sector. On the other hand, the aquaculture (seaweed) is still very small scale to push things forward.



Picture 8. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Wave in the Baltic Sea Basin

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7.3.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

Commercial businesses and business support in the **UK Atlantic**, have close links with other locations (e.g. Ireland) and thus 'sea-basin' scale of power. For certain salmon aquaculture developers, strong global market ties exist, with Scottish salmon comprising a premium commodity. Shellfish aquaculture has a more domestic scale. For regulators and policy makers, scale of power is 'national' because that is their level of jurisdiction[20].Funding bodies have 'EU' scale, because the majority of funds are provided at that level. For the MU NGOS/society representatives have a 'local-regional' scale, overlapping with the MU development geographic extent.

In Ireland, wave developers and business support have close links with other locations in the NE Atlantic (e.g. Northern Ireland (NI) and rest of UK, e.g. Scotland) and thus 'sea-basin scale of power'; aquaculture developers and business support have a 'national' scale. For regulators and policy makers, scale of power is 'national' because that is their level of jurisdiction. Research organisations have an 'EU' scale (e.g. MARIBE). For the MU NGOS/society representatives have a 'local-regional' scale, overlapping with the MU development geographic extent. Cross sector commercial businesses and NGOs would also have a 'local-regional' scale.

Mediterranean

In **Malta**, commercial businesses operate at the EU level, while the rest of the stakeholders operate at the national level.

Baltic Sea basin

In **Denmark**, the national authority administers the marine strategy directive in all the sea areas while the municipal councils are the authorities that administer the water framework directive from the baseline + 1 nautical mile.

7.3.3. Type and level of power

Eastern Atlantic

In the **UK Atlantic** regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development (e.g. National and sub-national Marine

[20] National/sub-national definitions as they appear in the HM Government, 2011. UK Marine Policy Statement (See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf (Accessed: 17/10/2017)

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Plans). Commercial businesses (investment capital/technology), business support (test facilities) and funding bodies have a 'power to influence directly' ('strong'). For offshore renewables, certain classification schemes are obligatory (Lloyds Registry) thus relevant societies have the 'power to control and make decisions' ('strong'). NGOS/society representatives have a 'power to influence directly' ('medium') since they have challenged relevant developments in the past and could do so in the future. Intermediaries (offshore energy clusters), although not statutory stakeholders, promote the development of offshore renewables, and thus have a 'power to influence indirectly' ('medium') the MU. Cross sector NGOs/society representatives' have a 'power to influence indirectly' ('medium') since they can potentially challenge developmental activities/MU if the objectives are contrary to their own.

In **Spain (Atlantic)**, the largest number of stakeholders that have the power to influence decisions and the power to make decisions and control the energy sector, is concentrated in the ministry. However, the opposite situation appears on aquaculture, as this is a subject where autonomous regions have most of the competences. The lack of a national stakeholder on offshore aquaculture with a high level of power is a sensitive gap. The stakeholder with strong power is a national agency (minister).

In **Ireland**, regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development (e.g.HOWW). Commercial businesses (investment/capital), business support (e.g. Lir national ocean test facility) and funding bodies have a 'power to influence directly' ('strong'). For offshore renewables, certain classification schemes are obligatory (Lloyds Registry) thus relevant societies have the 'power to control and make decisions' ('strong'). NGOS/society representatives have a 'power to influence directly' ('medium') since they have challenged offshore energy development in the past and could do so in the future. Research organisations have a 'power to influence indirectly' ('medium'), through project results and scientific publications. Cross sector commercial businesses (e.g. shipping, ports), business support and NGOs have a 'power to influence indirectly' ('medium') the development of the MU.

Mediterranean

In **Malta**, the aquaculture policy makers have a strong power to control and take decisions, while the aquaculture and wave energy commercial business have low to medium power to influence this MU indirectly.

Baltic Sea basin

In **Denmark**, funding bodies have a strong role in this regard, as well as the innovation centres and intermediaries. Their main role is in creating a strong market for the Danish seaweed sector, connecting relevant actors that haven't had a chance to cooperate before (i.e. no tradition of cooperation between aquaculture and wave energy producers).

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7.3.4. Organisation of stakeholders (for all the combinations under 'aquaculture and renewables')

Eastern Atlantic

In the **UK**[21], aquaculture involves salmon farming within lochs/loughs, shellfish farming and lately, to a lesser degree, seaweed farming. Salmon aquaculture developers also include large companies with large capital and considerable financial revenues. Shellfish and seaweed farmers include small and medium-sized enterprises. Energy sector representatives include companies that range from SME with a local/regional outlook (for instance in the case of the MU wave and aquaculture development in Scotland), to national or even global leaders for the offshore renewable energy sector (e.g. DONG energy). In Ireland, certain OW commercial developers, although successful in granting necessary leases/licenses, have currently ceased developmental activity due to the unfavourable market conditions but this is expected to change in the future. Policy makers and regulators in the UK involve a couple of organisations (MMO, Marine Scotland, the Crown Estate, the Crown Estate Scotland) while in Ireland, marine/maritime affairs are assigned to various agencies and institutions (e.g. DCENR, DCENG, DHPLG, DoD, Marine Institute, etc.).

In **Spain (Atlantic)**, aquaculture is more concentrated on onshore aquaculture and organizations appear at a regional/local level with strong organizational systems. As for the energy sector stakeholders are mainly national representatives with one also operating at the EU level. In relation to cross-sector stakeholders, the number of research centres is high and some of them have studies on MU site location. The two clusters that declined to participate are potentially more appropriate entities to support and influence any type of MU.

In **Portugal**, there are few individual organizations related to offshore aquaculture and the marine renewable energy sector has even less representatives. The energy companies in mainland Portugal, Azores and Madeira, as well as specialized research centres and companies are members of the renewable energy association but nothing specific for marine renewable energy. In Portugal, the stakeholders classified as cross sector are involved with different sectors, thus the description for this MU is the same as presented for the MU Aquaculture and Tourism.

Mediterranean

In **Malta**, there seem to be a very low level of interaction among all identified stakeholders.

North Sea

The Netherlands has a couple of mussel farming companies which are traditionally from sea village communities. There are a handful of small seaweed start-up companies, which are not officially organised, but are very likely to have strong informal connection.

In **Belgium,** there are about two dozen organisation engaged in Multi-use in the Belgian North Sea, these organisations appear to know each other well and from a tight network.

[21]Referring to all parts of UK (both, Atlantic and the North Sea), incl. Ireland

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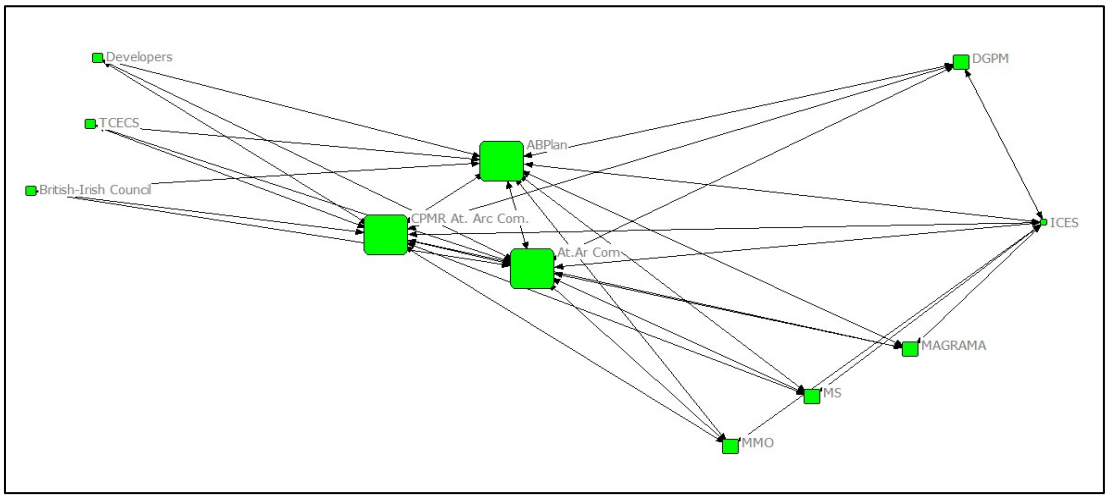
7.3.5. Sea basin stakeholder network analysis (for all the combinations under 'aquaculture and renewables')[22]

Eastern Atlantic



Picture 9. Stakeholder network in the Eastern Atlantic

According to the stakeholder network structure on the picture 9 for the MU combination aquaculture and renewable energy, there is a low number of links, thus lower power[23]of the actors that present aquaculture sector (e.g. ICES). The low power to influence the MU development is illustrated by the very distant position from other relevant actors, consequently showing the low ability to influence decisions on the sea basin level. Nevertheless, same logic implies for all other stakeholders positioned distantly from the central actors (e.g. Atlantic Arc Commission, ABPlan, CPMR), while size of the node shows low number of links with other actors in the network.

[22] The chapter 7 combines together all the relevant combinations that fall under the aquaculture and renewables. This approach was used in order to avoid duplication of the SNA graphs that are the same for all given that the pool of sea basin relevant stakeholders appears to be the same.

[23]Markantonatou, V., Meidinger, M., Sano, M., OIkonomou, E., Di Carlo, G., Palma,M., Ponti, M., Cerrano, C. 2013. Stakeholder Technology .

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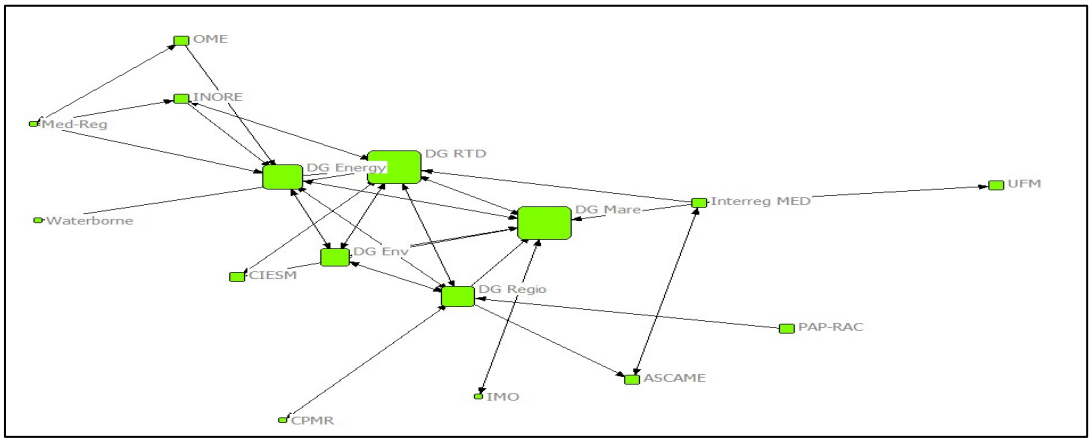
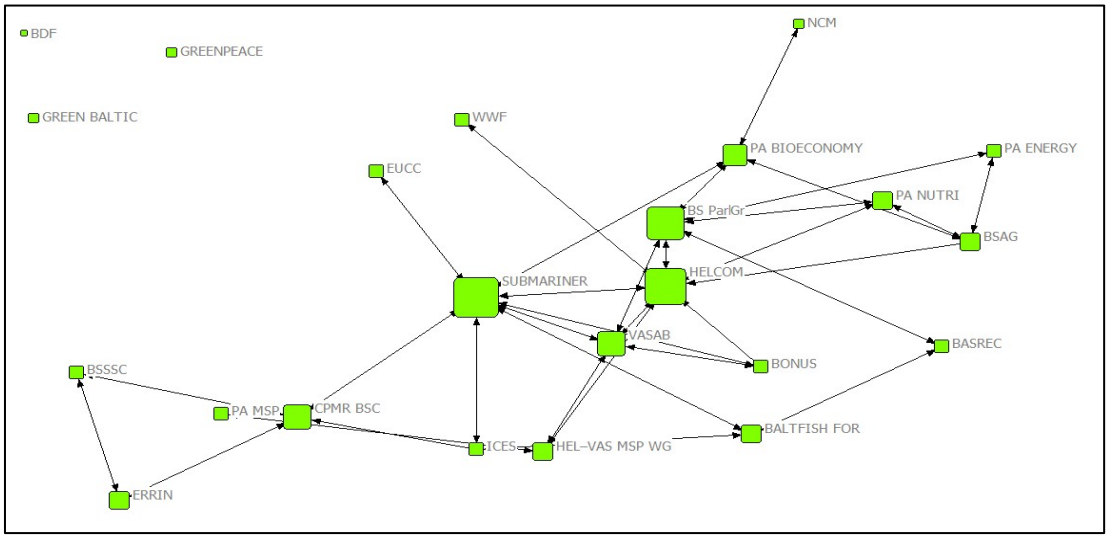
Mediterranean



Picture 10. Stakeholder network in the Mediterranean

From the structure of the stakeholder network for the MU combination aquaculture and renewable energy, illustrated on the picture 10, EU level stakeholders (e.g. DG Mare, DG DTG), appear important for the development of this MU combination. This is due to their central position in the network, likewise size of the node, which is related to the number of links they hold. For the fisheries and aquaculture sectors there is an individual dominance, while closeness of the energy sector with the development department (DG RTD) may give an insight on their strong communication and potential for current or future development aims in this direction for the Mediterranean region.

Baltic Sea Basin



Picture 11. Stakeholder network in the Baltic Sea Basin

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The picture 11 shows the network structure and position of the relevant actors for the MU combination aquaculture and renewable energy on the BSR. From the visualised structure is could be assumed that there is a low possibility for the MU to be initiated by the actors from the sectors. This is due to the fact that these are marginalized and distant from one another (e.g. PA Energy, BASREC, ICES, and Baltfish). Rather, the leading roles have cross-sectoral actors involved in all marine activities (e.g. HELCOM, VASAB). The stakeholders' network analysis focused on pan-Baltic stakeholder (excluding national stakeholders). However, as a result of stakeholder attributes analysis one may assume that the leading role would also have national MSP authorities.

8. SHIPPING TERMINAL (PORT) AND OW

Table 5. Relevance of the shipping terminal and offshore wind energy MU combination in the EU sea basins/countries

Shipping terminal (port) & OW	
Sea basin	North Sea
Country	UK

8.1. Overall activity and attitude of relevant stakeholders in relation to the MU

North Sea basin

In the **UK North Sea**, this MU today mostly involves the connection of OWF with ports and/or ports being the operational and maintenance base of OWF, and has not yet been implemented at a large scale. Policy makers and research organisations are interested and promote the further development of the MU, as it appears from key policy documents (e.g. Scottish National Renewables Infrastructure Plan; Scottish NMP 'consideration of the provision of facilities for shore side power') and engagement in relevant projects (e.g. MUSES). Offshore wind developers and regulators view the MU favourably, as it would enable the connection of OWF to the electrical grid. Port developers/harbour authorities, business support/consultancies and classification societies do not find the MU particularly promising for further development in the foreseeable future as it would require huge financial and infrastructure investments.) while also, other alternatives might currently be more reliable and economically profitable (e.g. onshore wind; LNG; solar energy). However,, if policy (especially IMO) and financial frameworks change, stakeholders might view the MU more positively. Other key intermediaries (e.g. shipping) are not currently viewing the specific MU favourably as suggested by key documents ('negative-imposing barriers'), because they believe it will result in considerable costs.

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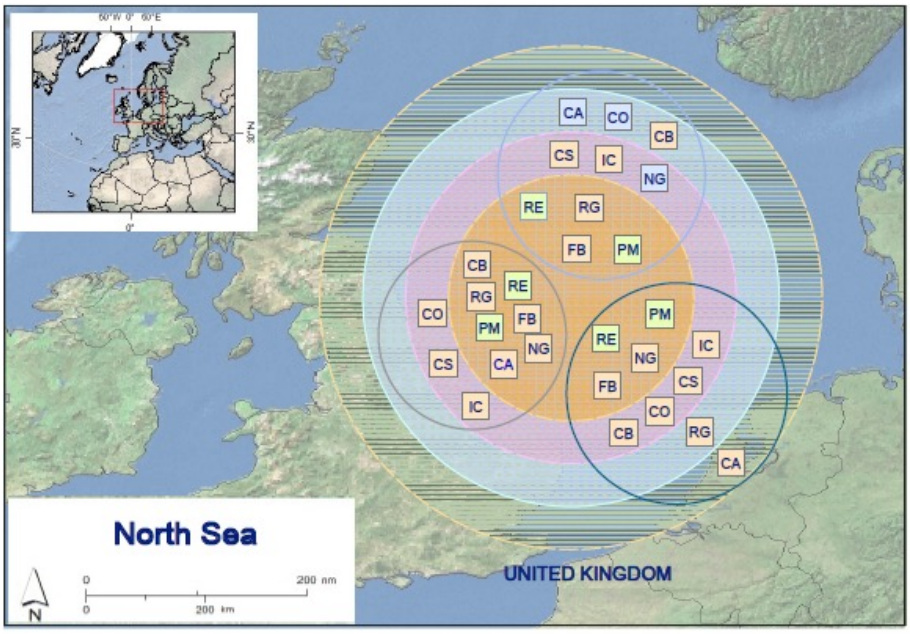

Picture 12. Stakeholders' relevance, activity and attitude in relation to the Shipping terminal (port) & OW in the North Sea Basin

8.2. Geographical scale at which certain stakeholder have the power

North Sea basin

For port-related commercial businesses (port owners), regulators (port and OW authorities), classification societies, research organisations, insurance companies and intermediaries in the **UK North Sea**, the scale of power is 'national', for the extent of their operation. For OW commercial businesses, scale of power is 'sea-basin' wide, because they have close links with other locations in the NE Atlantic (e.g. Ireland, Norway). For policy makers, scale of power is 'national' because that is their level of jurisdiction[24]. For offshore renewable businesses support scale of power is 'EU' wide (e.g. EMEC – European Centre) and attract developers from all around the EU. Business support and research organisations for the particular MU have an 'EU' scale. Cross sector stakeholders generally have an EU scale (i.e. range of shipping operations).

[24] National and sub-national definitions as they appear in the HM Government, 2011. UK Marine Policy Statement (See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf (Accessed: 17/10/2017)

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8.3. Type and level of power

North Sea basin

In the **UK North Sea**, commercial businesses, regulators (port authorities and/or leasing licencing authorities) and policy makers, have a 'power to control and make decisions' ('strong') since port planning and development is their jurisdiction. For the specific MU, classification companies also have a 'power to control and make decisions' ('strong'). Funding bodies and intermediaries have a 'power to influence directly', since they play a role ('strong' and 'low' respectively) in implementing the MU. OW business support, intermediaries, funding bodies and NGOs have 'power to influence directly' that can be 'strong' for the implementation of the specific MU. Certain cross sector stakeholders also have 'power influence directly' ('strong').

8.4. Organisation of stakeholders

North Sea basin

Port ownership, in **the UK,** is public, trust or private. All port ownership categories exhibit 'strong clustering' (i.e. few companies owning/operating several ports). Regulators include owners/port authorities. Other regulators include leasing/licensing authorities (e.g. MMO, Marine Scotland; The Crown Estate, the Crown Estate Scotland). Intermediaries include clusters relevant to ports (e.g. UKMPGS, British Ports Association, and Associated British Ports) and offshore renewable energy (e.g. ORJIP, Scottish renewables). Cross-sector involves other stakeholders that can be influenced by proposed MUs (e.g. shipping, fishing, tourism, etc.); commercial businesses include shipping companies (e.g. COSCO, MAERSK etc.). Regulators and policy makers include national / international conventions (e.g. IMO, OSPAR). Intermediaries include clusters relevant to shipping (e.g. International Chamber of Shipping).NGOS/Society representatives include local communities, environmental NGOs, farmers, fishers and other stakeholders influenced by the MU ('a lot of individual organisations').

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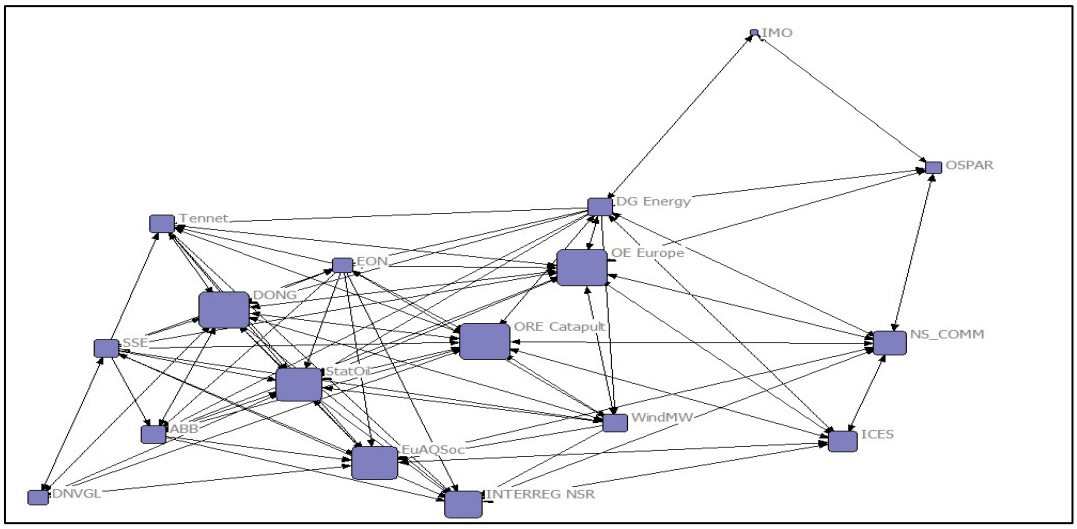
8.5. Sea basin stakeholder network analysis

North Sea basin



Picture 13. Stakeholder network in the North Sea

From the network structure of the North sea for the MU combination shipping terminal and offshore wind as presented on picture 13, it is interesting to see the high level of power that energy sector has over the transportation/port sector. The most important international organizations that may foster development of this MU combination are stakeholders placed in the centre of network (e.g. DG Energy, OE Europe, and ORE Catapult). Likewise, the size of the node of these stakeholders shows that they are very well connected with other stakeholders in the network. Nevertheless, IMO seems to be distant from other stakeholders, which may be a result of the very good linkage of the energy actors at the EU level, whereas this is not strong for the transportation actor.

9. TIDE AND WAVE ENERGY GENERATION

Table 6. Relevance of the wave and tide energy MU combination in the EU sea basins/countries

Wave and Tide		
Sea basin	Eastern Atlantic	North Sea
Country	UK	UK

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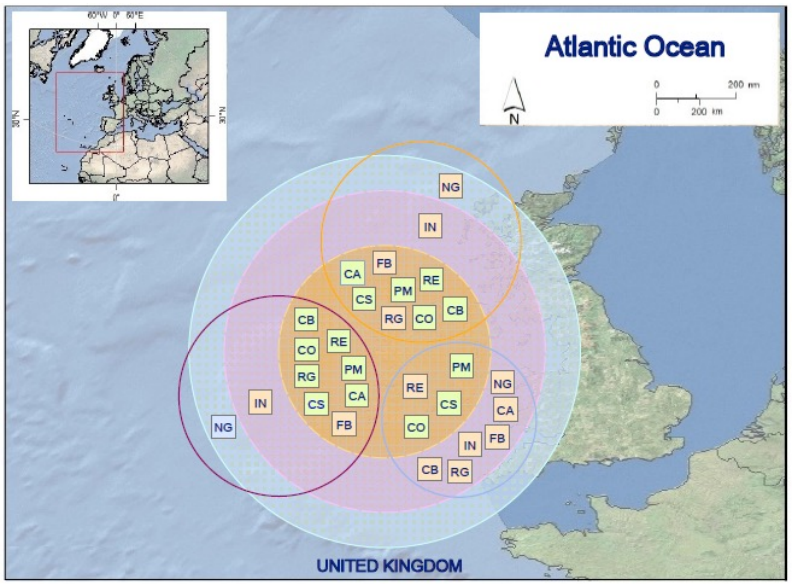
9.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In the **UK Atlantic**, for the majority of stakeholders overall attitude towards MU is 'positive', based on investments in the MU and also from feedback from interviews. NGOs/society representatives have challenged marine renewable developments in the past but their engagement ultimately led to improved planning (attitude towards MU: 'negative-but can positively influence barriers'.



Picture 14. Stakeholders' relevance, activity and attitude in relation to the Tide and Wave in the Eastern Atlantic Sea Basin

North Sea

In the **UK North Sea**, most of the stakeholders view the MU favourably as shown by relevant past and on-going research and pilot projects and funds provided for the activities I; and also from feedback from interviews within the scope of the MUSES project. NGOs/society representatives have challenged marine renewable developments in the past but their engagement ultimately led to improved planning (attitude towards MU: 'negative-but can positively influence barriers'.

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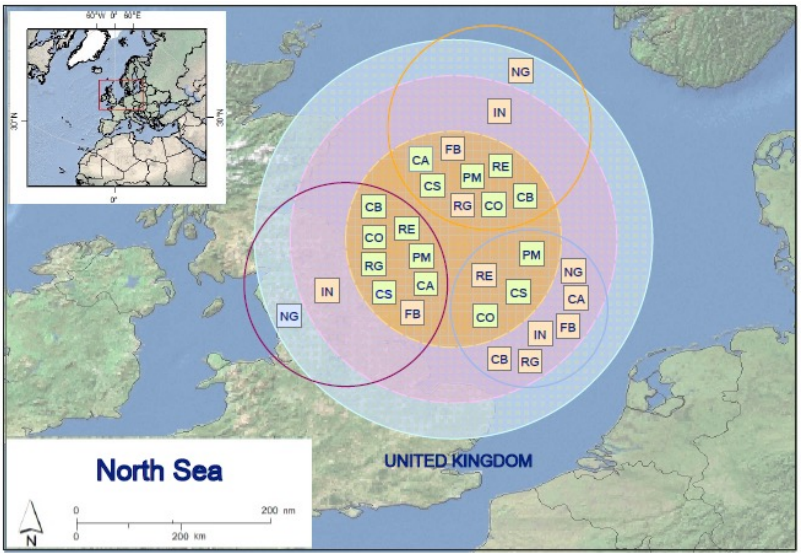

Picture 15. Stakeholders' relevance, activity and attitude in relation to the Tide and Wave in the North Sea Basin

9.2. Geographical scale at which certain stakeholder have the power

Atlantic

In the **UK Atlantic**, commercial businesses have close links with other locations (e.g. Ireland) and thus a 'sea-basin' scale of power. Energy business support and intermediaries (e.g. EMEC – European Centre) attract developers from all around the EU and have an 'EU' scale. Research organisations have an EU wide scale, because the projects they were involved were EU-wide for MU research. For policy makers and regulators, scale of power is 'national' because that is their level of jurisdiction[25]. Funding bodies have 'national' scale, because the majority of funds are provided at that level. Cross sector stakeholders mostly have a local-regional influence, overlapping the geographic scale of the MU.

North Sea

In the **UK North Sea**, commercial businesses have close links with other locations (e.g. Ireland) and thus a 'sea-basin' scale of power. Energy business support and intermediaries (e.g. EMEC – European Centre) attract developers from all around the EU and have an 'EU' scale. Research organisations have a 'sea-basin' wide scale (the framework of relevant projects). For policy makers and regulators,

[25] National/sub-national definitions as they appear in the HM Government, 2011. UK Marine Policy Statement (See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf (Accessed: 17/10/2017)

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scale of power is 'national' because that is their level of jurisdiction[26]. Funding bodies have 'national' scale, because the majority of funds are provided at that level. NGOS and cross sector stakeholders mostly have a local-regional scale (i.e. geographic scale of the MU).

9.3. Type and level of power

Eastern Atlantic

In the **UK Atlantic**, regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development (e.g. National and sub-national Marine Plans). Commercial businesses (investment capital/technology), business support (test facilities) and funding bodies have a 'power to influence directly' ('strong'). NGOS/society representatives have a 'power to influence directly' ('strong') since they have challenged relevant developments in the past and could do so in the future. Research organisations have a 'power to influence indirectly' ('medium'), through project results and scientific publications, and taking into account considerable funds have been allocated for research into marine renewables. Intermediaries (offshore energy clusters), although not statutory stakeholders, promote relevant developments and thus have 'power to influence directly' ('medium'). Cross sector classification societies have a 'power to influence directly' ('strong') e.g. shipping stakeholders that directly influence MU due to the essential infrastructure required for accommodating MU (vessels).

North Sea

In the **UK North Sea**, regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development (e.g. National and sub-national Marine Plans) Commercial businesses (investment capital/technology), business support (test facilities) and funding bodies have a 'power to influence directly' ('strong'). NGOS/society representatives have a 'power to influence directly' ('strong') since they have challenged relevant developments in the past and could do so in the future. Research organisations have a 'power to influence indirectly' ('medium'), through project results and scientific publications and taking into account considerable funds have been allocated for research into marine renewables. Intermediaries (offshore energy clusters), although not statutory stakeholders, promote relevant developments and thus have a 'power to influence directly' which is 'medium' (Cross sector classification societies have a 'power to influence directly' (strong') e.g. shipping stakeholders that directly influence MU due to the essential infrastructure required for accommodating MU (vessels).

9.4. Organisation of stakeholders

In the **UK (Atlantic and North Sea)**, energy sector representatives include companies that range from SME with a local/regional outlook, to national or even global leaders for the offshore renewable energy sector (e.g. DONG energy, Statoil). Policy makers and regulators involve a couple

[26] National/sub-national definitions as they appear in the HM Government, 2011. UK Marine Policy Statement (See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf (Accessed: 17/10/2017)

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of organisations (MMO, Marine Scotland; the Crown Estate; the Crown Estate Scotland). Other key stakeholders include business support (e.g. EMEC – European Marine Energy Centre) and intermediaries.

10. TIDAL ENERGY DEVELOPMENT AND ENVIRONMENTAL PROTECTION AND MONITORING (CASE STUDY)

The concept of MU in relation to the case study focus of Tidal Energy Development and Environmental Protection and Monitoring is in its infancy stages. The analysis area for the case study is **located in the North Sea region, focusing in on the Inner Sound of the Pentland Firth off the north coast of Scotland between Caithness on the Scottish mainland and the island of Stroma**.

The only existing MU is visible through the MeyGen project headed by Atlantis Resources Ltd. The project is in its initial phase with four turbines deployed and with deployment of further turbines planned using a phased approach. The aim of the MeyGen project is to develop a tidal energy project which is sustainable with the marine environment.

10.1 Overall activity and attitude of relevant stakeholders in relation to the MU

The overall interest of stakeholders in MU between tidal energy development and environmental protection and monitoring is varied. Tidal energy technology and project developers are concerned with developing tidal current turbine (TCT) arrays but are not actively seeking to develop MU specifically in environmental protection areas. However, such developers are promoting MU with environmental monitoring as it is a condition of consent for development under the Scottish Survey, Deploy, Monitor (SDM) licensing policy guidance. The emphasis of research organizations is for the most part broken up into in silos either pertaining to tidal energy development, environmental monitoring, and environmental interactions with development. While there is some integration, there is not considerable focus on the concept/synergies of MU at the moment. However, this is primarily due to the pre-commercial status of the tidal energy industry, and subsequently the lack of available data on environmental interactions with TCT arrays, as well as the lack of standardized baseline data on high energy tidal flow environments. Finally, with regards to the interest of funding bodies pertaining to MU, while funding is made available for research, this has thus far been limited to tidal energy development or environmental interactions, rather than studying MU as a concept in order to promote co-location of developments in environmental protection areas.

Regulators, particularly Marine Scotland, are actively promoting MU between tidal energy development and environmental protection and monitoring through various national policies and objectives through the NMP, Climate Change (Scotland) Act 2009, SDM licensing policy guidance,

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etc. The UK Government also plays a role particularly though the Good Environmental Status Descriptors (GES) of the Marine Strategy Framework Directive (MSFD) and UK Sustainable Development Strategy. EU legislation also seeks to promote MU through the Habitats Directive 92/42/EC and Birds Directive 2009/147/EC, Strategic Environmental Assessment (SEA) Directive 2001/42/EC and Environmental Impact Assessment Directive 2014/52/EU, etc. Also, policy makers, once again with particular reference to Marine Scotland, are actively promoting MU in the territorial zone (TZ) and exclusive economic zone (EEZ) where powers to plan for the marine environment with respect to marine renewable energy (MRE) has been delegated from the UK Crown Estate to Marne Scotland via the Marine Scotland Act 2010 and UK Coastal Access Act 2009. Furthermore, legislated renewable energy deployment and greenhouse gas (GHG) mitigation targets set out in the Climate Change (Scotland) Act 2009, as well as the national objectives of the NMP and Scottish Energy Strategy guide the development of the tidal energy industry in the Scottish national economic context.

Insurance companies for the tidal energy industry are seemingly not actively seeking any solutions to better insure developments, particularly in relation to co-location within protected marine environments which is seen as riskier. Given that there is not a substantial amount of data to inform environmental interactions with TCT arrays due to the pre-commercial status of TCT technology and implementation, tidal energy projects are not currently bankable. The inability to achieve non-recourse and project finance enhances insurance premiums of development. NGOs and other societal drivers are not promoting MU as development is seen as not generally being a part of the silo which they engage with. With respect to Environmental NGOs (ENGOs), the protection of various receptors of the marine environment is their sole interest, while the effects that climate change can have on such receptors, which tidal energy implementation can help lesson through the mitigation of GHG emissions, is somewhat ignored. With respect to society as a whole, while some stakeholders project that development will have positive impacts on the economies and associated communities of various regions and localities targeted for development, it is generally believed that the tidal energy is too early in its stage of development to allow for community ownership as is the objective of the Scottish Energy Strategy, and therefore MU is not seen as an immediate priority. However, NGOs and other societal bodies are proactive in characterizing the marine environment and protecting environmental receptors.

The overall attitude of stakeholders in MU between tidal energy development and environmental protection and monitoring is split between those which are neutral and/or undecided, and those who are positive, acting as driving forces towards MU implementation. Tidal energy developers are seen to be undecided/neutral in promoting MU with environmental protection as the bottom line would be development and not protection. In fact, many stakeholders believe that development in protected areas many translate into stricter (and therefore more expensive) monitoring programmes, which would not be preferred by developers. Research organizations currently seem undecided towards MU as there is only a limited amount of in-situ data from commercial deployments to utilize and inform decisions, therefore, research priorities are attributed elsewhere. Finally, NGOs are seen as neutral in their approach to MU as silos typically are maintained in relation to specific environmental receptors; while many stakeholders believe the tidal energy industry is too early in its stage of develop to provide opportunities for local community

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ownership.

Regulators are typically viewed as a driving force regarding MU through the enforcement of policies and legislation, establishment and creation of roadmaps to secure their stated visions, and particularly the implementation of demonstration projects such as the Scottish demonstration Project whereby environmental monitoring is undertaken for TCT prototypes and environmental characterization via various innovative monitoring technologies. Policy makers also have a positive attitude towards MU, providing strategic guidance to promote tidal energy development in sensitive marine environments through a number of objectives and policies set out in the NMP, as well as the creation and implementation of the sectoral marine plan for tidal energy (SMPTE). Finally, funding bodies, particularly the EU in relation to MU through the MUSES project, and the Scottish Government for tidal energy environmental monitoring through the Scottish Demonstration Strategy, are driving forces in allowing for the production of data which can directly and indirectly inform MU, respectively. However, while funding is allocated towards determining environmental interactions with TCT arrays, funding bodies are neutral with respect to MU between tidal energy development and environmental protection as there are no major research or funded projects focusing on co-locating TCT arrays in marine protected areas.

Given the financial risk of tidal energy development, insurance companies are seen as having a negative attitude towards MU impose a massive financial barrier towards development, and therefore eventual MU with environmental protection. With regards to MU with environmental monitoring, the SDM policy guidance provides a condition of consent to monitor, and it is this data which must be collected and analyzed over time which is required to de-risk development, MU, and lift barriers imposed by insurance companies.

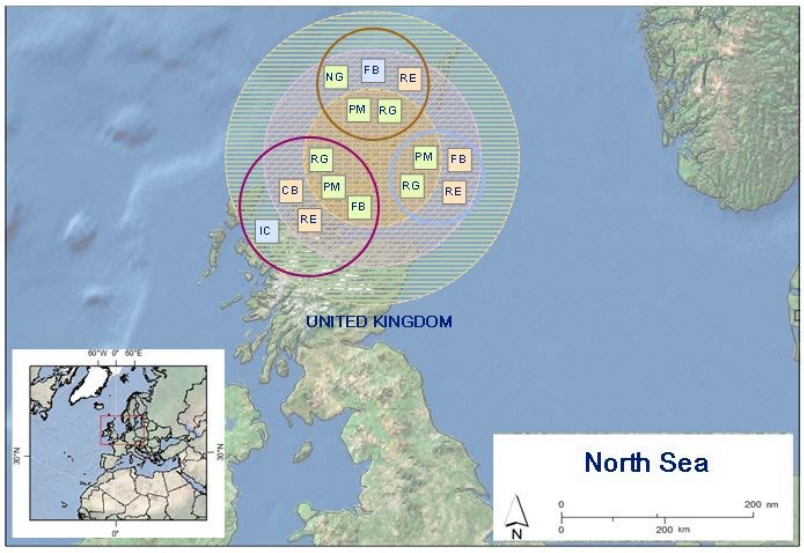

Figure 16: *Stakeholders' relevance, activity and attitude in relation to Tidal Energy Development and Environmental protection and Monitoring in the UK case study*

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10.2 Geographical scale at which certain stakeholders have power

The overall geographical scale of stakeholder power in relation to MU between tidal energy development and environmental protection and monitoring is split between national and EU. Tidal energy developers are seen to have power in a national Scottish geographical scale as policies pertaining to development, as well as the objectives of the national government set out in the NMP are specific to each nation. Furthermore, such developers have a focus on Scotland at the moment given its international leadership role in the development of tidal energy. Regulator and policy maker power is national given the TZ and EEZ where powers to plan for the marine environment, with respect to MRE, has been delegated from the UK Crown Estate to Marne Scotland via the Marine Scotland Act 2010 and UK Coastal Access Act 2009. NGOs and societal bodies are typically national in their geographical scale as they represent the needs of specific species in given habitats that are endemic to various regions within a country, while communities are effected within these geographical ranges. Even international bodies such as Whale and Dolphin Conservation have national chapters to address issues in local/regional marine environments.

Research organizations have national-scale power as the marine environments are specific to regional/local Scottish waters, while most planned and commencing commercial developments are located in the Scottish TZ. However, the relatively minor amount of MU specific research (e.g. the MUSES project) is at an EU level as strategic partnerships seek to evolve the concept of MU across European sea basins. Barriers imposed by insurance companies is witnessed at an EU, and even international level, given the pre-commercial status of the TCT technology, as well as the lack of baseline data in high tidal energy environments given the difficultly of creating fit-for-purpose monitoring equipment. Finally, the highest level of power for funding bodies is EU given partnership and sharing of information approaches towards MU on a sea basin scale.

10.3 Type and level of power

The overall type of power stakeholders possess in relation to MU between tidal energy development and environmental protection and monitoring is split between indirect and direct influence, and the power to control and make decisions depending on the stakeholder organization. Tidal energy developers can indirectly influence MU with environmental protection and monitoring through the promise which they possess in contributing to the Scottish national economy in order to full legislated renewable energy deployment and GHG mitigation targets set out in the Climate Change (Scotland) Act 2009, as well as the national objectives of the NMP and Scottish Energy Strategy. Furthermore, tidal energy developers can indirectly influence MU through implementing monitoring programmes as is a condition of consent under the SDM policy guidance. However, it is dependent on the dissemination of information obtaining from monitoring to other stakeholders (academia, regulators, statutory nature conservation bodies – SNCBs, ENGOs, the public) which could further co-location with environmental protection by educating/informing other stakeholders on environmental interactions, and thus securing buy-in for development. NGOs and other stakeholder bodies can also indirectly effect MU through research and the voicing of concerns which tidal energy development may have on particular environmental receptors.

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Research organizations can directly influence MU by informing insurance companies, government regulators, investors, and SNCBs on environmental interactions with TCT arrays. Such information will inform risk and therefore shape the economic and policy contexts of the emerging tidal energy industry. Funding bodies can also directly influence MU by proving for the resources required in order to produce data on environmental interactions with TCT arrays. Regulators and policy makers such as Marine Scotland and the UK Crown Estate have legislative power to control and make decisions through the Marine Scotland Act 2010 and UK Coastal Access Act 2009, as well as a number of national policies and EU legislation. Finally, insurance companies have the power to control and make decisions pertaining to the premiums they charge on development. While EIAs and appropriate assessments can inform the likelihood of development having negative impacts on specific environmental receptors, this information cannot yet be validated against a large set of data emanating from in-situ commercial developments.

Regardless of the type of power possessed by certain stakeholder organizations, the slight majority of stakeholders possess a strong level of power in relation to MU between tidal energy development and environmental protection and monitoring over their respective influences, although this is context and stakeholder dependant. As the legislated competent authorities, regulators and policy makers have strong power over the promotion of MU in a political and legal context. Funding bodies can have strong power for tidal energy development as they can attribute the resources required to inform the viability of MU, while Insurance companies have strong power over the implementation of MU as they set the insurance premiums for development. Research organizations have medium power as they are not formal legislated decision makers, rather, the information produced from their research can inform decision-making. NGOs and other organizations have medium power in that damage to environmental receptors stemming from TCT array deployment can result in litigation which may be supported by such bodies. Finally, the power of influence from tidal energy developers is agreed upon stakeholders as to be relatively low as they are currently not contributing substantially to the national economy given the pre-commercial status of the tidal energy industry.

10.4 Organisation of Stakeholders

The overall organization of stakeholders in relation to MU between tidal energy development and environmental protection and monitoring is scattered across a varied number individual organizations, strong clustering, and monopoly. There are only a handful of individual tidal energy development organizations who have achieved (or are close to achieving) commercial scale development and technology readiness levels (TRLs) - between 7 – 9. These leading organizations include (but are not limited to) Atlantis Resources Ltd, Nova Innovation Ltd, DP Energy, and Scotrenewables. Given that the tidal energy industry is pre-commercial, high energy tidal environments have a relatively low environmental baseline characterization, and since MU is an emerging topic, there are only a handful of funding bodies contributing to the advancement of MU.

There are many individual research organizations that specialize in certain aspects

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associated with MU (e.g. migratory fish, hydrographic modelling, seal behavior, bio-fouling, MU monitoring platforms, etc.). Some research-oriented organizations include Environmental Research Institution (ERI), Scottish Association for Marine Science (SAMS), the University of St. Andrews and University of Aberdeen, Atlantic Salmon Trust. Similarly, there are many stakeholder NGO organizations who are concerned with various aspects of environmental receptors (e.g. Whale and Dolphin Conservation, Royal Society for the Protection of Birds, etc.), however, there no identified societal organizations promoting tidal energy development as of yet given the pre-commercial status of the tidal energy industry.

All regulators and policy makers demonstrate a degree of interconnectivity with regards to the promotion, enforcement, regulation, and monitoring of MU in research and development (R&D) initiatives. Finally, insurance companies represent a monopoly in the sense that TCT technology is pre-commercial and thus the risk stays relatively similar across various technological designs, thereby limiting completion between insurance companies to lower premiums.

11. MU OFFSHORE WIND AND WAVE ENERGY GENERATION

Table 7. Relevance of the offshore wind and wave energy MU combination in the EU sea basins/countries

Offshore Wind and Wave	
Sea basin	Eastern Atlantic
Country	IE

11.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In **Ireland**, although no pilot or commercial development of the MU currently exist, for the majority of stakeholders overall attitude is considered 'positive' as it appears from engagement in on-going research projects and also from the feedback from energy sector key stakeholders (OW and wave constitutes most promising MU for Ireland). NGOS/society representatives (i.e. local communities) in RoI have objected in the past to OW developments, however, their consultation can improve planning thus their attitude is considered 'negative-but can positively influence barriers'. Cross-sector stakeholders have an overall 'positive' attitude towards the particular MU.

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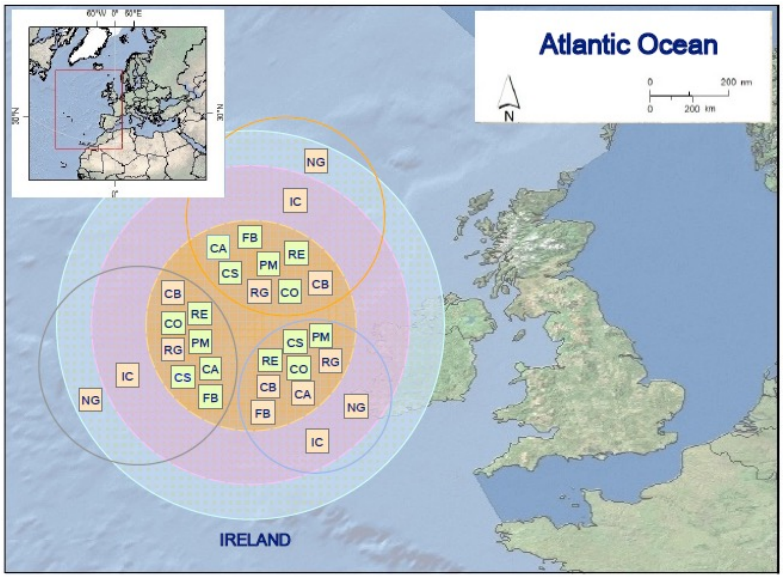

Picture 17. Stakeholders' relevance, activity and attitude in relation to the OW and Wave in the Eastern Atlantic Sea Basin

11.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

In **Ireland**, commercial businesses and business support have close links with other locations in the NE Atlantic (e.g. NI and rest of UK, e.g. Scotland), thus a'sea-basin' scale of power. Research organisations have an EU scale, because the projects they were involved in were EU-wide fundamental for MU research. For policy makers and regulators, scale of power is 'national' because that is their level of jurisdiction. Funding bodies have 'national' scale, because the majority of funds for the MU (e.g. SEIA) are provided at that level.

11.3. Type of power

Eastern Atlantic

In **Ireland**, regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development (e.g. HOWW). Commercial businesses (investment capital/technology), business support (test facilities) and funding bodies have a 'power to influence directly' ('strong'). For offshore renewables, certain classification schemes are obligatory (Lloyds Registry) thus relevant societies have the 'power to control and make decisions' ('strong'). NGOS/society representatives have a 'power to influence directly' ('medium') since they have challenged offshore energy development in the past and could do so in the future. Research organisations have a 'power to influence indirectly' ('medium'), through project results and scientific

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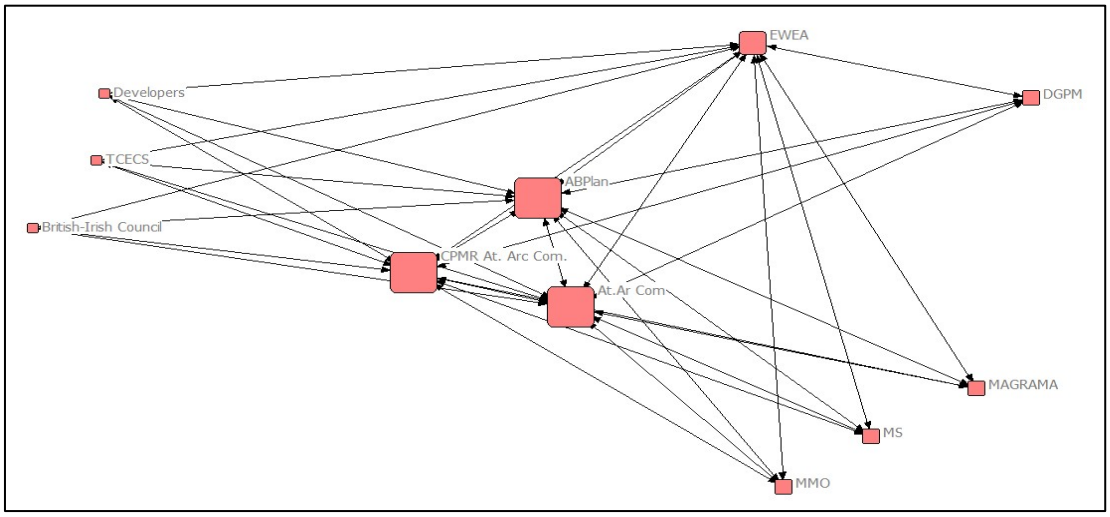
publications. Intermediaries, although not statutory stakeholders, promote relevant developments and thus have a 'power to influence directly' ('strong'). Cross sector (e.g. shipping, ports) regulators and policy makers have 'power to control and make decisions' ('strong'), funding bodies have 'power to influence directly ('strong') while commercial businesses and NGOs have the power to influence indirectly ('medium') the specific MU.

11.4. Organisation of stakeholders

In Ireland, certain OW commercial developers, although successful in granting necessary leases/licenses, have currently ceased developmental activity due to the unfavourable market conditions but this is expected to change in the future. Marine/maritime affairs are assigned to various agencies and institutions (e.g. DCENR, DCENG, DHPLG, DoD, Marine Institute, etc.). Other key stakeholders include: business support/consultancies, namely the institutions for pilot testing for offshore renewables (e.g. AMETS, SmartBay, LiR, tidal test facilities in NI).

11.5. Sea basin stakeholder network analysis

Eastern Atlantic



Picture 18. Stakeholder network in the Eastern Atlantic

Visualisation of the stakeholder network for the Atlantic sea basin actors involved in the MU OW and wave (picture 18) illustrates the central actors in the network. The Wind Europe (EWEA) is important in the context of the MU Offshore wind and wave development, while its good network linkage with the relevant national actors (e.g. Sustainable Energy Authority of Ireland) and international actors gives EWEA power on wide influence/lobbing for or against the MU development. Thus, this evidence makes EWEA an important stakeholder to be actively involved in the development plans.

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12. OFFSHORE WIND ENERGY GENERATION AND TOURISM

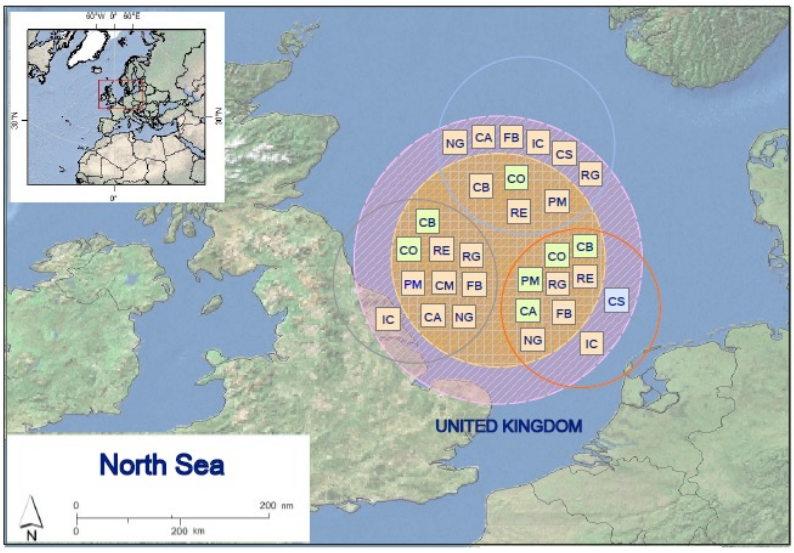
Table 8. Relevance of the offshore wind and tourism MU combination in the EU sea basins/countries

Offshore Wind and Tourism			
Sea basin	North Sea	Baltic Sea	
Country	UK	DE	SE

12.1. Overall activity and attitude of relevant stakeholders in relation to the MU

North Sea basin

In the **UK North Sea**, most stakeholders are classified as 'reactive' based on engagement in the MUSES stakeholder consultation (what interviewees suggested for other stakeholders' groups). Commercial businesses and business support have been classified as 'proactive' as shown by cases of implementation of the specific MU (e.g. Great Yarmouth, Eastern England). Intermediaries of the tourism industry are also 'proactive' i.e. actively engaged in the specific MU development. For the majority of stakeholders overall attitude is 'positive', as it appears from investments in the particular MU, engagement in relevant projects and also from the feedback from interviews. For insurance companies and cross sector stakeholders, overall attitude is 'neutral/undecided' as they may be both positive and negative towards the development of the specific MU. Cross sector stakeholders are mostly 'neutral/undecided' as attitudes to MU can be both negative and positive, depending on the scale and location of the MU (e.g. local populations objecting near-shore OW developments).



Picture 19. Stakeholders' relevance, activity and attitude in relation to the OW and Tourism in the North Sea Basin

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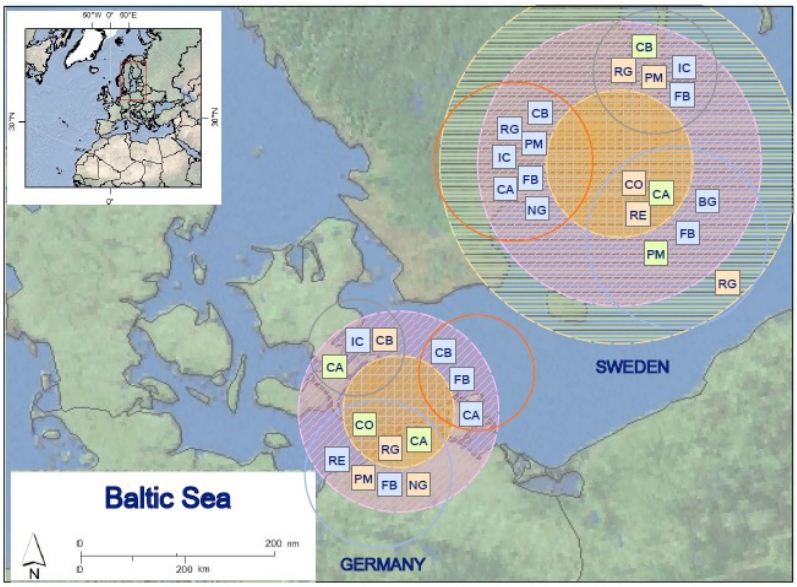
Baltic Sea basin

In **German Baltic**, according to the information portal on renewable energy maintained by the national authority, there are tour packages to offshore wind parks and construction sites as well as individual excursion offers. For Mecklenburg-Vorpommern, Rostock is said to be a starting point for such tours.However, neither Google search nor a phone call to the Rostock tourist information yielded results on any regular offers. The local boat tour operators' attitude towards this MU is not very clear. So far, there was a negative perception regarding the OW development given that less space was left for boating. There seems to be no identified barriers, but rather a lack of idea and funds. The attitude of the OW developers/operators is in general positive; however, their main concern is the accessibility to the site.

In **Sweden**, the OW sector is facing difficulties in securing finance for new OW developments, while the public acceptance was an issue in some of the past project applications. The attitude of the potential OW developer is in general positive, as keeping the OW area open for combining with tourism offers, in some cases, an increased chance of receiving the permit for the OW development. So far, one OW operator in Sweden is conducting boat tours to the wind farm; however, these are not commercial but rather for the marketing and corporate social responsibility (CSR) purposes.



Picture 20. Stakeholders' relevance, activity and attitude in relation to the OW and Tourism in the Baltic Sea Basin

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12.2. Geographical scale at which certain stakeholder have the power

North Sea

In the **UK North Sea**, OW commercial businesses have close links with other locations in the NE Atlantic (e.g. Ireland) and thus a 'sea-basin' scale tourism and cross-sector commercial businesses have a 'local-regional' scale. For business support and NGOs/society representatives' scale of power is 'local-regional' (i.e. to correspond to the geographic extent of the MU). Regulators and policy makers, scale of power is 'national' because that is their level of jurisdiction[27]. Research organisations, funding bodies, classification societies and insurance companies for the particular MU also have a 'national' scale.

Baltic Sea

In **Germany**, local boat tour operators are mainly concentrated in Schleswig-Holstein (both Baltic and the North Sea) and Mecklenburg-Vorpommern (Baltic Sea), while the OW developers/operators are operating on the EU level. As this combination is more feasible in the territorial waters (up to 12 nm), the licensing is in the responsibility of federal states.

12.3. Type and level of power

North Sea

In the **UK North Sea**, regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development. Commercial businesses (investment capital/technology), business support and funding bodies have a 'power to influence directly' ('strong') with investments in visitor centres provided by the OWF developers. For offshore renewables, certain classification schemes are obligatory (Lloyds Registry) thus relevant societies have the 'power to control and make decisions' ('strong'). NGOS/society representatives have a 'power to influence directly' ('strong') since they have challenged offshore energy development in the past and could do so in the future. Research organisations have a 'power to influence indirectly' ('medium'), through project results and scientific publications. Intermediaries, although not statutory stakeholders, promote relevant developments thus have a 'power to influence directly' ('medium') Cross sector (e.g. shipping, ports) policy makers and regulators have 'power to control and make decisions' ('strong' and 'medium' respectively).

[27] National/sub-national definitions as they appear in the HM Government, 2011. UK Marine Policy Statement (See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf (Accessed: 17/10/2017)

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Baltic Sea

In **Germany**, funding bodies and innovation centers have the main role in generating ideas and securing funds for this MU. Intermediaries (local tourism centers and associations) have the power to raise the awareness of existence and benefits of such development. In **Sweden**, given the financial difficulties the OW sector is facing, the main power to push this MU forward lays with the authorities. As the lack of certainty and viable business models is the major issue, MSP and licensing authorities, insurance bodies as well as business development consultancies are recognised to have the major role in identifying the viable solutions, providing necessary support and enforcing the decisions.

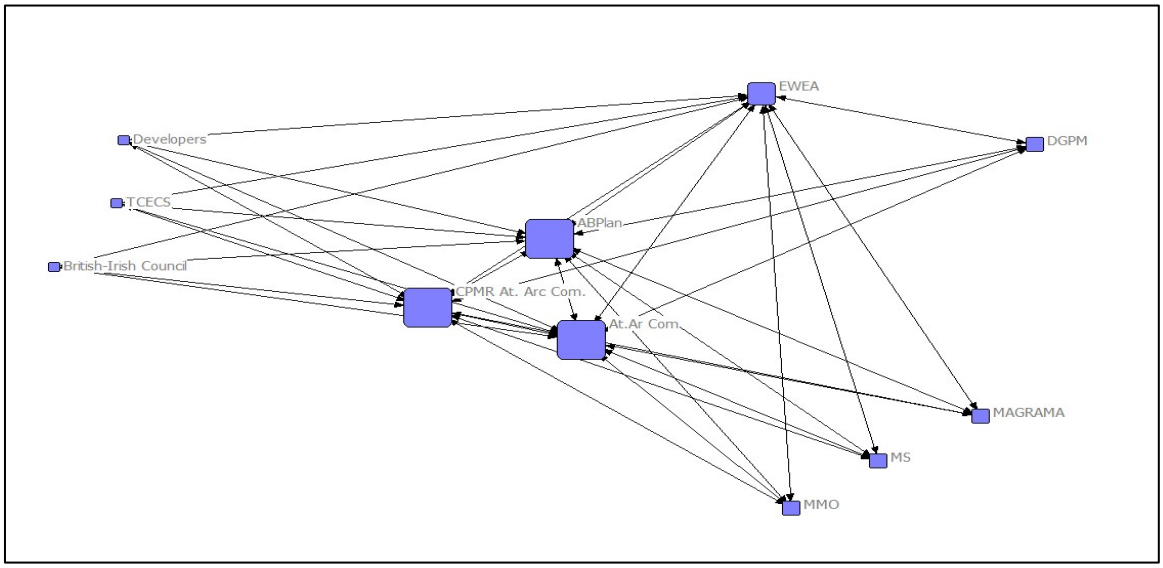
12.4. Organisation of stakeholders

Baltic Sea

In **Germany** as well as in **Sweden**, the OW commercial businesses are few large organisations operating on the EU level. On the other hand, the stakeholders representing the tourism sector are few local boat tours operators, usually connected by the local tourist information center. In Sweden local municipalities are in some cases strongly clustered through joint strategies and spatial plans development, and often also having strong support from regions.

12.5. Sea basin stakeholder network analysis

Eastern Atlantic



Picture 21. Stakeholder network in the North Sea

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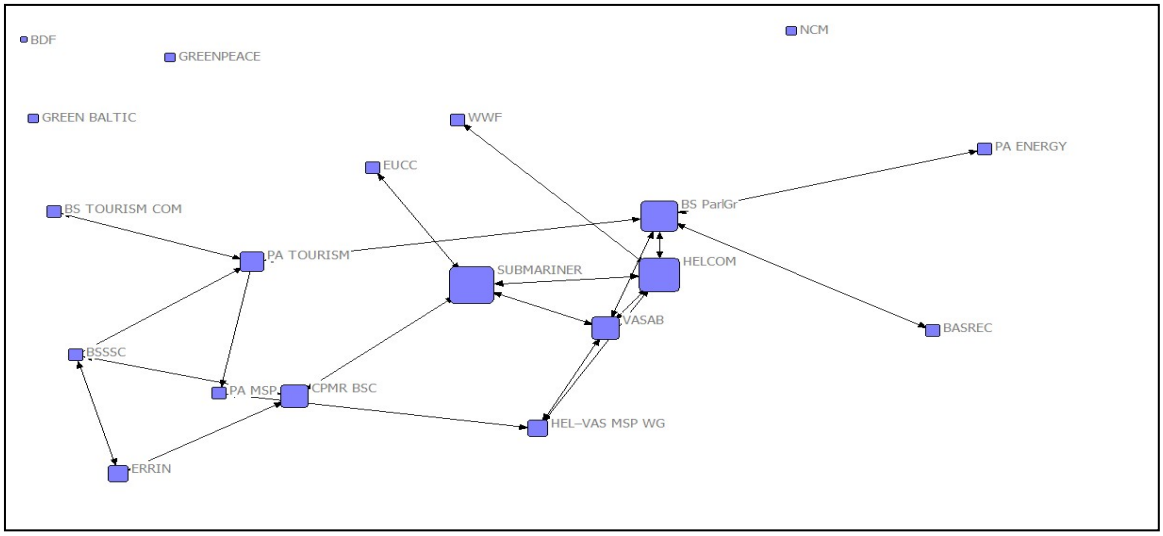
Illustration of the stakeholder network structure of North sea stakeholders related with the MU OW and tourism (picture 21), shows a dominance of the international, sea basin level stakeholders. While, from the sectoral point of view, considering the structure and distance of the stakeholders from the central roles, more influence on the decisions may rest with stakeholders from the energy sector, whose relations appear stronger with key actors than tourism sector representatives.

Baltic Sea



Picture 22. Stakeholder network in the Baltic

From the structure of the network for the Baltic Sea stakeholders (picture 22) dominance in the development of the MU combination OW and tourism have stakeholders with the policy and planning role. Representatives of the sectors (e.g. BS Tourism, P Tourism, PA Energy) are marginalised and mostly have indirect communication (via BS Parliament and SUBMARINER) with the sea basin policy making stakeholders (e.g. HELCOM and VASAB).The lack of commutation and relationship between NGOs and central planning and policy making actors could also be observed from the structure.

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13. AQUACULTURE AND ENVIRONMENTAL PROTECTION

Table 9. Relevance of the aquaculture and environmental protection MU combination in the EU sea basins/countries

Aquaculture and Environmental Protection												
Sea basin	Eastern Atlantic			Mediterranean						North Sea		Baltic Sea
Country	IE	FR	ES	MT	IT	GR	FR	ES	SI	BE	DK	LV

13.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In **Spain (Atlantic)**, it is clear that aquaculture stakeholders along with the Environmental Protection stakeholders are in favour of this MU. The aquaculture intermediary may be an important promoter of the MU because it represents a large number of companies for the offshore aquaculture at the national level, having an active role in the promotion of the sector at different scales. Environmental stakeholders, although driving forces for this MU, need to establish a strong dialogue with the aquaculture sector, especially environmental NGOs. Policy-makers developed the Strategy for sustainable development of Spanish aquaculture 2014-2020, aiming at establishing guidelines and strategic actions to develop a sustainable aquaculture, which may reinforce synergies between the two sectors and promote the MU.

In **Ireland**, for the majority of stakeholders overall attitude towards MU is 'positive', as it appears from funds provided for sustainable aquaculture projects (EC EMFF) and innovation and environmental sustainability. For the environmental services stakeholder(s), thorough and strenuous assessments would be required from regulators, therefore their attitude to the MU is considered 'negative but can positively influence barriers'. Aquaculture in RoI is to a large degree certified as organic, thus relevant certification societies would have a 'positive' attitude to the MU. For cross sector stakeholders, overall attitude is generally 'positive'. Cross sector regulators would require thorough environmental assessments for the MU and thus they have been classified as 'negative but can positively influence barriers'.

In **France (Atlantic)**, aquaculture has a strong expression on onshore areas and is spreading or planned in offshore sites. Some of the new-planned sites are combined with MPA and the national public agency is driving forces for this MU. Policy-makers are driving forces to this MU generally by creating legislation such as the Multiannual National Plan for the development of sustainable aquaculture 2014-2020, which focus on the production of a high environmental quality, and strengthening the control of health risks. The National Strategy for the Management and Creation of Marine Protected Areas is also a strategic document that may contribute to the MU development.

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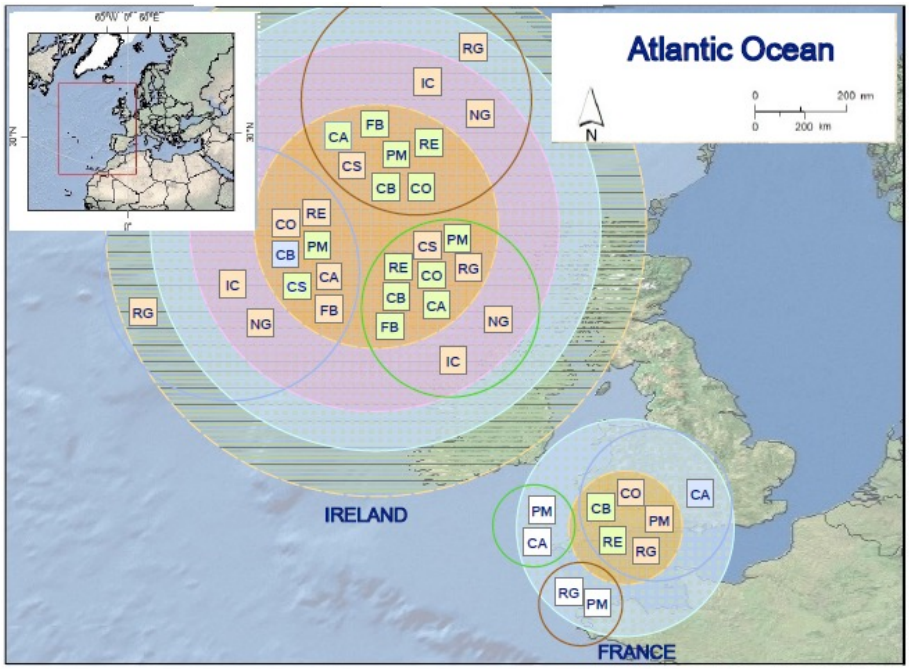

Picture 23. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Environmental Protection in the Eastern Atlantic Sea Basin

North Sea

In **Danish North Sea,** the Natura 2000 areas host the existing mussel farms and seaweed farms functioning as "hanging" reefs (gardens), represented by local recreational associations. Given its nature this MU is not being expanded to a commercial scale in its current location, but rather the experiences gained from this area can be shared and good practices adopted in other areas/countries. The EU funding bodies and research institutes could have a strong role in this regard.

In **Belgium**, the Ghent University is very active and interested to develop knowledge on how to combine coastal protection infrastructures with biodiversity enrichment and nature conservation. Testing and developing such knowledge in the Belgian North Sea, could also be interesting to (commercially) exploit in other countries. The strong academic/research sector in the field of aquaculture in Belgium is, herewith, a driving force for MU in the Belgian North Sea. Moreover, dredging companies in Belgium are interested and proactively promote the application of multi-use coastal defence projects via the Blue Cluster. For these stakeholders, this is presents an interesting business development opportunity.

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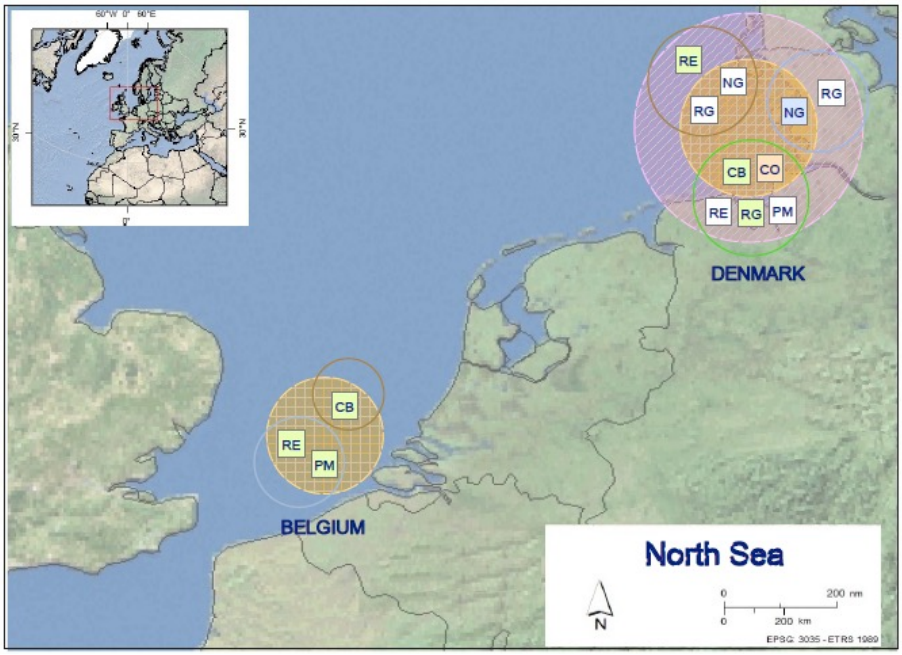

Picture 24. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Environmental Protection in North Sea Basin

Mediterranean

In **Greece,** The cross-sectoral stakeholders for this MU are policy makers and classification societies. The first have a positive attitude, while the second have a neutral attitude towards this MU. Categories of stakeholders related to environmental protection are business support – consultancies, policy makers, NGOs and other intermediaries representing society at large. Consultancies have a negative attitude with the potential to influence positively; this is based mainly on the fact that the consultants expect proof of low to no environmental impact from aquaculture activities in order to support/promote this MU. Policy makers were neutral while NGOs were negative. Research organizations and policy makers related to the aquaculture sector have a neutral to positive attitude towards the MU. The attitude of commercial business and intermediaries from aquaculture sector is unknown due to the fact that the first were proactive but did not gave further input while the second were dormant

In **Malta**, the overall impression is that there is a positive attitude towards this MU especially from policy makers who operate at the national level. This conclusion however may not be accurate since half of the stakeholders approached are dormant.

In **Slovenia** aquaculture *commercial business* operators are those stakeholders most potentially interested in MU challenges. The coastal FLAG, which brings together a wide range of local actors (fishermen, marine aquaculture workers, municipalities, scientists, institutions, NGOs and individuals) and the Regional Development Centre of Koper (RDC Koper), can play a role in MU

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development as *business- support consultancy*. Although not expressly known for this specific combination, a positive interest in MU of this stakeholder category can be deduced from the positive experiences with the combination of aquaculture and tourism. *Regulators* and *policy makers* both for aquaculture and environment (the Ministry of Agriculture Forestry and Food, the Directorate of Forestry, Hunting and Fisheries of the same Ministry, the Ministry of the Environment and Spatial Planning, the Slovenian Environment Agency) are assumed to have a positive attitude toward MU: they can act as positive drivers promoting MU development, even if no real experiences for this combination have been encountered yet. Within European Fishery Fund, productive investments in aquaculture are being implemented, with a special attention to the issue of environmental protection. The competent authority for Maritime Spatial Planning is the same also for environment and can help overcoming the conflicts among aquaculture and the different economic activities, also by developing MU. *Research organizations* can provide knowledge to properly address MU potential and remove possible barriers to its development: a positive attitude can therefore be deduced for them, also if not expressly known. A positive attitude towards MU can also be deduced for *funding bodies* (EAFRD, ERDF and EMFF), considering their objective to promote cooperation and integration of aquaculture sector with other sectors, such as tourism, culture etc. (Community Lead Local Development approach CLLD). In Slovenia, a Consortium of *NGOs* dealing with the environment collaborates with the Ministry of the Environment and Spatial Planning, through the constitution of the "Environment Centre".: they can provide a space of dialogue, connecting people and disseminate information and they can act removing existing barriers to the development of MU.

In **Italy** we can assume that the key actors identified for this MU have in general a positive attitude due to the increasing demand for high quality seafood. This MU can indeed provide additional income opportunities, new specialized/skilled job profiles and new environmental benefits (eco-tourism). Companies providing consultancies on the environmental protection theme can have also positive attitude, favouring the permitting process and promote acceptance by local administrations and local communities, and therefore valorise their consultancy. Research organizations are considered to positively benefit from this MU development, since it implies the research in novel areas, such as new suitable areas for aquaculture activities (shellfish farms) and investigation on high biodiversity areas. Interviews with local stakeholders underline that regulators can be slowed down by the absence of a clear/smart regulation in terms of implementation and monitoring. Policy makers are considered to act as a negative barrier for the development of the MU, as interviewees have pointed out the lack of guidelines/regulatory aspects. Funding bodies act also positively, providing financial support for the development of this MU (through the European Fisheries Fund, which funds sustainable development of fishery, thus including an environmental protection approach, other EU specific funding programmes on environment, such as LIFE, MED, Regional Operational Programs and National Operational Programs for protected areas). There are also NGOs and environmental associations potentially acting positively towards this MU, as far as this MU can increase sustainability, reduce impacts, increase acceptance in coastal communities.

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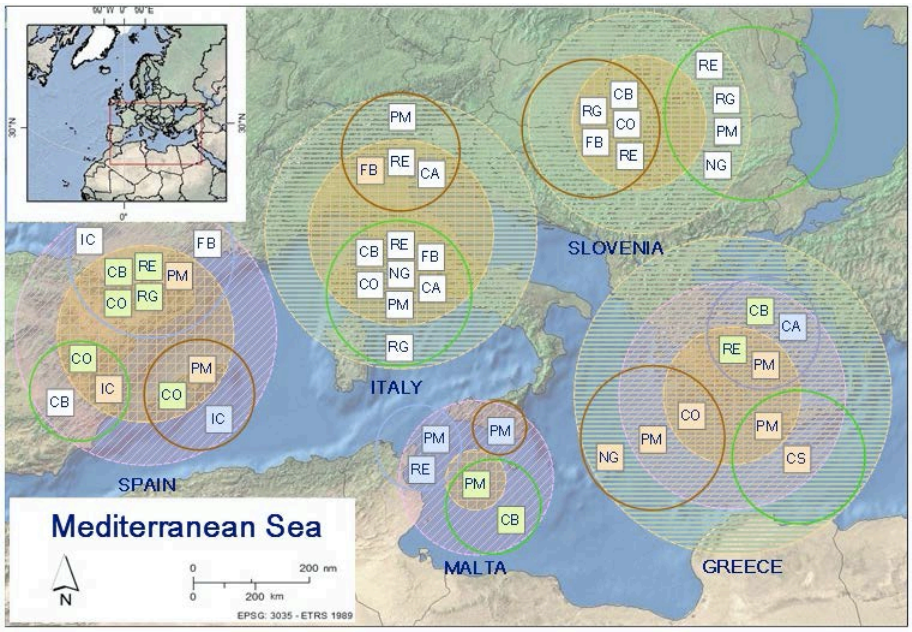

Picture 25. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Environmental Protection in the Mediterranean Sea Basin

Baltic Sea

The positive impact from certain types of marine aquaculture on status of the environment was reflected from research stakeholders in **Latvia**. Moreover, the main research institute has been involved in implementation of cross-border cooperation projects for a testing phase of aquaculture's ability to counteract eutrophication, and vice versa.

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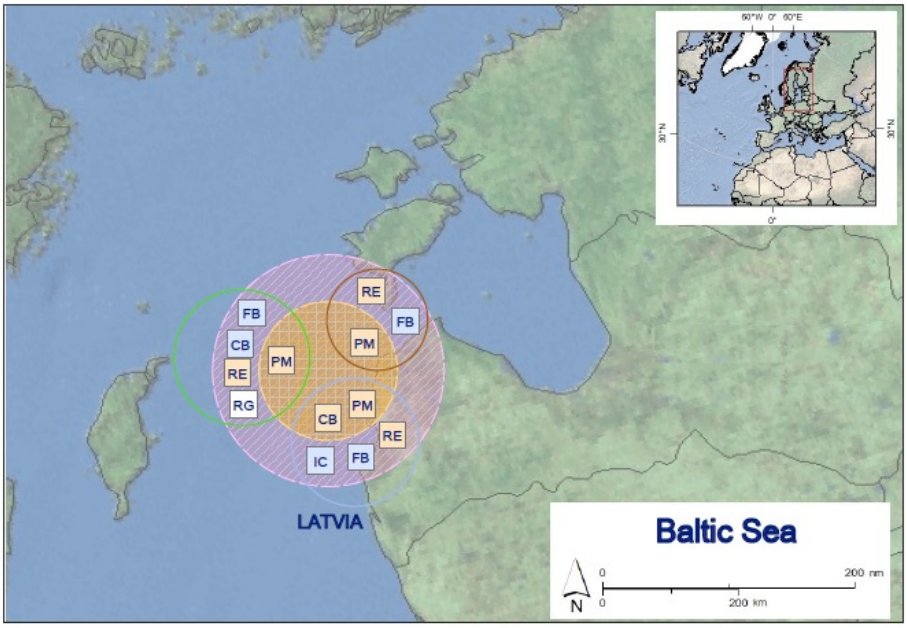

Picture 26. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Environmental Protection in the Baltic Sea Basin

13.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

Aquaculture in **Spain (Atlantic)** is a competence of the autonomous regions, being coordinated at the national level by the competent minister. Commercial business of aquaculture ranges from local business to companies spread in the European context. Aquaculture intermediaries and consultancies mainly act at the national level though. Environmental Protection stakeholders operate mainly at a national level, both the minister competent of the protection of the marine environment and NGOs representing society.

In **Ireland**, for commercial businesses and business support, scale of power is 'national'. For regulators and policy makers, scale of power is 'national' because that is their level of jurisdiction. For classification societies and insurance companies, geographic scale would be that of their clients, mostly national. Research organisations have an 'EU' scale (e.g. MARIBE). For the MU NGOS/society representatives have a 'local-regional' scale, overlapping with the MU development geographic extent. Cross sector commercial businesses and NGOs would also have a 'local-regional' scale.

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North Sea

Stakeholders in **Denmark** relevant to this MU are mainly on the local level. Local associations are the ones driving this MU, while those administering the aquaculture licenses are also on the local level. However, the national authority does designation of Natura 2000.

With **Belgium** being home to some of the biggest dredging companies globally, the stakeholders that most actively advocate this MU in the country are global-level players.

Mediterranean

In **Greece,** as well as in **Malta**, the majority of identified stakeholders operate at the national level.

In **Slovenia**, aquaculture *commercial business* can play a role essentially at local level because they are not organized in clusters or associations but are characterized by small self-employed family farms. The regional Development Centre of Koper and the coastal FLAG of Slovenia can be considered as *business-support consultancies* for the sector; they are the only organizations, which can represent aquaculture commercial business at national or regional level. *Regulators* and *policy makers* for aquaculture and environment are national level bodies (Directorate of Forestry, Hunting and Fisheries within the Ministry of Agriculture Forestry and Food and the Ministry itself for aquaculture; the Ministry of the Environment and Spatial Planning and the Slovenian Environment Agency for environment). *Research organizations* consist of individual organizations dealing with aquaculture and/or environment, with no leading research institution: they act at national/international scale. *Funding bodies* can mobilize funds at national and regional/local level. *NGOs* are strongly clustered and act at national scale.

In **Italy,** the stakeholders identified for this combination, have the power both at local and national scale, sometime at international scale (mainly as far as concerned environmental protection). Consultancies organizations in particular (e.g. cooperatives and SMEs) mainly work at local/regional scale (cooperatives and SMEs) but also national (research institutes) with international relationship. Regulators act at local/regional scale, while policy makers at the national level. Funding bodies (mainly through EFF, LIFE, MED, Regional Operational Programs and National Operational Programs for protected areas) act both at EU level and local scale. In addition, FLAGs implement a bottom-up participatory strategy addressing the stakeholder's economic, social and environmental needs at a local, national and international level.

Baltic Sea

Key actors, relevant for the MU combination in **Latvia,** are representatives of the research organisations and policy makers thus the geographical scale of power mostly cover national level as well as local scale.

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13.3. Type and level of power

Eastern Atlantic

The environmental policy-maker in **Spain** has power to control and make decisions on Environmental Protection competences. However, NGOs in this sector integrates an international organisation with power to influence decisions

In **Ireland**, regulators and policy makers have a 'power to control and make decisions' ('strong') through leasing, licensing and policy development Commercial businesses (investment capital/technology), business support and funding bodies have a 'power to influence directly' ('strong'). Classification schemes would be fundamental for the specific MU, thus relevant societies have the 'power to control and make decisions' ('strong').For NGOS/society representatives, their 'type of power' is 'power to influence directly' ('medium') since they could influence substantially the MU. Research organisations have a 'power to influence indirectly' ('medium'), through key research findings, publications on the topic etc. Cross sector funding bodies (e.g. INTERREG, LIFE funds) have 'power to influence directly' ('strong') the development of the MU commercial businesses, business support and NGOs have a 'power to influence indirectly' ('medium') the development of the MU.

North Sea

In **Sweden,** in general, local societies have power to influence decision makers on the local municipal level. The strongest decision making power in relation to this MU have the municipal authorities. Relevant role in transferring this good practice to other regions have research institutes and EU funding bodies.

Mediterranean

For this MU the most prevalent stakeholders in **Greece** are the policy makers who have monopolistic organization and strong power to control and make decisions in relation to this MU development. NGOs with also monopolistic organization have medium power to influence directly, while eenvironmental consultancies are strongly clustered but have overall low power.

In **Slovenia**, aquaculture *commercial business* can positively influence MU development (medium level of power) via the Slovenian FLAG that can actively promote MU initiatives (medium level of power), managing a quote of the European Fishery Funds. National *regulators* and *policy makers* define regulation for the protection of the environment, including criteria for the access to protected areas, and can therefore play a role (strong level of power) in removing barriers to this combination of MU. Being the competence on Environment and MSP joined under the same institution, this can positively act removing barriers for this specific MU (strong level of power) due to its role in solving

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conflicts among protected areas and other maritime uses (aquaculture sites, touristic exploitation etc.). Regulators and policy makers under aquaculture have the power to adopt the Common Fisheries Policy (CFP) and assign the national directives, so they have a strong power on influencing MU development considering the aquaculture sector. *Research organizations* can support MU development by providing expert support to the sector ministries and they can indirectly influence decision on national fisheries policies. Their level of power is probably low, considering that national fisheries and aquaculture policies are driven by multiple interests and actors. *Funding bodies have the* power to directly influence MU initiative addressing specific funds (strong level of power as they can fund initiatives of MU). *NGOs* can indirectly influence decision on national environmental policies, since they are constituted under a unique Consortium collaborating with the Ministry of the Environment and Spatial Planning. Their level of power is not known, probably low.

In **Italy** we can assume that all the actors of the seafood market chain have strong power, since they provide the knowledge of the resource and they represent the key actors in the fishery chain for the national economic income. They are considered to have the power to influence directly fishery policy, addressing funds and projects (e.g. Structural Funds, Interreg Funds, EMFF funds), shaping investment projects and influencing permitting processes and results. Consultancies organizations working on fishery-aquaculture topic (e.g. cooperatives and SMEs) are considered to have the power to influence directly fishery policy since are mainly local private stakeholders interested in receiving and income from this sector. On the other hand, consultancies societies on the environmental protection topic are assumed to have low power in influencing the policy. We can consider that Universities and National research organizations (depending both from the Ministry of Education, University and Research and the Ministry of the Environment) have medium power to influence directly regulations, as they provide the basic scientific knowledge about MU added value and support the development of MU initiatives. Policy makers have strong power to control and make decisions, implementing the Common Fisheries Policy (CFP) and other international policies (e.g. FAO-GFCM). Concerning environmental protection, the Ministry of Environment, Land and Sea is responsible for Protected Areas authorizations. Thus they have strong power in controlling and making decisions. Funding bodies (e.g. the General Directorate for Marine Fisheries and Aquaculture and the Ministry for University and Research at the national level, mainly through the European Fisheries Fund at the EU level) are considered to have strong power as they fund the development of this MU at the whole EU level. In addition the Italian Aquaculture Associations are assumed to have a strong power to influence directly the policy and the funding programs, acting at different level and type of stakeholder profiles. NGOs and environmental associations are finally considered to have strong power as they act at different level and type of organizations. They indeed can influence directly decision makers and possible investments for the MU development.

In **Malta,** all types of stakeholders I.e. commercial business, ppolicy makers, research organisations are all monopolistically organised. Policy makers have strong power to control and take decisions while the rest have low to medium power to influence the MU indirectly.

13.4. Organisation of stakeholders

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Eastern Atlantic

In **Spain (Atlantic)** the aquaculture sector has a strong cluster organization while Environmental Protection decision-making and control is centralized (monopoly) at the national minister. The environmental NGO, although national, is integrated into an international NGO.

Mediterranean

In **Slovenia** aquaculture commercial business operators are mainly individual small self-employed family farms, which are represented by the coastal Slovenian FLAG and the Chamber of Agriculture and Forestry of Slovenia. Research organizations on both aquaculture and environmental protection are individual bodies. Regulators of aquaculture sector and environmental protection sector are mainly individual public administrations, belonging to the competent ministries (the Directorate of Forestry, Hunting and Fisheries within the Ministry of Agriculture Forestry and Food for aquaculture and the Slovenian Environment Agency within the Ministry of the Environment and Spatial Planning). The main ministries/policy makers, acting as individual bodies, involved in the aquaculture and environmental protection activities are the above mentioned ministries. The regional Development Centre of Koper (RDC Koper) also acts as an individual institution at the regional level supporting policy makers and promoting business and economic development. EU Funding bodies (EFF-EMFF, INTERREG, MED, Italy-Slovenia etc.) act as individual funding organizations. NGOs and other associations act as individual organizations operating at different levels. The environmental protection NGOs are characterized by a strong clustering organization: a Consortium of five NGOs dealing with the environment collaborates with the Ministry of the Environment and Spatial Planning, through the constitution of the “Environment Centre”.

In **Italy** the Regions are local individual organizations/ administrative office coordinated by the central public administrations, which are represented by the ministries (the Ministry of Agriculture, Food and Forestry Policies and the Ministry of the Environment). FLAGs and the newly constituted National Technological Cluster on Blue Growth are strong clustering bodies well locally assembled. In general commercial business organizations, societies providing consultancies on aquaculture and environmental protection topics, research institutions, NGOs can be all considered individual organizations, acting at different level and with several coordination mechanisms (e.g. Ministry for University and Research, Consortia of Universities, National Research Council, National Cluster). Some organizations are very distributed on territories and operate at local level. EU Funding bodies, as well as national and regional funds act also as individual organizations.

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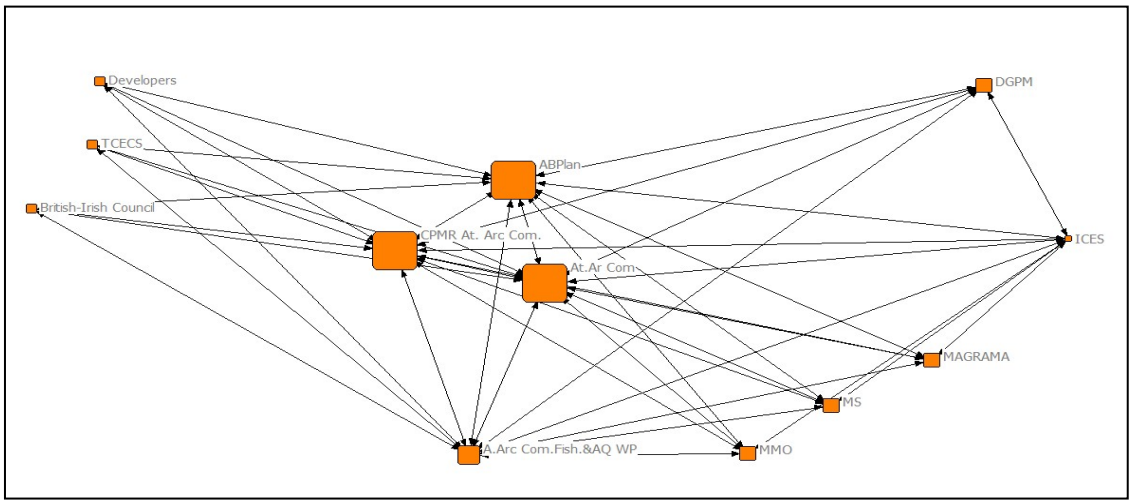
13.5. Sea basin stakeholder network analysis

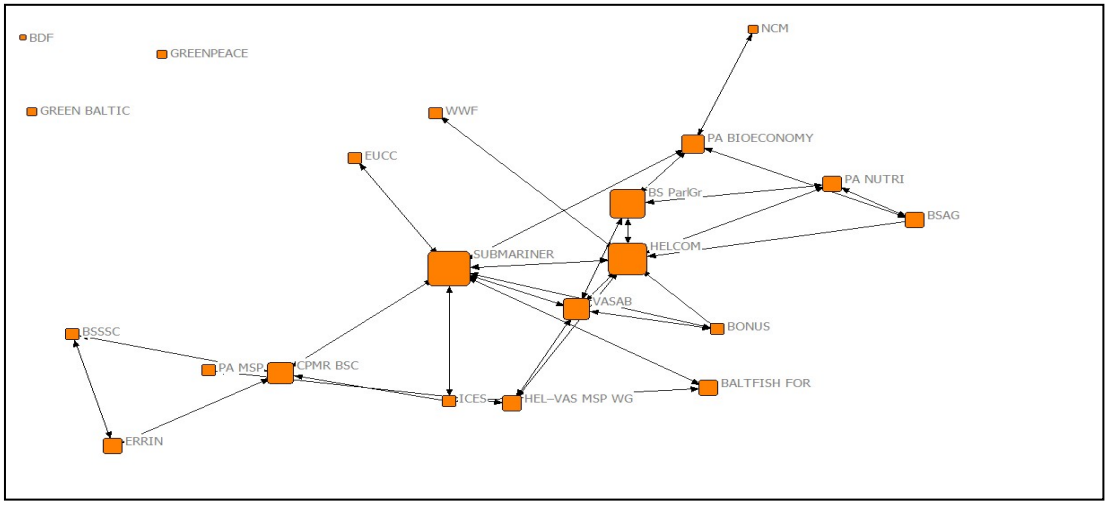
Eastern Atlantic



Picture 27. Stakeholder network in the Eastern Atlantic

Picture 27 illustrates the Atlantic network structure for stakeholders' recognised as important for the MU combination aquaculture and environmental protection. The graph illustrates a well-linked and coherent network with existing links among all actors. This network has a number of the ties that holds with high degree centrality to Atlantic B.Plan, CPMR Atlantic Arc Commission, and Atlantic Arc Commission. This power signifies that these stakeholders can be trusted to use their links to diffuse information and potentially mobilize the group to action.

Baltic Sea



Picture 28. Stakeholder network in the Baltic Sea basin

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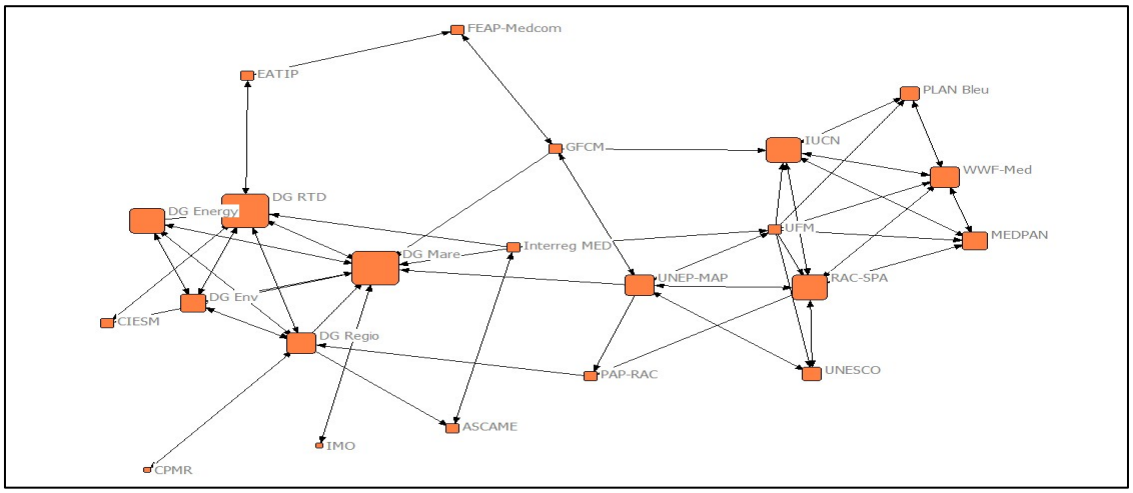
The relevant actors for the Baltic Sea basin (e.g. SUBMARINER Network, UNESCO, HELCOM, VASAB), can play a crucial role for linking sea basin and national stakeholders and providing a communication platform. On the other hand, isolated stakeholders (e.g. BDF, GREENPEACE, GREEN BALTIC) should be empowered so their voice is heard for the sake of reaching transparent and fair decisions.

Mediterranean



Picture 29. Stakeholder network in the Mediterranean

Visualised network structure of stakeholders related to the MU combination aquaculture and environmental protection in the Mediterranean Sea (picture 29), shows polarised groups of stakeholders whose role varies from the EU level policy maker (i.e. DG Mare, DG Energy, DG RTD), and close relationships between environmental protection representatives, such as MEDPAN, NGOs (i.e. WWF, IUCN)with RAC-SPA. The central position of the UNEP MAP indicates its importance in bridging these two groups and keeping the network cohesive. Nevertheless, UNEP's central role for the questions related to the environmental protection is not surprising due to its role and initiatives related to the environmental protection in the Mediterranean Sea.

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14. UNDERWATER CULTURAL HERITAGE AND TOURISM (ANDENVIRONMENTAL PROTECTION)

Table 10. Relevance of the Underwater Cultural Heritage (UCH) and Tourism (and Environmental protection) MU combination in the EU sea basins/countries

UCH and Tourism and Environmental Protection											
Sea basin	Eastern Atlantic		Mediterranean			Baltic Sea					Black Sea
Country	PT	ES	SI	CY	ES	DK	DE	EE	LT	FI	RO

14.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In **Spain (Atlantic)**, stakeholders are in general supporting this MU. Policy-makers responsible for UCH developed policy documents for the protection of UCH, which may raise synergies with environmental protection goals and tourism, promoting the MU. The National Plan for the Protection of Underwater Cultural Heritage and a Green Paper are examples of these. Tourism commercial businesses are driving forces for this MU, as they have an interest to generate economic value through sustainable use of natural and cultural resources. Regional and local policy-makers are also potential driving forces developing strategies and promoting the sustainable use of local resources.

In **Portugal**, both national policy makers for UCH and for maritime affairs are in favour of the development of the MU combination UCH and Tourism and Environmental Protection.

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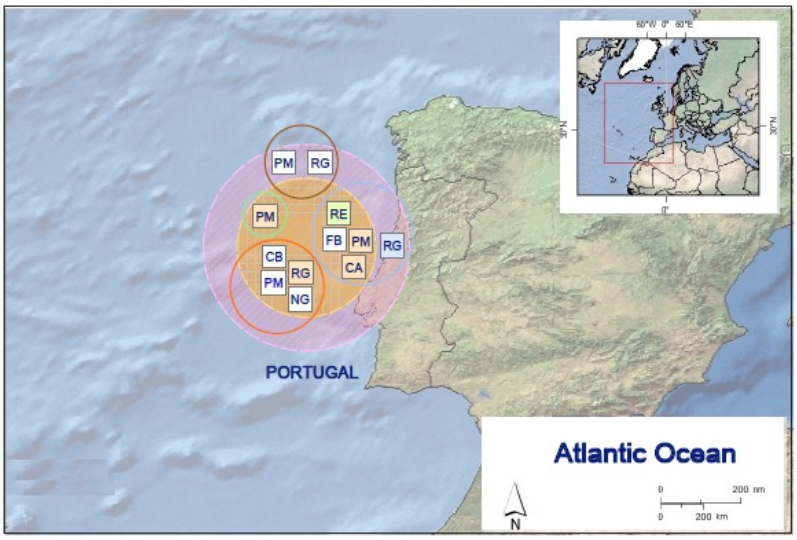

Picture 30. Stakeholders' relevance, activity and attitude in relation to the UCH and Environmental Protection and Tourism in the Eastern Atlantic Sea Basin

Baltic Sea

In **Finland**, there is an existing example of this MU combination in Kymenlaakso regional plan. This MU concept was handled through the regional planning process with guiding principles of the spatial planning to ensure protection of coastal and underwater habitats and UCH, while at the same time promoting nature tourism and recreational use of coastal areas.

Given the absence of this multi-use concept, knowledge on the national level of **Lithuania** is not available. The MU is concentrated in the researcher's community and has pilot concepts only and potential applications are the content of the latest and recently approved research projects. Nevertheless, reactive interests in the MU mean these stakeholders have a strong role in development of the concept.

The positive driving force for the MU combination in **Estonia** is good collaboration between organisations responsible for the environmental protection and tourism activity. Nevertheless, sustainable tourism, recreation and nature education activities in nature protection are aspects interpreted in the policies and strongly supported by the policy makers, which are responsible bodies to manage recreational activities within marine (protected) areas. The key actors involved, or actors that impose regulations are the Ministry of Culture and National Heritage Board that manage protection of UCH and diving to UCH, issuing permits. There are 15 companies that hold the activity licence for providing service of organising diving to UCH, including 13 Estonian, one Latvian and one Finnish company. Enterprise Estonia is giving support for business development; development of tourism products. There is an information exchange between diving clubs and National Heritage Board. Diving clubs participated in development of regulation of MU and also participate in joint projects with National Heritage Board.

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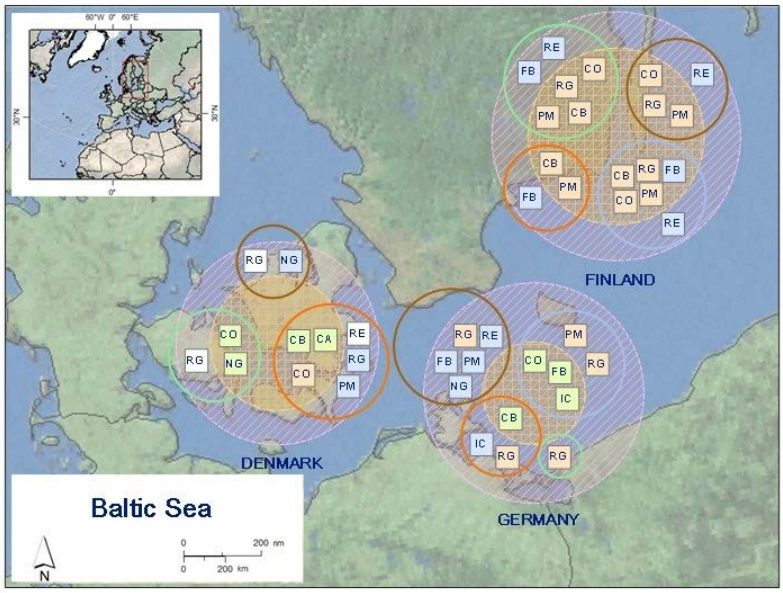
In **Denmark** the heritage sector has not collaborated with other sectors so far. According to interviews, strong legislation to protect UCH is in place and conflicts with nature conservation occur very rarely. Although there is an interest to find out more about MU opportunities and their benefits especially with the tourism and nature conservation sectors, no activities are planned inside archaeological authorities due to a lack of human resources and financial capacities. Here, projects like BalticRIM are seen as the main drivers to provide options, which can be taken up easily within the next five years.

In **Sweden,** there is high interest in MU and possibilities to create 'win-win-situations' for different sectors. Past research like in the project 'Coastal Futures' were dealing more with the management of different uses in the coastal area and how to engage stakeholders. Recently, active collaboration started with the tourism sector and research on MU between offshore wind farms and UCH is planned. Currently no agency, be it from UCH or planners side are able to put many efforts into MU.

In **Germany,** there is an average interest of archaeological agencies in MU, and the benefits of possible synergies with tourism and nature conservation are well known. The Federal State Archaeological Department of Schleswig-Holstein, for instance, is leading the BalticRIM project to support the MU idea. Also other federal agencies, which are responsible for UCH, see great potential in open-air museums or want to promote more actively the British approach of "Adopt a wreck" by fostering collaboration with scuba divers.



Picture 31. Stakeholders' relevance, activity and attitude in relation to the UCH and Environmental Protection and Tourism in the Baltic Sea Basin

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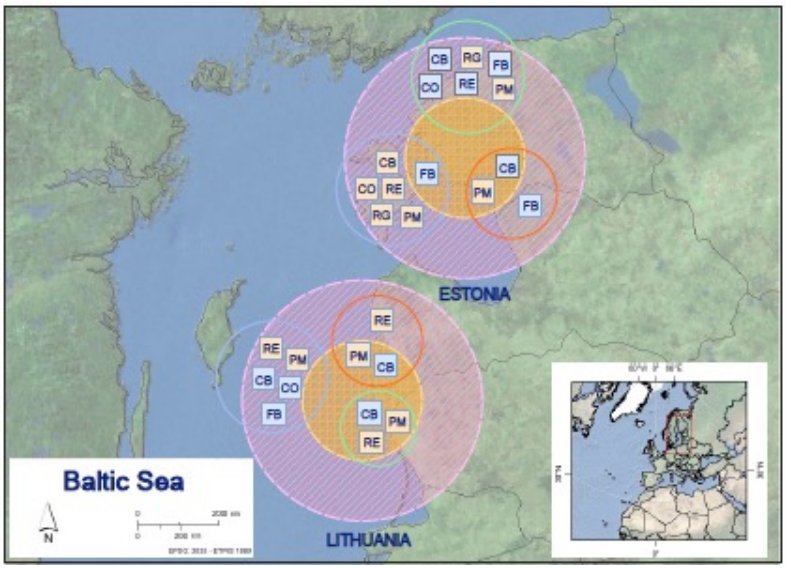
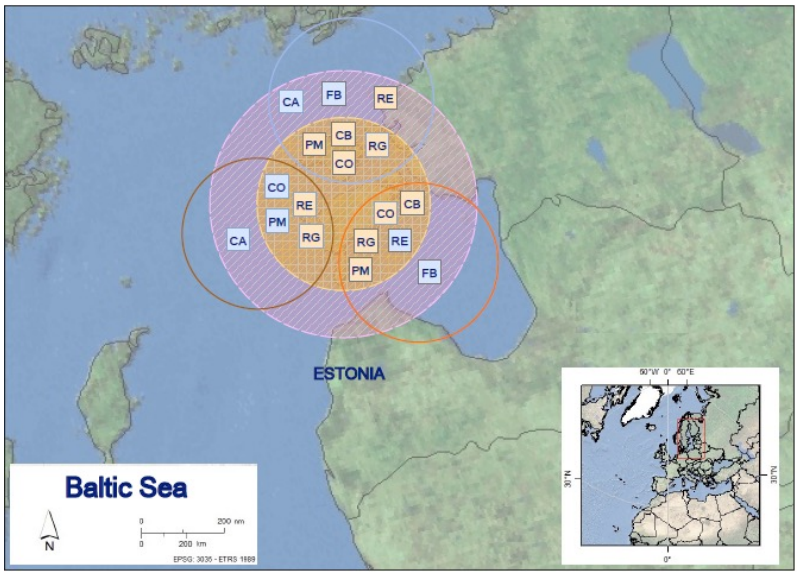


Picture 32. Stakeholders' relevance, activity and attitude in relation to the UCH and Tourism in the Baltic Sea Basin



Picture 33. Stakeholders' relevance, activity and attitude in relation to the Tourism and Environmental Protection in the Baltic Sea Basin

Mediterranean

In **Cyprus**, there is an overall positive attitude towards this MU although for the moment input for the UCH stakeholders is lacking. The UCH policy makers are considered to be dormant, and there is no clear picture about their attitude, organisation and power. UCH intermediaries are reactive and

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positive towards this MU. Cluster made out of environmental NGOs were reactive, with positive attitude towards the MU. Cross-sectoral research organisations and policy makers are proactive and reactive, respectively. Both have a positive attitude towards this MU.

In **Slovenia**, the attitude of tourism sector toward this MU is considered positive because the *commercial operators* can act on the drivers matching the increasing demand for a sustainable tourism. *Regulators and policy makers* of the tourism sector (Ministry for the Economic Development - Directorate for tourism and internationalization) are considered to have a positive attitude toward this combination: they can positively act on policy drivers for MU development, considering the high priority challenges for tourism development stated in the national Tourism Development Strategy. These challenges include the diversification of tourism offer, the protection of cultural and natural heritage and the development of sustainable tourism. On the other side, the current regulation on UCH significantly limits potential MU combinations, especially with tourism. The attitude of regulators and policy makers of UCH sector (Ministry of Culture of Slovenia -Cultural Heritage Directorate, National Institute for the Protection of Cultural Heritage) about this MU is not precisely known: they could act removing barriers for the development of MU initiatives involving UCH. *Research organizations* can provide knowledge to properly address MU potential and remove barriers to its development. A positive attitude can therefore be deduced for this stakeholder category, also if not expressly known. Considering *funding bodies*, INTERREG programs targeting the diversification of tourism offer, the promotion of sustainable tourism initiatives, the innovation in tourism sector (e.g. INTERREG MED, INTERREG ITALY-SLOVENIA, INTERREG ADRION) have a positive role toward this MU, because they can provide financial support for its development. *Classification societies* have interest in promoting a green label for touristic destinations and service providers; they can positively act on drivers. The National Tourist Association, a *non-governmental and non-profit organisation* of tourism sector, is active at national level, with a positive attitude toward MU: it can positively act on driving forces, due to its interest in promoting the market performance of tourism, the growth of the national income and the employment. It can have a positive role in increasing the awareness of the population toward green/sustainable destinations. A Consortium of *NGOs* dealing with the environment collaborates with the Ministry of the Environment and Spatial Planning: they can provide a space of dialogue, connecting people and disseminate information and they can act removing existing barriers to the development of MU.

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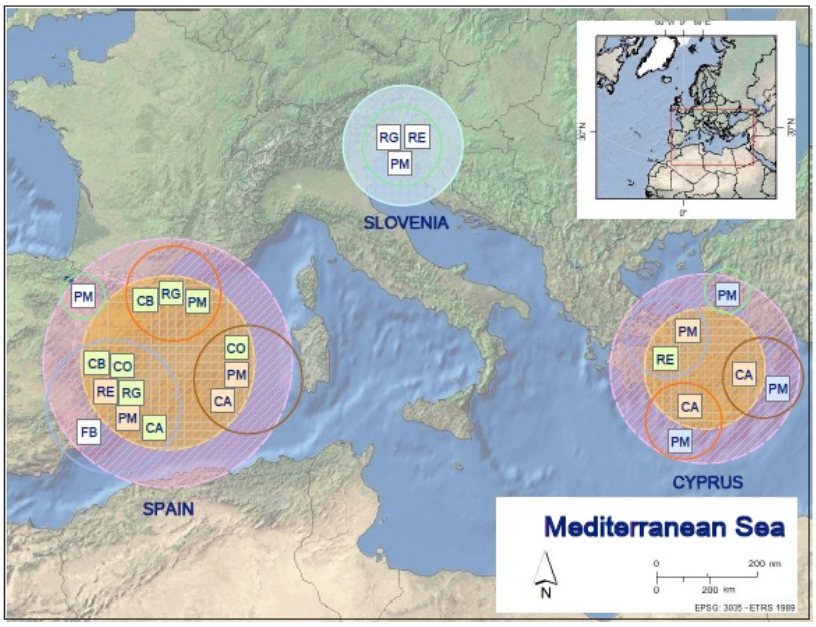

Picture 34. Stakeholders' relevance, activity and attitude in relation to the UCH and Environmental Protection and Tourism in the Mediterranean Sea Basin[28]

Black Sea

Policy makers in **Romania**, who are responsible for the national policy in the field of cultural heritage, provide the general framework on exploration, preservation and protection of Romanian cultural heritage. Research organisations such as institutes and museums are responsible for carrying out scientific studies and underwater explorations, and provide information about shipwrecks and other underwater relics. In general, they have a strong interest in developing this MU combination. In particular, one of the stakeholders provided valuable information about it. Scuba Diving companies could be regarded as a driving force for the co-existence of the two activities. They promote underwater diving near the Romanian Black sea coast, including exploration of ancient, medieval or more-recent remains of human civilization found on the seabed.

The overall attitude of stakeholders is positive because they act as supporting factors for this MU combination. There is a clear commitment by policy makers to protect and preserve underwater cultural heritage. The transparent work of research organisations when they find shipwrecks and other underwater relics also help for indicating spots of underwater cultural heritage suitable for diving. Promoting Romanian marine heritage by the museums also helps for development of this MU combination. National and international scuba diving companies create maps of suitable diving places, which is also beneficial for the joint implementation of these two activities.

[28]There is only one time visual representation of Spain, as the same pool of stakeholders have been identified for Spain in the Mediterranean and in the Atlantic.

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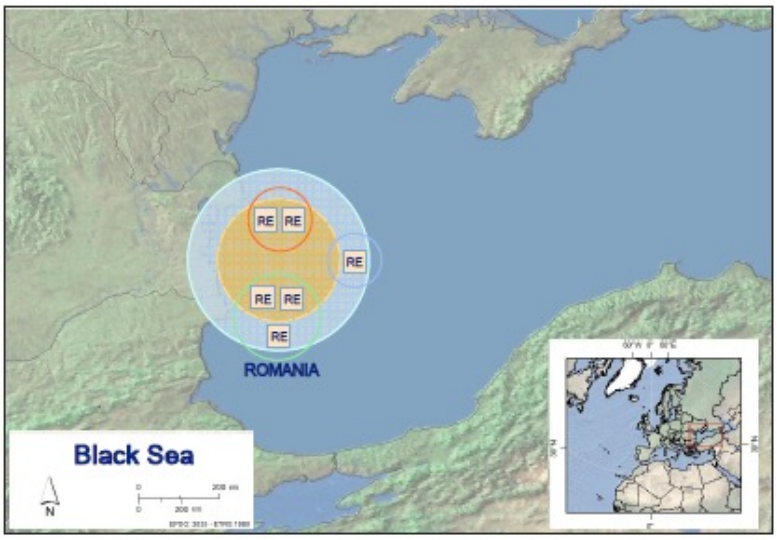

Picture 35. Stakeholders' relevance, activity and attitude in relation to the UCH and Tourism in the Black Sea Basin

14.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

In **Spain (Atlantic)**, tourism and business agencies as well as Environmental Protection have a high decentralised organization. UCH has a national strategy although a certain degree of regional power is present.

In **Portugal**, the tourism companies are more focused on a local/regional scale, while the other stakeholders are national.

Baltic Sea

In **Denmark** as well as in **Sweden** exists a very strong national authority for UCH, which is supported by several local coastal regional / federal administrations. The national authority for UCH in **Germany** is responsible for the Exclusive Economic Zone (EEZ) and has more political functions, i.e. to represent German interests related to UCH on a regional or international level. For the territorial waters the federal administrations are responsible. In **Finland**, the stakeholders identified to be relevant in the context of this MU, are planning authority on the national level, as well as military stakeholders. The stakeholders are found to have power on regional (local) and the national scale. The regional planning authorities work at local/regional scale; there are four planning areas, and planning is coordinated on a national level.

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Mediterranean

In **Slovenia** local tourism organisations acting at municipality level exist, as well as some tourism cluster associations at national level. Furthermore, small entrepreneurs in the sector of tourism are represented by various types of chambers. Tourism commercial business act at national and local level. The Slovenian Tourist Board (STB) is a national tourist organisation acting as *business-support consultant* for the tourism sector at national level and showing strong clustering capacity. Regulators and policy makers for tourism, UCH and environment are all national level bodies as mentioned above. Classification societies work mainly at national level. Research organizations consist of individual organizations dealing with UCH and/or tourism and/or environment, with no leading research institution; they act at national/international scale. Funding bodies act at EU level, cross-border level, sea basin level, sub-sea basin level. NGOs are active at national level.

In **Cyprus** all stakeholders that were not dormant are Intermediaries, NGOs, policy makers, research organisations and operate at the national level.

Black Sea

In **Romania**, policy makers have power at national level. Their acts and other instructions are applicable on the whole territory of Romania. The same could be said for the work of research organisations despite the fact that the most relevant are located in Constanta, at the Black sea coast. Their studies and research is of national (and international) relevance, and often cooperate with partners from Romania and abroad. On the other hand, the geographical scale of power of museums is "local or regional" because they mostly hold exhibitions of local/regional relevance (Constanta, Black sea, south-eastern part of Romania). Lastly, the activities of scuba diving companies are of national importance because they may attract tourists from all parts of Romania and from abroad.

14.3. Type and level of power

Eastern Atlantic

In **Spain (Atlantic)**, the three sectors are coordinated by the national ministers. However, autonomous regions have power to manage and control policies on Tourism and Environmental Protection. All the public institutions (national and regional) have strong power but stakeholders like the business community have a medium power of influence especially

In **Portugal**, In general, stakeholders in this analysis have power to control and make decisions. Tourism intermediaries can influence indirectly via the consulting mechanisms managed by regulators on the development and monitoring of this MU. Tourism companies that effectively could promote this MU have low power, as well as tourism intermediaries. The forum for maritime activities is stronger and could help on this process.

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Baltic Sea

In **Lithuania**, the role of relevant authorities; decision makers, are responsible for maritime planning, coordination and preparation of an Action Plan. They are also deal with the implementation and are directly responsible for sectoral regulations. Cross-sectoral cooperation related to MU is not present in Lithuania to date. There is no harmonization between sectorial strategic documents, as each of them addresses particular maritime issue (environmental protection, development of ports, transport policies, fishery, energy, tourism, coastal protection) and does not promote MU possibilities. In **Finland** relevant authorities are mostly on the regional level, due to existence of regional plans along the Finish waters, thus showing the possibility of regions to act as driving forces to the MU development. The most relevant for this MU combination are; regional council **(**Kymenlaakso regional council) as the main planning authority, city of Kotka, and regional development companies, commercial businesses and entities that own the military and other state-owned buildings on islands where MU applies (Senaatti KiinteistötOy).

In **Denmark** the Danish Board of Antiquities (Kulturarvstyrelsen) is the highest authority responsible for all Danish archaeology on land and under water; this includes the registration of the Danish cultural heritage on the seabed. Scuba divers who find a new wreck have to report it to this authority, which maintains the national wreck positions database. The Institute of Maritime Archaeology keeps the national wreck archives. Besides this institute in Roskilde, underwater archaeology is also administered locally by the museums in Bangsbo, Moesgård, Thorsminde and Langeland.

Along the **Swedish** coasts, about 10 000 ships are known to have sunk during the last 300 years. About 1200 have been found and registered in the national wreck register at the National Maritime Museum in Stockholm. This museum also investigates reported finds. The Swedish Authority for Antiquities (RAÄ) is the highest authority responsible for all archaeology on land and under water, conducting research and authorizing research investigating reported finds in Sweden. The field archaeology section is called RAÄ-UV. Wrecks older than 100 years (counting from the sinking) belong to the State and are automatically protected by Nordic Legislation and may not be touched. Additionally, a building contractor must have the site examined by archaeologists before starting to build, on land as well as under water. The RAÄ is supervising and implementing these laws, supported by the national maritime museums administrations and the Coast Guard. On a local level more than 70 county administrations (Länsstryrelsen) have full power to safeguard and register the UCH located in their territorial waters. However, there does exist a strong collaboration between national and local level.

In **Germany** the Ministry for external affairs is responsible for all UCH sites in the Exclusive Economic Zone (EEZ). In territorial waters the Federal States with coasts (Schleswig-Holstein, Lower Saxony and Mecklenburg-Western Pomerania) are supervising and implementing all UCH relevant legislation and administration. Legislation differs between the 3 coastal federal states of Germany, and authorities are independent of each other. The Federal authorities for UCH are strongly collaborating with topic-related museums like the German Shipping Museum in Bremerhaven or the German

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Commission for research scuba diving. Also universities are providing support and overtaking research tasks, which the administration is not capable to do due to a lack of capacities.

Mediterranean

Tourism *commercial stakeholders* in **Slovenia** have the power to influence indirectly the development of this MU, promoting alternative touristic offers, also through tourism *business-support consultancy* at national level (the Slovenian Tourist Board). This has a strong power to influence indirectly the development of this MU, mainly via the collaboration with national governmental institutions. *Regulators and policy makers* in all the involved fields (UCH, tourism, environmental protection) have a strong power to influence the development of this MU: influencing directly the policy of UCH protection and sustainable exploitation, promoting differentiation of tourism toward this combination, defining regulation for the protection of the environment, including criteria for the access to protected areas. Moreover, being the competence on Environment and MSP joined under the same institution, this institution can positively act removing barriers for this specific MU (strong level of power) due to its competence in solving conflicts among protected areas and other maritime uses (including touristic exploitation). *Research organizations* providing expert support to the policy makers can indirectly influence decision on national UCH policies and MU combination. *Classification societies* can also play an indirect role in MU development: the "Green label Slovenia" mark can act as promoter of sustainable tourism; being a marketing initiative. Its level of power can be assumed low. *Funding bodies* have the power to influence MU development directly, providing funds to diversification and promotion of sustainable tourism: this power is considered strong as they fund the development of this MU at the whole EU level. *NGOs* active on environmental protection and on tourism can indirectly influence decision on national environmental policies, through their respective collaboration with policy makers. Their level of power is not known, probably low.

In **Cyprus** research organisations and NGOs have low power to influence indirectly this MU, intermediaries have medium power to influence it directly and policy makers have a strong power to control and decide about this MU.

Black Sea

Only policy makers are regarded as actors having power to control and make decisions in **Romania**. They are behind the drivers that helped for development of UCH and Tourism. Their acts (administrative, regulatory, and legislative) and decisions are binding for all economic operators and citizens. The other stakeholders have power to influence indirectly via other, superior bodies. Research organisations could promote their interests (including removing or overcoming barriers) via policy makers or via local or national authorities (depending on the problem). The same applies to museums to the extent that (in most cases) they are subordinated to a superior policy maker and can promote their interests through it. Their level of power is medium because, for instance, decisions taken by research organisations or museums are relevant only for themselves and are not

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binding for other organisations or public authorities. Lastly, scuba diving companies (as commercial organisations) are a more dispersed community and for this reason their power is categorised as "indirect" They can influence decision makers either via local or national authorities or via branch organisations. Their power is also medium because they cannot force those who are not linked to their activities to stick to the decisions/rules their governing bodies have taken/adopted. Their rules are applicable only to those that go beneath the sea surface.

14.4. Organisation of stakeholders

Eastern Atlantic

In **Spain (Atlantic)**, there are several organizations related to Environmental Protection and to Tourism, and these present a lot of regional and local organizations. For UCH decision-making is concentrated in the Minister, although regional agencies and associations may influence decisions.

In **Portugal**, UCH and Tourism are controlled by policy makers and regulators organized on monopolies while the environmental issues are controlled by more than one public institution with different competences although inside the same minister.

Mediterranean

In **Slovenia,** touristic operators are clustered in associations at local level and at national level, representing the interests of their members (the Association of Slovene Travel Agencies, Association of Tourist Farms, etc.). Furthermore, small entrepreneurs in the sector of tourism are represented by (i) the Chamber of Commerce and Industry of Slovenia – Chamber of Hospitality and Tourism, ii) the Chamber of Craft and Small Business of Slovenia and (iii) the Trade Union for Tourism and Catering workers (Annual National Report to the European Commission -Slovenia, 2015). The Slovenian Tourist Board (STB) acts as the main tourist organisation responsible for development, promotion and marketing of the touristic destinations. Research organizations are individual research institutions (e.g. the Institute of the Republic of Slovenia for Nature Conservation and the National Institute for the Protection of Cultural Heritage) Regulators of UCH, tourism and environmental protection sectors are mainly individual public administrations, belonging or collaborating with the competent ministries (the National Institute for the Protection of Cultural Heritage, the Directorate for tourism and internationalisation within the Ministry for the Economic Development and the Slovenian Environment Agency within the Ministry for the Environment and Spatial Planning,). The policy makers are the main ministries involved in the MU sectors, such as the Ministry of Culture (Cultural Heritage Directorate) and the Ministry for the Environment and Spatial Planning. The regional Development Centre of Koper (RDC Koper) also acts as an individual institution at the regional level, supporting policy makers and promoting business and economic development. Concerning tourism, the Slovenian Tourist Board is the main classification society identified. It manages the "Green label Slovenia" a mark of quality used to indicate the compliance of destinations with requirements defined by the Green Scheme of Slovenian Tourism (GSST). EU Funding bodies (EFF-EMFF, INTERREG, MED, Italy-Slovenia etc.) act as individual funding organizations. NGOs and other associations act as individual organizations operating at different

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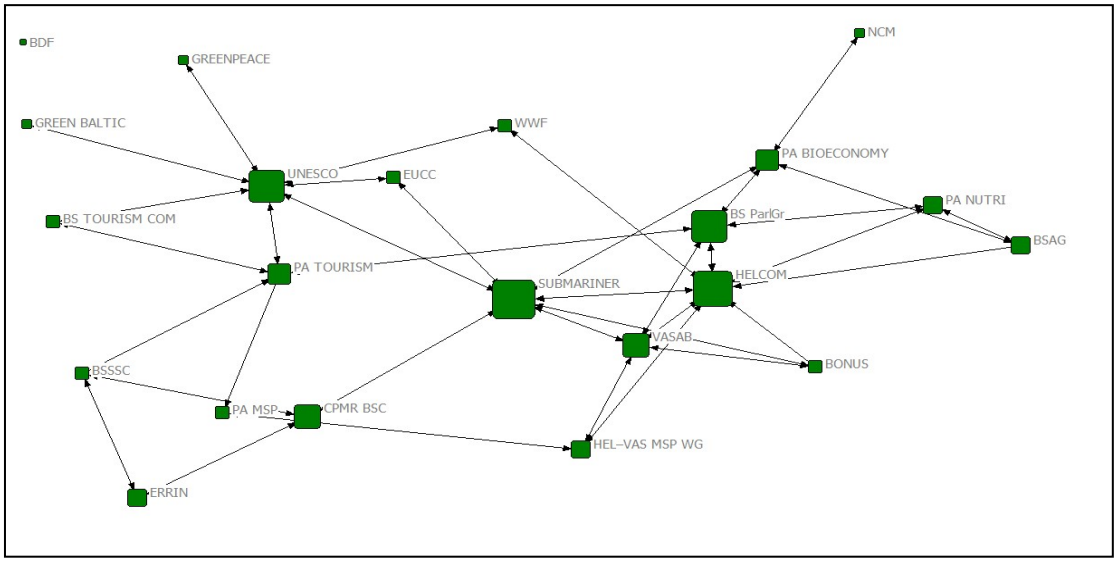
levels. The environmental protection NGOs are characterized by a strong clustering organization: a Consortium of five NGOs dealing with the environment collaborates with the Ministry of the Environment and Spatial Planning, through the constitution of the "Environment Centre".

14.5. Sea basin stakeholder network analysis

Baltic Sea



Picture 36. Stakeholder network in the Baltic Sea

Visualised network structure of the Baltic Sea stakeholders (picture 36)for the MU combination of UCH and tourism (and environmental protection) shows the most compact network when compared with the networks of other MU combinations in the Baltic (e.g. picture 6 and 22).Strong connection of the actors opens possibility for development of the MU combination. The most important actors that keep the network homogeneous are UNESCO, by linking tourism sector representatives and NGOs with the other centrally positioned actors (e.g. SUBMARINER) and policy makers at the sea basin level HELCOM and VASAB, likewise, BSR Parliament Group.

On the other hand, Baltic Sea Monitoring Group on Heritage Cooperation (established 1998) with its four subgroups is deepening the cooperation between authorities concerning the coastal and marine culture and its development and drawing more and more attention to the strategies for their sustainable use. Although many objects will remain in the so-called in-situ preservation to assure permanent protection, many of them shall be made more transparent using different forms of display. Until now the Monitoring Group supported the prohibition of CBSS nationals and ships flying member-state flags from interfering with historic wrecks and archaeological structures. However, new approaches entail the designation of mixed areas for shipping, UCH, tourism and nature protection. A new BSR Interreg project, BalticRIM (started in October 2017) will uptake these aspects

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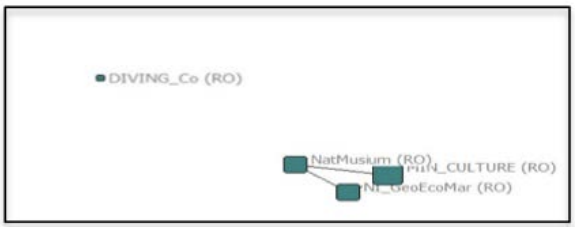
and is strongly supported by the Monitoring Group. Special attention will be given to the socio-economic value of coastal and marine culture, which entails the documentation of benefits for the local communities through a stronger collaboration between UCH and other sectors.

Furthermore, the 2013 Action Plan of the EU Strategy for the Baltic Sea Region (EUSBSR) comprises 17 thematic Priority Areas and 5 cross-sectional Horizontal Actions. The HELCOM-VASAB WG on the Horizontal Action "Spatial Planning" has strong interest to integrate PA Culture into MSP and to do research on possible MU approaches. Furthermore, UNESCO UNITWIN Underwater Archaeology Network, The Network of GAMA, different universities are working together on UCH issues and are starting to think of MU issues in the region, especially with a focus on tourism.

Black Sea



Picture37. Stakeholder network of the national stakeholders from Romania

In the picture 37 it is presented network structure of stakeholders recognised as important for the MU combination UCH, tourism and environmental protection for Romania. The structure implies that there is a need for further identification of the stakeholders who may link representatives from UCH (e.g. National Museum, Ministry of culture) with identified stakeholders from the tourism sector (e.g. Diving Companies).

15. AQUACULTURE AND TOURISM

Table 11. Relevance of the Aquaculture and Tourism MU combination in the EU sea basins/countries

Aquaculture and Tourism				
Sea basin	Eastern Atlantic	Mediterranean		
Country	PT	SI	IT	HR

15.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In **Portugal**, it is not clear if commercial business related to the aquaculture sector have positive or negative attitude towards MU. Desk research indicates a variety of Aquaculture related associations, with some presenting some level of combination on trophic levels, thus, pointing at an expectable

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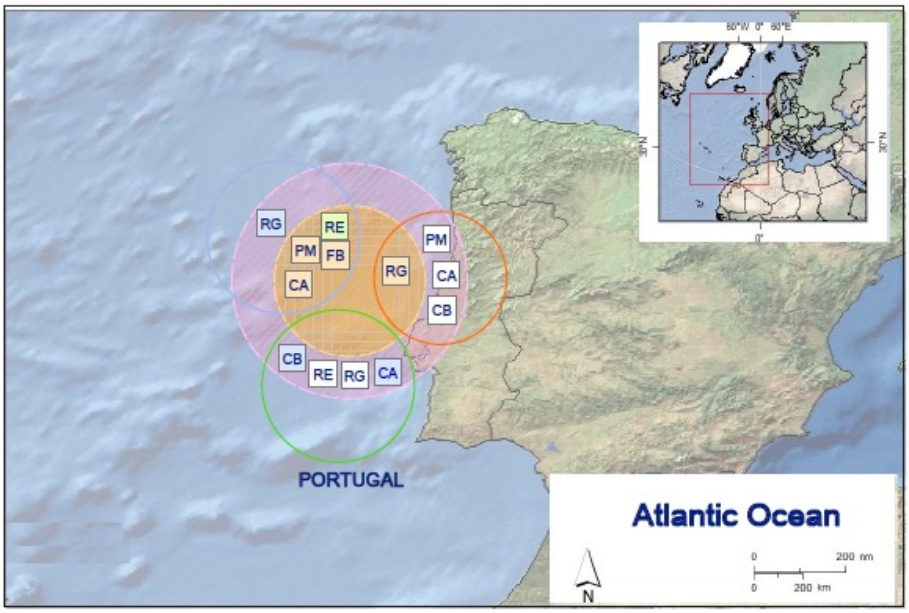
positive attitude towards MU. Additionally, there is a National Strategy for Aquaculture Development and an online Portal for all related issues. Both the policy maker for maritime issues and a forum with more than 125 members from different maritime sectors demonstrated positive attitude towards this MU.



Picture 38. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Tourism in the Eastern Atlantic Sea Basin

Mediterranean

In **Slovenia,** aquaculture commercial business operators represent the sector most potentially interested in MU development, particularly for the combination between aquaculture and tourism: positive experiences already exist at local scale. Commercial business operators of the tourism sector are considered to have a positive attitude toward MU, and particularly toward this combination: they can positively act on drivers matching the increasing demand for a sustainable tourism. Commercial operators are supported by the coastal Slovenian FLAG as business-support consultancy, also having a positive attitude for this combination, especially considering the national interest in developing green/sustainable forms of tourism. Regulators and policy makers of both sectors (the Ministry for the Economic Development and its Directorate for Tourism and Internationalization, the Ministry of Agriculture, Forestry and Food and its Directorate of Forestry, Hunting and Fisheries) are considered to have a positive attitude toward this combination: they can positively act on policy drivers for MU development, considering the high priority challenges for tourism development stated in the national Tourism Development Strategy. These challenges include the diversification of tourism offer, the protection of cultural and natural heritage and the development of sustainable tourism. Research organizations can provide knowledge to properly address MU potential and remove barriers to its development. A positive attitude can therefore be deduced for this stakeholder category, also if not expressly known. Considering funding bodies,

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INTERREG programs targeting the diversification of tourism offer, the promotion of sustainable tourism initiatives, and the innovation in tourism sector (e.g. INTERREG MED, INTERREG ITALY-SLOVENIA, and INTERREG ADRION) have a positive attitude toward this MU, because they can provide financial support for its development. Classification societies are also considered to have a positive attitude toward this MU combination, considering the interest in promoting a green label for touristic destinations and service providers. A non-governmental organization active in the country in the tourism sector has a positive attitude toward MU due to its interest in promoting market performance of tourism, growth of the national income and employment.

In **Croatia**, on the basis of desk analysis and stakeholder interview, we can assume that commercial business actors, consultancy organizations and regulators to have positive attitude towards this MU, as it represents an opportunity for new incomes and jobs, new environmental benefits (eco-tourism) as well as an opportunity to develop alternative/sustainable form of tourism. Local tourism organisations in particular are positively stimulated by the increasing demand for a sustainable tourism. The Croatian National Tourist Board (CNTB) is considered to have a positive attitude, especially considering the national interest in developing alternative/sustainable forms of tourism. Funding bodies are considered also to act positively, providing financial support (through the European Fisheries Fund) for the development of this MU. On the other hand policy makers can act as a negative barrier for the development of this MU, considering the lack of guidelines/regulatory aspects, as pointed out by interviewees.

In **Italy**, on the basis of desk analysis and interviews with local stakeholders, the key actors identified for this MU have in general a positive attitude, due to the increasing demand for seafood and the need to develop a sustainable tourism. This MU can indeed provide additional income opportunities, new specialized/skilled job profiles, new environmental benefits (eco-tourism) as well as an opportunity to develop a diverse tourism offer. Research organizations are considered to positively benefit from this MU development, since it implies the research of new suitable areas for aquaculture activities (fish and shellfish farms), as well as they can explore innovative business models. Interviews with local stakeholders underline that regulators can be slowed down by the absence of a clear/smart regulation in terms of implementation and monitoring. Funding bodies act also positively, providing financial support for the development of this MU (through the European Fisheries Fund and in particular INTERREG programs targeting the diversification of tourism offer, the promotion of sustainable tourism initiatives, and the innovation in tourism sector).

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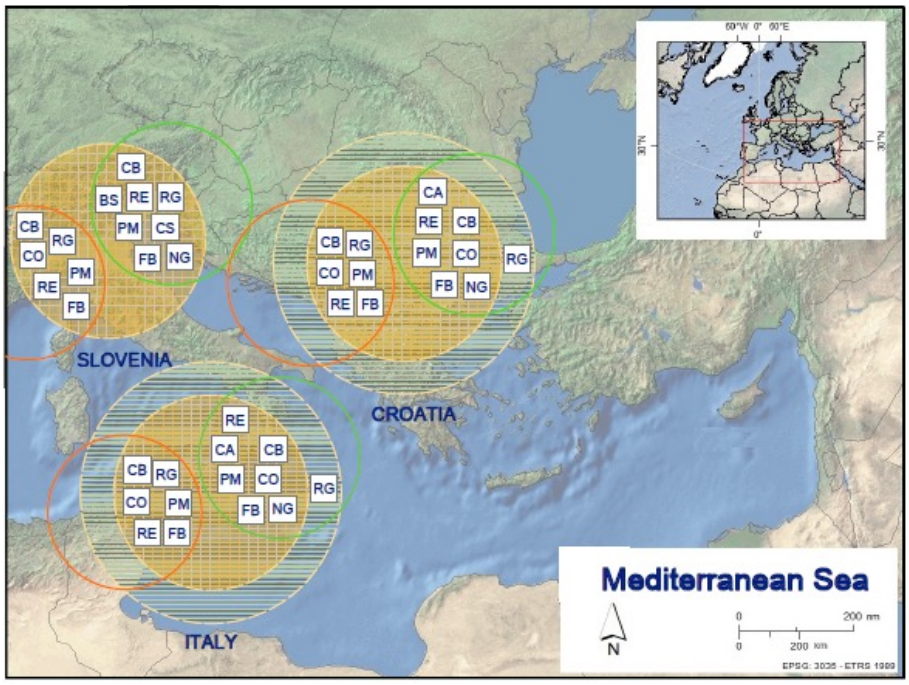

Picture 39. Stakeholders' relevance, activity and attitude in relation to the Aquaculture and Tourism in the Mediterranean Sea Basin

15.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

The aquaculture company contacted in **Portugal** to represent the aquaculture sector is relevant at a European scale; although Portugal does have many national companies. However, the tourism companies are more focused on a local scale, with a very geographically limited approach, as each region has its own Tourism strategic plan and a Regional Public agency. The policy makers, regulators, funding body and associations on the tourism sector have also a national Geographical scale.

Mediterranean

In **Slovenia**, aquaculture *commercial business* operators can play a role essentially at local level because they are not organized in clusters or associations but are characterized by small self-employed family farms. Instead, tourism commercial players are aggregated in local tourism organisations, acting at the municipality level, but some tourism cluster associations at national level also exist. Furthermore, small entrepreneurs in the sector of tourism are represented by various types of chambers. The coastal Slovenian FLAG plays a role as *business-support consultancy* for aquaculture sector acting at national level. The Slovenian Tourist Board act as business-support consultancy for the tourism sector at national level and shows strong clustering capacity. *Regulators*

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and policy makers both for aquaculture and tourism are national level bodies. *Classification societies* work mainly at national level. *Research organizations* consist of individual organizations dealing with aquaculture and/or tourism, with no leading research institution; they act at national/international scale. *Funding bodies* act at EU level, cross-border level, sea basin level, sub-sea basin level. *NGOs* in the field of tourism are active at national level and have a strong clustering capacity

In **Croatia** the majority of stakeholders identified for this MU, have a power at local scale. As far as concerned aquaculture activity, the focus is the Croatia islands, where the fish and mussels-farms already exist and where the need for economic development on the sector is pointed out, in line with the National Strategic Plans for fisheries and aquaculture development in the Republic of Croatia (2007-2013 and 2014-2020). FLAGs implement a bottom-up participatory strategy addressing the stakeholder's economic, social and environmental needs at a local, national and international level. Regulators act at local/regional scale (port authorities and the Institute for Spatial Development of the Koprivnica-Križevci county), while policy makers (the Ministry of Agriculture, Fisheries and Rural Development, The Ministry of Environmental and Nature Protection and the Ministry of Construction and Physical Planning)at the national level. Funding bodies (EFF, INTERREG programs etc.) act at EU level in a cross-border level, involving sea basin and sub-sea basin levels.

In **Italy** stakeholders identified for this combination have the power both at local and national scale. Consultancies organizations in Italy (e.g. Cooperatives and SMEs) mainly work at local/regional scale (cooperatives and SMEs) but also at national level (research institutes) with international relationships. Regulators act at local/regional scale, while policy makers at the national level. Funding bodies (through EFF, INTERREG programs etc.) act at EU level with a cross-border approach, involving sea basin and sub-sea basin levels. In addition, FLAGs implement a bottom-up participatory strategy addressing the stakeholder's economic, social and environmental needs at a local, national and international level.

15.3. Type and level of power

Eastern Atlantic

Since the aquaculture association in **Portugal** has not shown much interest on offshore aquaculture, it is hard to identify one stakeholder of this sector who could influence the others. While, at the same time, the large amount of individual tourism commercial businesses could only influence indirectly via the regional and national decision-maker and regulator within the scope of strategic plans. Only the public institutions have strong or medium power, the offshore aquaculture and tourism companies appear to be too small or have weak level of concentration/organization to have a stronger power.

Mediterranean

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In **Slovenia**, aquaculture *commercial business* operators can positively influence MU development (medium level of power) via the Slovenian FLAG that can actively promote MU initiatives (medium level of power) managing a quote of the European Fishery Funds. Tourism commercial business stakeholders have the power to influence indirectly the development of MU, promoting alternative touristic offers (medium level of power). The Slovenian Tourist Board act as *business-support consultancy* at national level and has a strong power to influence indirectly the development of MU, mainly via the collaboration with national governmental institutions, particularly with regard to this combination. Its level of power is considered strong, since it represents the main organization supporting the development of tourism in Slovenia. *Regulators and policy makers* of aquaculture sector have the power to adopt the Common Fisheries Policy (CFP) and assign the national directives, so they have a strong power on influencing this MU development. National governmental bodies of the tourism sector have the power to control decisions, being the responsible entities in the matter of tourism regulation, so they are also considered to have a strong level of power on MU development. *Classification societies* can play an indirect role in MU development: the "Green label Slovenia" mark can act as promoter of sustainable tourism. Being a marketing initiative their level of power can be assumed low. *Research organizations* can support MU development by providing expert support to the sector ministries and knowledge about MU added value: they can therefore indirectly influence decision but their level of power is probably low. *NGOs* have the power to influence indirectly MU development, through their active collaboration with the Ministry of the Economic Development. Their level of power is not expressly know, probably low. *Funding bodies* have the power to influence MU development directly, providing funds to diversification and promotion of sustainable tourism: this power is considered strong, as they fund the development of this MU at the whole EU level.

In **Croatia** it can be deduced that the majority of stakeholders identified can have a strong power in the development of this MU. Part of them supporting the cross-sectors strategic development and acting at different level and type of organizations (e.g. the Croatian Tourist Board for tourism, the key actors in the fishery economic chain, FLAGs and maritime cluster), part of them (ministries, local authorities and also the Croatian Institute for Spatial Development) by making decisions, implementing regulations and funding opportunities of development (EU funding bodies). The power of research institutes can be considered medium-low, providing the knowledge on the resources and strategies of MU development.

In **Italy** we can assume that all the actors of the seafood market chain have strong power, since they provide the knowledge of the resource and they represent the key actors in the fishery chain for the national economic income. They are considered to have the power to influence directly fishery policy, addressing funds and projects (e.g. Structural Funds, Interreg Funds, and EMFF funds), shaping investment projects and influencing permitting processes and results. Commercial business tourism organizations are assumed to have a strong power, since they represent a key actor for the national economic income. Consultancies organizations (e.g. National Federation of Fishing Companies, cooperatives and SMEs, etc.) are considered to have the power to influence directly policy since are mainly local private stakeholders interested in receiving and income from these sectors. We can consider that Universities and National research organizations (depending both from the Ministry of Education, University and Research and the Ministry of the Environment) have

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medium power to influence directly regulations, as they provide the basic scientific knowledge about MU added value and support the development of MU initiatives. They are also advisors of ministers and licensing authorities. Policy makers (The Ministry of Agriculture, Food and Forestry Policies, The Ministry of the Environment and Protection of Land and Sea, The Ministry of Health and The Ministry of cultural heritage and tourism) have strong power to control and make decisions, implementing the Common Fisheries Policy (CFP) and other international policies (e.g. FAO-GFCM). Funding bodies are considered to have strong power as they fund the development of this MU at the whole EU level. In addition the Italian Aquaculture Associations is assumed to have a strong power to influence directly the policy and the funding programs, acting at different level and type of stakeholder profiles.

15.4. Organisation of stakeholders

Eastern Atlantic

In **Portugal**, there are individual organizations related to offshore aquaculture, however there are more concentrated on onshore aquaculture. As for the tourism sector it is represented by many individual/local/regional organizations. In relation to cross sector, the number of research centres is considerable, while the policy maker and the regulator are monopolies of one organization. The strongest cluster to discuss maritime activities in Portugal is a cross-sector forum.

Mediterranean

In **Slovenia** aquaculture commercial business operators are mainly individual small self-employed family farms, which are represented by the coastal Slovenian FLAG and the Chamber of Agriculture and Forestry of Slovenia. Touristic operators are clustered in associations at local level and at national level, representing the interests of their members (the Association of Slovene Travel Agencies, Association of Tourist Farms, etc.). Furthermore, small entrepreneurs in the sector of tourism are represented by (i) the Chamber of Commerce and Industry of Slovenia – Chamber of Hospitality and Tourism, ii) the Chamber of Craft and Small Business of Slovenia and (iii) the Trade Union for Tourism and Catering workers (Annual National Report to the European Commission - Slovenia, 2015). The Slovenian Tourist Board (STB) acts as the main national tourist organisation responsible for development, promotion and marketing of the touristic destinations. Research organizations on both aquaculture and tourism are individual bodies. Regulators of aquaculture sector and tourism sector are mainly individual public administrations, belonging to the competent ministries (the Directorate of Forestry, Hunting and Fisheries within the Ministry of Agriculture Forestry and Food for aquaculture and the Directorate for tourism and internationalization within the Ministry for the Economic Development). The policy makers are the main above mentioned ministries involved in the aquaculture and tourism activities, as well the Ministry for the Environment and Spatial Planning. The regional Development Centre of Koper (RDC Koper) also acts as an individual institution at the regional level supporting policy makers and promoting business and economic development. Concerning tourism, the Slovenian Tourist Board is the main classification society identified. It manages the “Green label Slovenia” a mark of quality used to indicate the compliance of destinations with requirements defined by the Green Scheme of

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Slovenian Tourism (GSST). EU Funding bodies (EFF-EMFF, INTERREG, MED, Italy-Slovenia etc.) act as individual funding organizations.. NGOs and other associations act as individual organizations operating at different levels.

In **Croatia** aquaculture commercial business operators are represented by a lot of individual organizations (35 companies registered in 2015 as finfish farming on a total of 63 locations at sea). Local tourism organisations are variously clustered associated (e.g. associations of travel agents, hoteliers, camping sites). They are represented by the national Chamber of economy. Port authorities (main ports Rijeka, Zadar, Šibenik, Split, Ploče and Dubrovnik) are individual organizations/ local administrative office regulators working as regulators/administrative supervisors. County administrative offices manage at regional level the classification and permits for private tourism accommodation. The Croatian Institute for Spatial Development represents a national regulator, which acts as individual organization like the ministries/policy makers (Ministry of Agriculture, Fisheries and Rural Development, Ministry of Spatial Planning and the Ministry of Tourism). Concerning tourism, the Croatian National Tourist Board (CNTB) is a strong clustering organization, promoting the development of tourism at national level. The fisheries sector in Croatia, and especially the activity of aquaculture, is organized primarily through a chamber system. There is an Agriculture, Food Industry and Forestry Department within the Croatian Chamber of Economy (CCE), which is organized into associations, councils and groups. One of the associations is the Association of Fisheries and Fish Processing, a part of which is the Aquaculture group, which acts through the Committee for Freshwater Farming and Committee for Mariculture. The Croatian Chamber of Trades and Crafts (CCTC) is also active as an association of crafts founded for the purposes of promoting, harmonizing and representing common interests of crafts. With regard to the activity of aquaculture, the CCTC members are mostly shellfish farmers. EU Funding bodies (EFF, INTERREG, MED, ect.) act as individual funding organizations. FLAGs and the Croatian Maritime Industry Competitiveness cluster-MarC are strong clustering well locally assembled. Finally NGOs and other associations act as individual organizations operating at different levels.

In **Italy** the Regions are local individual organizations/ administrative office regulators coordinated by the central public administrations. Policy makers are the ministries (the Ministry of Agriculture, Food and Forestry Policies and the Ministry of cultural heritage and tourism, through the General Directorate for Tourism) subdivided into several departments with various competences. FLAGs and the newly constituted National Technological Cluster on Blue Growth are strong clustering organizations well locally assembled. In general commercial business organizations, societies providing consultancies on the aquaculture and tourism topics, research institutions, NGOs can be all considered individual organizations, acting at different level and with several coordination mechanisms (e.g. Ministry for University and Research, Consortia of Universities, National Research Council, National Cluster). Some organizations are very distributed on territories and operate at local level. Concerning in particular tourism commercial business operators, they are generally associated per sub-sector and per region, with national representations as well. At local level a large number of clusters exists promoting specific territories (e.g. Touristic Parks). EU Funding bodies act also as individual funding organizations.

15.5. Sea basin stakeholder network analysis

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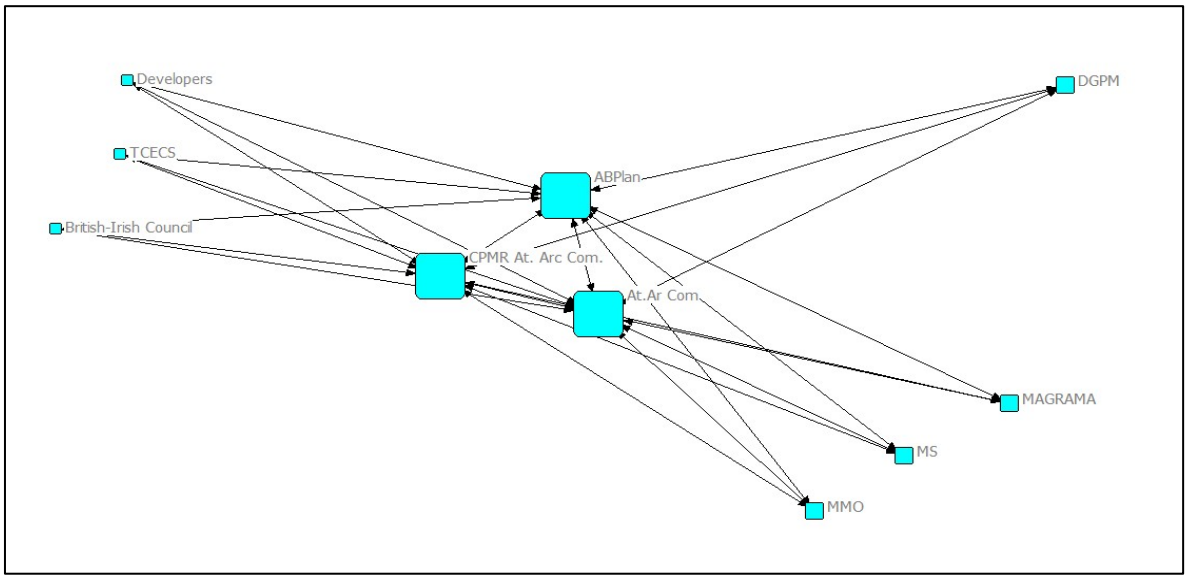
Eastern Atlantic



Picture 40. *Stakeholders' relevance, activity and attitude in relation to the* Stakeholder network in the Eastern Atlantic

Considering the mixed group of actors analysed for the Eastern Atlantic, it is not surprising that the power and highest degree centrality of the Sea Basin stakeholders, in relation with the MU aquaculture and tourism, rests with Atlantic B. Plan, CPMR Atlantic Arc Commission, and Atlantic Arc Commission for the Fisheries and Aquaculture.

Mediterranean

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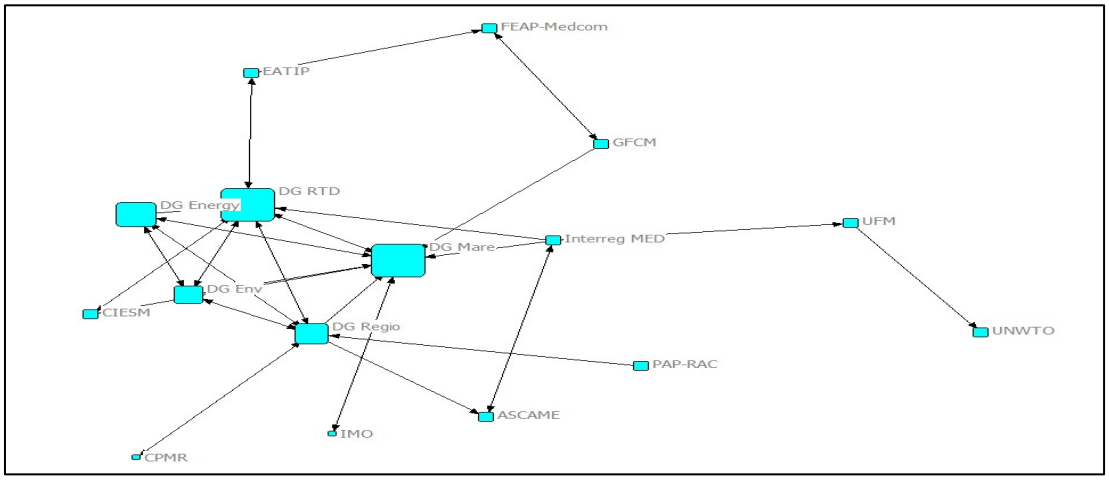

Picture 41.Stakeholders' relevance, activity and attitude in relation to the Stakeholder network in the Mediterranean

The network structure of Mediterranean stakeholders important for the MU Aquaculture and tourism MU combinations shows absolute power of the policy makers from EU level such as DG RTD, DG Mare. From another side, good communication of the aquaculture representatives (e.g. EATIP) with EU level stakeholders, may give them advantage in the decision making over the tourism sector.

16. OFFSHORE WIND ENERGY GENERATION AND ENVIRONMENTAL PROTECTION

Table 12. Relevance of the offshore wind and environmental protection MU combination in the EU sea basins/countries

OW and Environmental Protection				
Sea basin	Eastern Atlantic	Mediterranean		North Sea
Country	FR	FR	IT	SE

16.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Eastern Atlantic

In **France (Atlantic)**, the overall attitude of stakeholders is positive and OW is a promising use planned in several MPAs in the near future. For this reason OW commercial business is considered to have a positive attitude towards MU while the environmental protection attitude remains unclear. Cross-sector commercial business, consultancies, research organisations, regulators and policy-makers are driving forces towards MU. , especially OW and environmental policy-makers. The first one developed the Law of energetic transition for green growth, increasing the contribution of

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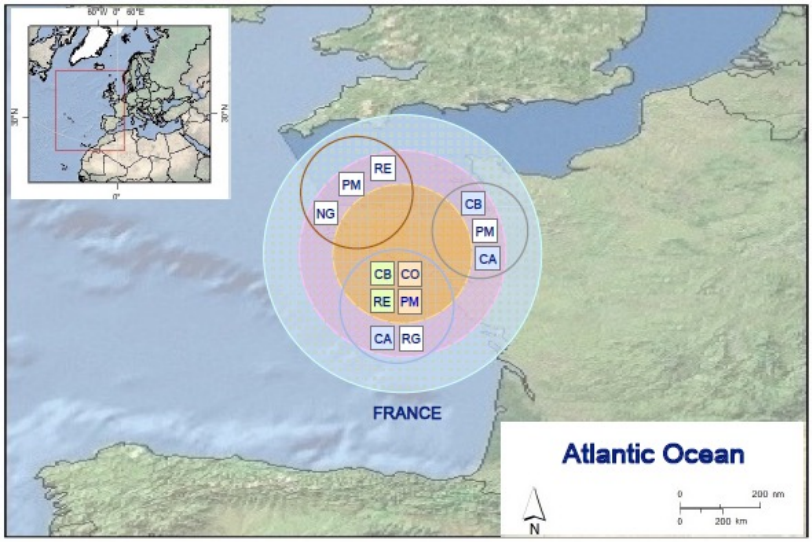
renewables to electricity by 2030, incentivizing offshore wing energy projects with the target of 100 MW for floating wind by 2023. Environmental policy-maker developed the National Strategy for the Sea and the Coast which attempts to secure and simplify the legal framework for the deployment of major projects, driving forces for this MU too.



Picture 42. Stakeholders' relevance, activity and attitude in relation to the offshore wind and Environmental protection in the Eastern Atlantic

Mediterranean

Policy makers in **France** are proactive, as the French protected areas agency is involved in the MU, while national energy sector commercial businesses (QUADRAN, IDEOL) are the driver of the development of offshore floating wind technology.

In **Italy** this MU has not been explored yet and its awareness is actually poor. However, on the basis of desk analysis and interviews with local stakeholders, we can assume that the key actors identified for this MU can have in general a positive attitude due to the interest in renewable energy as well as the need to conserve biodiversity and protect the environment. Commercial business operators and consultancies societies, both on the offshore wind and environmental protection topic, are considered to have a positive attitude, favouring the permitting process and promoting acceptance by local administrations and local communities, and therefore valorise their consultancy. Research organizations are considered to positively benefit from this MU development, since it implies the research in novel areas: new technologies, siting of new areas suitable for the development of the MU, multi-use platforms. Interviews with local stakeholders underline that regulators have in general a negative attitude, imposing barriers and blocking permissions. Also they can be slowed down by the absence of a clear/smart regulation in terms of implementation and monitoring. Policy makers are considered to have a neutral attitude, depending on the possibility that MU makes new plants more sustainable and interesting from a socio-economical point of view. Funding bodies (through EU programs, such as H2020, European Structural and Investment Funds, European Fund

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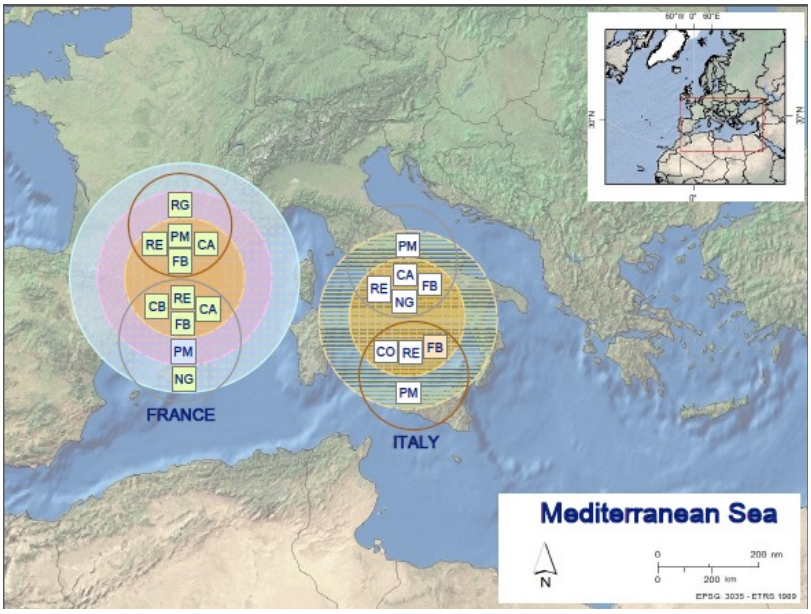
for Strategic Investments, Europe's Programme for SMEs and the European Fisheries Fund, which funds sustainable development of fishery, thus including an environmental protection approach, other EU specific funding programmes on environment, such as LIFE, MED, Regional Operational Programs and National Operational Programs for protected areas) act positively, providing financial support for the development of this MU. NGOs and environmental associations can be assumed to act potentially positive towards this MU, as far as this MU can increase sustainability, reduce impacts, increase acceptance in coastal communities.



Picture 43. Stakeholders' relevance, activity and attitude in relation to the offshore wind and Environmental protection in the Mediterranean Sea Basin

Baltic Sea basin

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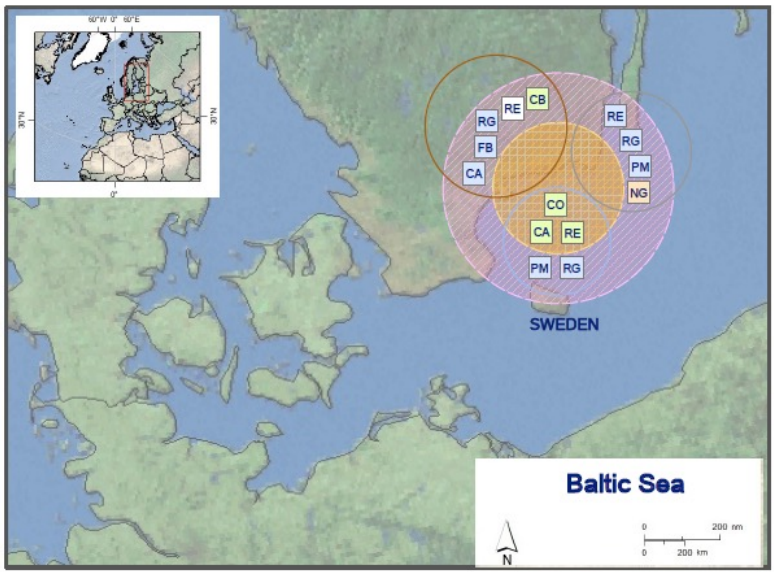

Picture 44. Stakeholders' relevance, activity and attitude in relation to the offshore wind and Environmental protection in the Baltic Sea Basin

16.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

In **France (Atlantic)**, OW commercial business operates at either national or European level while intermediaries have power at the national level. Environmental protection stakeholders, regulators, policy-makers and NGOs have mainly a national geographical scope. Cross-sector stakeholders range from National to Regional/Local, it is important to note that in spite the level of decentralization in France the central public agencies retain the power.

Mediterranean Sea

In **Italy** the stakeholders identified for this combination, have the power at all scales. Consultancies organizations in Italy (e.g. cooperatives and SMEs working supporting operators in developing offshore wind projects) work both at national and international scales. The newly constituted National Technological Cluster on Blue Growth, the research organizations and National Institute for Energy in Italy act both at national and international (mainly through EU projects) scale. Regulators act at local/regional scale (environmental impact assessment of offshore wind farms projects), while policy makers the Ministry of Economic Development (MISE), the Ministry of Infrastructure and Transport (MIT), and the Ministry of Environment and Protection of Land and Sea (MATTM)) at the national level. Funding bodies (through EU programs, such as H2020, European Structural and Investment Funds, European Fund for Strategic Investments, Europe's Programme for SMEs and the European Fisheries Fund, LIFE, MED, Regional Operational Programs and National Operational Programs for protected areas) mainly act both at EU level and national scale. Wind Energy Associations in Italy act at all level, involving different stakeholder's profiles.

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Baltic Sea

In **Sweden**, the governance of marine and water management is divided amongst several agencies over different levels in society. On a national level, the most important agency for marine management is the Swedish Authorities for Marine and Water Management (SwAM). Municipalities have an important role in permission for off shore wind parks inside the territorial sea boundary.

16.3. Type and level of power

Eastern Atlantic

In **France**, national research institutions are more likely to have the power to influence directly, highlighting environmental impacts/risks and filling knowledge gaps. In France, the central public agencies retain the power to control and take decisions, with the active engagement of decentralised regional agencies. NGOs and Business Communities have some power to influence. In France, central Public and Regional Public Agencies have a strong power.

Mediterranean Sea

In **Italy**, commercial business operators and consultancies organizations on the offshore wind sector, as important economic operators in the energy sector, are assumed to influence administrations in promoting in different ways (legislation, permitting, incentives, etc.) offshore wind farms. As pointed out from interview with local stakeholders, whenever a prototype is build, they can have more power to influence directly the policy. Consultancies societies on the environmental protection topic are assumed to have low power in influencing the policy. We can consider that research organizations have medium power to influence directly regulations, as they can provide the knowledge on the resource and technologies, but cannot directly influence policy and investments on MU. They can support operators in developing prototypes and technologies; promoting the sector and MU in particular as part of a wider strategy for R&I for blue growth; they are also advisors of ministers and licensing authorities. Regulators and policy makers have strong power controlling and making decisions. Concerning environmental protection, the Ministry of Environment, Land and Sea is responsible for Protected Areas authorizations. Thus they have strong power in controlling and making decisions. Funding bodies are considered to have strong power too to influence directly policies, since they are the funding bodies, and fund/co-fund projects and initiatives. Wind Energy Associations are considered to have medium power: they act at different level and type of stakeholder profiles. They can have a stronger power concerning their influence to the issue of permission. NGOs and environmental associations are finally considered to have strong power as they act at different level and type of organizations. They indeed can influence directly decision makers and possible investments for the MU development.

Baltic Sea

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In **Sweden**, the municipalities are the key player in planning that has sometimes been described as a "planning monopoly" in territorial sea. The County environmental courts are taking the decision on permission, but the municipalities must agree first[29].

16.4. Organisation of stakeholders

Eastern Atlantic

In **France**, there is strong clustering of research institutions (IFREMER) as some are part of the French Competitiveness Cluster. Regarding the Environmental Protection, the coordination and strategic control is within the monopoly of one central organisation. However, NGOs on Sea related issues exist as well as other individual organisations. As for OW other regulators and Business Communities may present themselves as individuals or cluster.

Mediterranean Sea

In **Italy** the Regions are local individual organizations/ administrative offices regulators coordinated by the central public administrations. The policy makers are individual ministries (the Ministry of Economic Development, the Ministry of Infrastructure and Transport and the Ministry of Environment and Protection of Land and Sea), which act under the coordination of the Presidency of the Council of Ministers. In general commercial business organizations, societies providing consultancies on the offshore wind-environmental protection topics, research institutions, NGOs can be all considered individual organizations, acting at different level and with several coordination mechanisms (e.g. Ministry for University and Research, Consortia of Universities, National Research Council). Some engineering companies and professionals are also well organized in Associations playing a relevant role as a strong clustering organization. Funding bodies (EU Funding bodies, as well as national and regional funds) are individual organizations, which refer to policies and strategies, approved at higher level.

16.5. Sea basin stakeholder network analysis

[29]Vindlov. 2017. Available at: http://www.vindlov.se/sv/steg-for-steg/svenskt-vatten/provningsprocessen/tillstand-for-vattenverksamhet/

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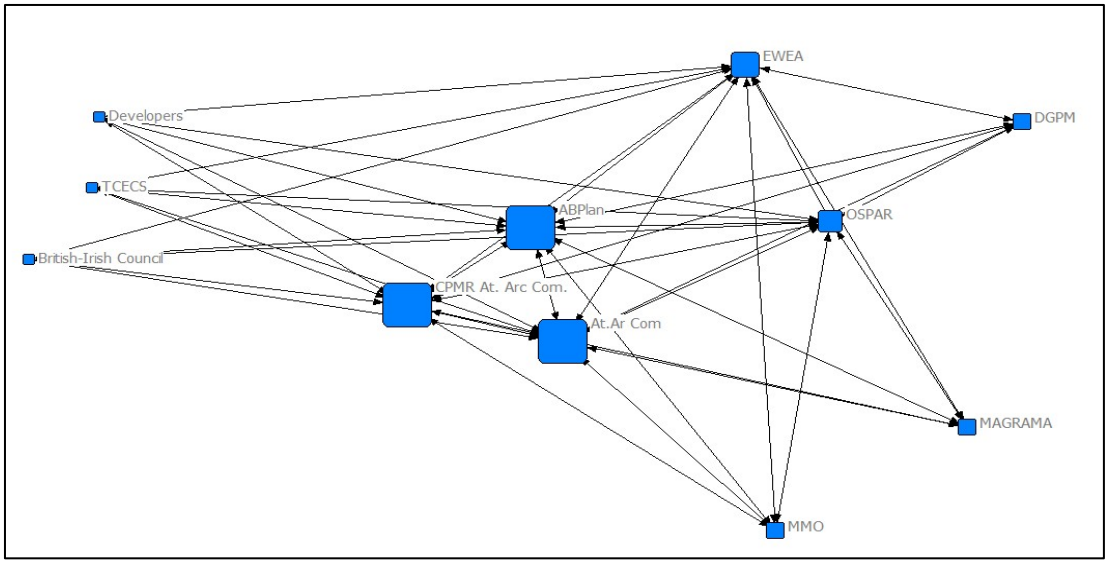
Eastern Atlantic



Picture 45. Stakeholder network of the international stakeholders in the Eastern Atlantic

The stakeholder network structure for the MU combination OW and environmental protection, in the Eastern Atlantic sea basin, is very cohesive. Stakeholders hold relations with one another, yet, key actors for this MU combination are the ones that represent the whole region, while sectoral stakeholders, although maintaining direct connection, communication is mostly bridged by the central actors (e.g. ABPlan and Atlantic Arc Commissions).

Mediterranean Sea

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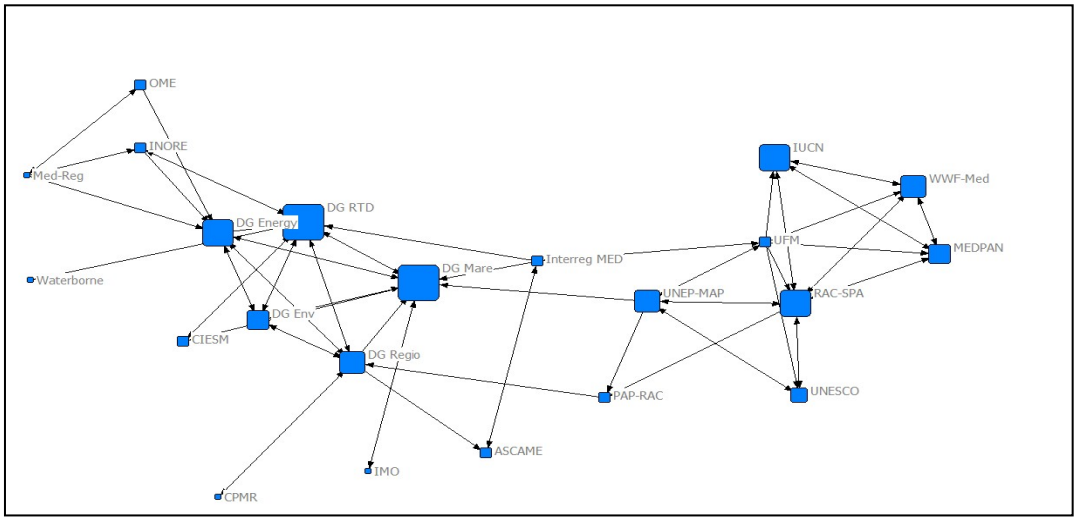
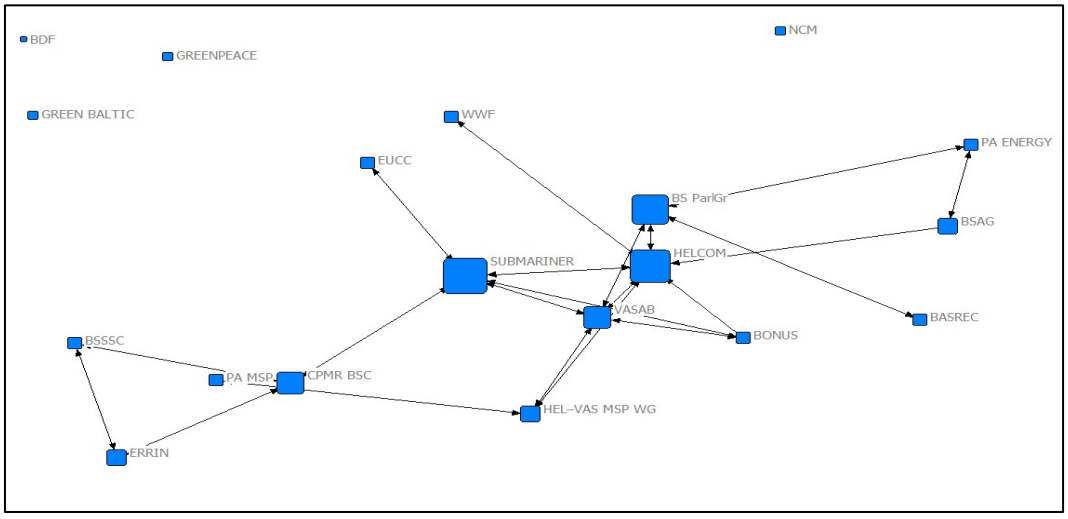


Picture 46. Stakeholder network of the international stakeholders in the Mediterranean Sea

Picture 46 illustrates the Mediterranean stakeholder's network structure for MU combination OW and environment protection. The network structure shows the polarisation of two groups of actors, EU level policy makers with central actors within the sub-group, and from other side, strong relationships between environmental protection concern stakeholders, mostly operating on the Mediterranean level (e.g. WWF, RAC-SPA, IUCN, UFM, MEDPAN). Nevertheless, although the power of the UNEP-MAP cannot be seen from the number of ties that this institution holds, it still plays a key role acting as a bridge in bringing closer EU and Mediterranean level stakeholders.

Baltic Sea



Picture 47. Stakeholder network of the international stakeholders in the Baltic Sea

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According to the network structure of the Baltic Sea stakeholders, shown on the picture 47; it is obvious need for empowerment of the environmental protection stakeholders (e.g. GREEN BALTIC, GREENPEACE) and their interconnection with other SB level stakeholders.

17. FISHERIES AND OFFSHORE WIND ENERGY GENERATION

Table 13. Relevance of the fisheries and offshore wind MU combination in the EU sea basins/countries

Fisheries and Offshore Wind		
Sea basin	North Sea	
Country	DE	NL

17.1. Overall activity and attitude of relevant stakeholders in relation to the MU

North Sea

In **Germany,** the fisheries sector as a whole is very open towards multi-use projects and takes an overall active role in trying to realise multi-use developments. Key stakeholders previously participated in projects exploring the feasibility, analysing barriers and showing approaches for future multi-use approaches. The offshore wind industry as a whole has a low interest in multi-use of any kind unless there are clear added values and no risks involved. Certain key companies and associations however are interested in multi-use as a future use concept and have been partners in past research projects. Regulatory bodies are open to fisheries in connection with offshore wind energy as a multi-use. Regulators have been open to inquiries as well as project participation.

In Germany, regulatory bodies are open to fisheries in connection with offshore wind energy as a multi-use. Regulators have been open to inquiries as well as project participation in the past. The overall attitude of the offshore wind industry in regards to multi-use in any use combination is cautious. Under the German maritime spatial plan for the EEZ, they have priority rights over other users inside their assigned priority areas. These protect their construction, operation and maintenance activities from other users. Most stakeholders see no need to jeopardize the security these rights guarantee them. These opposed actors possess an absolute veto-right against all activities inside their priority areas and use it to impose barriers. Some key stakeholders in the industry however are open to alternative use concepts and have participated in past projects in order to identify the approaches. Regulatory bodies are open to fisheries in connection with offshore wind energy as a multi-use.

In the **Netherlands**, there are about 300 trawler fishers in the Netherlands who have been increasingly restricted in their access of fishing grounds by other maritime uses. Therefore, fishers in the Netherlands are exploring opportunities to combine fishing with other uses and should be viewed as potential initiators of MU developments. In the context of the Netherlands, fishers

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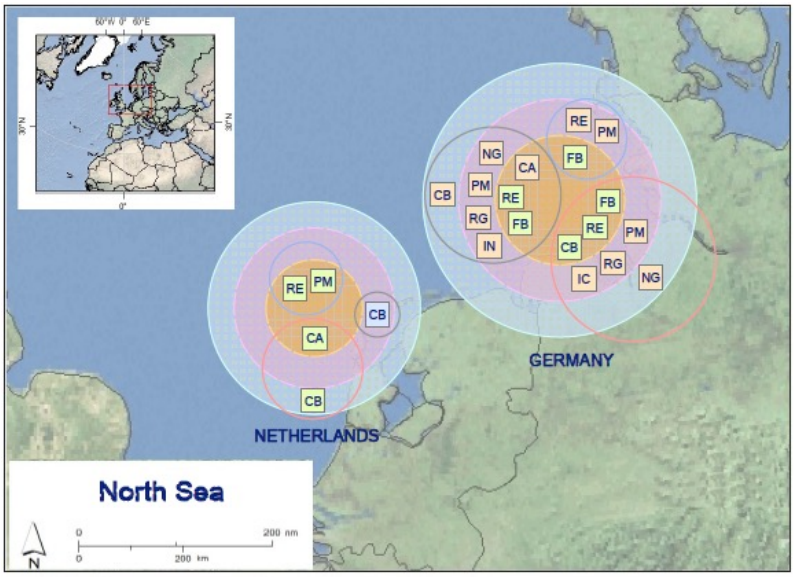
however do not see much opportunity in collocating with wind parks as the electricity cables are not buried underground, rendering mobile bottom fishing (which is the majority of the fishery sector in the Netherlands) is not possible.



Picture 48. Fisheries and Offshore wind in the North Sea Basin

17.2. Geographical scale at which certain stakeholder have the power

The **German** fishing sector is represented by associations on a state and federal level. Representation or lobbying on a European level can only happen by coordination with associations from other countries. Key offshore wind stakeholders, whether planners or operators, are almost exclusively part of multi-national energy providers with a sea basin or EU perspective. Relevant cross-sector authorities for this multi-use combination operate on the regional to national level.

In **the Netherlands**, fishers are organised in the national Visserbond (hence the Intermediary) which is established to protect their interest in policy discussion and set production quotes.

17.3. Type and level of power

The power of the **German** fisheries sector lies in influencing decision makers on the national and international level. They have no direct power to advance this multi-use combination with offshore wind farms. The offshore wind industry has a larger influencing power than the second user, fisheries in this case, due to their larger operations. The lead corporations are multi-national companies operating sea basin or EU wide and providing thousands of high paid jobs in the technology sector. Further, they have special absolute rights within their assigned priority areas over other uses and users. Relevant cross-sector authorities have direct power to control and make decisions within their mandated purview. They are immediately responsible for applying regulations and manage their jurisdiction accordingly. Apart from that they have the power to directly influence

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the decision making process.

The level of power of the **German** fisheries industry is comparably low in this combination. The fisheries sector, though it has a longer tradition, does not hold the same type of power as the energy sector. It is therefore the weaker user in this multi-use scenario. The offshore wind industry has a larger influencing power than the second user, fisheries in this case, due to their larger operations. The lead corporations are multi-national companies operating sea basin or EU wide and providing thousands of high paid jobs in the technology sector. The power of the cross-sector authorities is strong as it is absolute within their mandated purview. They need to be included in any communication process regarding multi-use.

In the **Netherlands**, fishing community has the power to indirectly influence policy makers as they influence the positions of the national Visserbond, which participates in policy discussion on the issue. The Visserbond is an active influencer at a national level when it comes to maritime spatial planning choices. On the other side, the off-shore wind park operators are not combined in a formal organisation and thus lack an organised representation of their industry's interests in national policy making.

17.4. Organisation of stakeholders

North Sea

In **Germany**, the fisheries sector is made up of a large number of small, often family run, enterprises. A few larger conglomerates exist. The sector is being represented on a national level by the German Fisheries Association (DFV). The offshore wind industry is dominated by a low number of mostly multi-national energy corporations. They jointly support multiple associations and lobby groups to advance their interests. Cross-sector authorities are organised at the federal-state (coastal states) and federal level. In Germany, there needs to be more dialogue between all involved users and stakeholders. The whole process of multi-use is a deviation from the standard ocean management system in use in Germany and as such, needs to be approached differently. All relevant actors from user groups to regulators need to enter into a dialogue in order to exchange the best available knowledge and identify ways forward.

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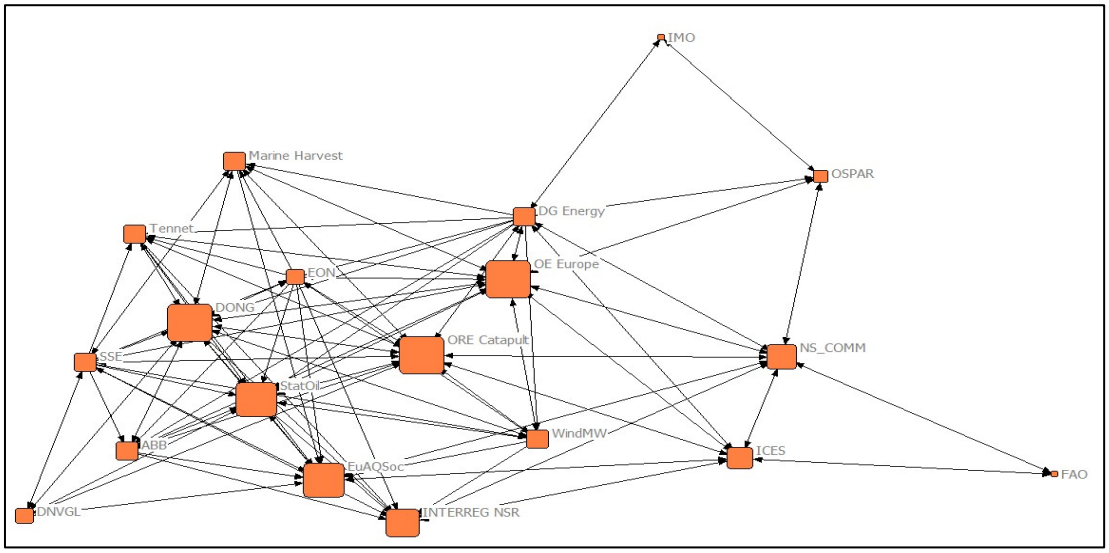
17.5. Sea basin stakeholder network analysis

North Sea



Picture 49. Stakeholder network of the international stakeholders in the North Sea

The illustration of the network structure for the MU combination fisheries and OW (picture 49), shows greater power and cohesion between stakeholders from the energy sector (e.g. DONG, Statoil, OE Europe), likewise closeness with the EU level policy maker of the sector. From another side, the most important actor for the fishery sector – FAO, is marginalized in the network and one with the lowest power due to the number of links and distance from other actors from the sector.

18. FISHERIES AND TOURISM AND (ENVIRONMENTAL PROTECTION)

Table 14. Relevance of the Fisheries and Tourism (and environmental protection) MU combination in the EU sea basins/countries

Fisheries and Tourism and Environmental Protection									
Sea basin	Eastern Atlantic	Mediterranean						Black Sea	
Country	FR	HR	GR	MT	SI	IT	CY	BG	RO

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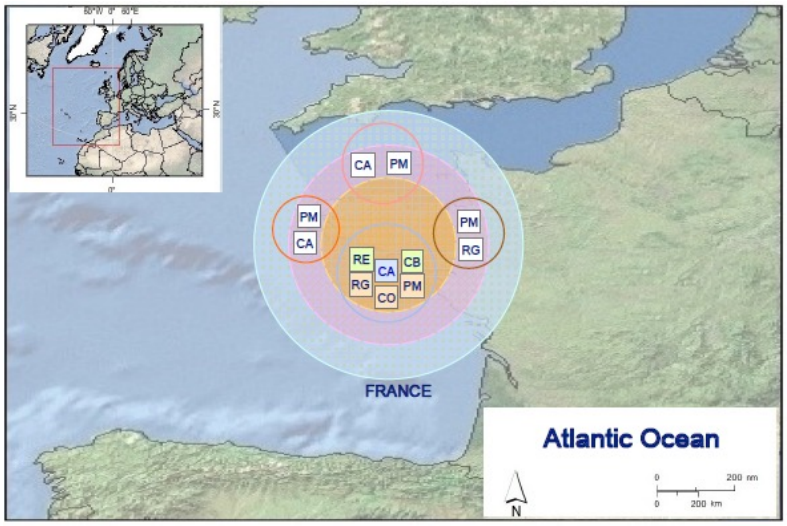
18.1. Overall activity of relevant stakeholders in relation to the MU

Eastern Atlantic

In **France (Atlantic)**, , the attitude of the central agency is also assumed to represent these stakeholders and these are driving forces, as it was for the three MU combinations of Atlantic France. A similar result is given to stakeholders from Tourism and Fisheries. Cross-sector policy-makers are the major stakeholders driving forces. Although there is no regulation for fishing tourism yet in place, a ministerial report on the development of fishing tourism is being developed, which will mean a big support for this MU.



Picture 50. Stakeholders' relevance, activity and attitude in relation to Fisheries &Tourism and Environmental Protection in the Eastern Atlantic

Mediterranean Sea

In **Greece**, there is an overall positive attitude towards this MU by most stakeholders of whom the policy makers are the most prevalent. Categories of stakeholders in the field of fishery, relevant to this MU, are policy makers and intermediaries. Both categories have positive attitude towards the MU. Relevant stakeholders working in the tourism field are research organisations and policy makers. Researchers have a positive attitude, as this MU is a good opportunity to apply alternative types of tourism especially in areas where classic types of tourism have low potential. The environmental protection consultancies, policy makers and NGOs have diverse attitudes towards this MU. During the interviews the consultancies pointed out the negative factors against this MU. Policy makers are positive provided there is compliance with the environmental and safety standards by operators. On the other hand, NGOs attitude is neutral.

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In **Cyprus**, the overall impression is that there is a positive attitude towards this MU especially from policy makers but also from NGOs and research organisations. The only categories of stakeholders related to tourism that have reacted to interview invites are the intermediaries, while the only category related to environmental protection is the environmental NGO. Cross-sectoral research organisations and policy makers were proactive and reactive respectively, both with positive attitude towards this MU.

In **Malta**, the overall attitude of stakeholders towards this MU is neutral to positive**.** This conclusion however may not be accurate since half of the stakeholders approached are dormant. Only fishing commercial businesses have reacted with neutral to positive attitude towards this MU. Tourism research organisations have reacted with neutral attitude towards this MU. Cross-sectoral policy makers were reactive, while research institutes were dormant. Policy makers had a neutral attitude towards the MU.

In **Slovenia** fishermen (*commercial operators*) are represented by the Chamber of Agriculture and Forestry of Slovenian umbrella interest organization engaged in agriculture, forestry and fishery. A positive attitude towards MU is attributed to them, especially concerning "pesca-tourism", since this MU can provide a support to fishermen who are converting their activity to comply with the Common Fishery Policy. The attitude of tourism sector toward MU, and particularly toward this combination, is considered positive, because tourist operators can positively act on drivers, matching the increasing demand for a sustainable tourism. The coastal Slovenian FLAG brings together a wide range of local actors including fishermen, marine aquaculture workers, municipalities, scientists, institutions, NGOs and individuals and acts as *business-support consultancy*. Its attitude toward MU is positive because it is primarily interested in diversifying fishery activities, linking to other sectors (especially tourism). *Regulators and policy makers* of the fishery sector (Ministry of Agriculture, Forestry and Food - Directorate for Forestry, Hunting and Fisheries) are considered to have a positive attitude toward this MU, because the diversification of fisheries, especially in combination with tourism, is encouraged through the European Fisheries Fund. The same positive attitude toward this MU can be recognized in the sector of tourism (Ministry for the Economic Development - Directorate for tourism and internationalization), considering the priority challenges for tourism development and diversification stated in the national Tourism Development Strategy. *Research organizations* can provide knowledge to properly address MU potential and remove barriers to its development. A positive attitude can therefore be deduced for this stakeholder category, also if not expressly known. *Classification societies* are interested in promoting a green label for touristic destinations and service providers: their attitude is considered positive because they can positively act on drivers. *Research organizations* can provide knowledge to properly address MU potential and remove barriers to its development. A positive attitude can therefore be deduced for this stakeholder category, also if not expressly known. Considering *funding bodies*, INTERREG programs targeting the diversification of tourism offer, the promotion of sustainable tourism initiatives, and the innovation in tourism sector (e.g. INTERREG MED, INTERREG ITALY-SLOVENIA, and INTERREG ADRION) have a positive role in development of this MU, because they can provide financial support. A positive attitude to this MU can be attributed also to the *funding bodies* related with fishery (EAFRD, ERDF and EMFF), considering their objective to diversify fishery sector also by the integration with other sectors. The National Tourist Association,

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an NGO active at national level on tourism development, has a positive attitude toward MU due to its interest in promoting market performance of tourism, growth of the national income and employment. A consortium of *NGOs* dealing with the environment collaborates with the Ministry of the Environment and Spatial Planning: they can provide a space of dialogue, connecting people and disseminate information and they can act removing existing barriers to the development of MU.

In **Croatia** the attitude towards pesca-tourism activities is considered to be positive, presented as a possible initiative for the development of fishery sector in Croatia. This MU represents an opportunity for new incomes and jobs (also through novel research areas, as far as concerned research institutes), new environmental benefits (eco-tourism) as well as an opportunity to develop alternative/sustainable form of tourism. Local organisations in particular are considered to positive act towards this MU, as stimulated by the increasing demand for fish and for a sustainable tourism with the interest in developing alternative/sustainable forms of tourism. Funding bodies are assumed to act positively, providing financial support (through the European Fisheries Fund) for the development of this MU. The EFF indeed supports measures to promote economic diversification of the fishing sector, to create new sustainable sources of income and quality living, also including tourism-related activities. On the other hand policy makers can act as a negative barrier for the development considering the lack of guidelines/regulatory aspects, as pointed out by interviewees.

In **Italy** the key actors identified for this MU are considered to have a positive attitude towards MU and in particular towards the combination of fishery with tourism, since it can provide integrative incomes for fishermen and new job profiles. This MU is driven by an increasing demand for fish products, the need to diversify fishery products and more in general the need to transform the sector in order to overcome the crises due to fleet reduction. Moreover this MU can provide additional income opportunities, new specialized/skilled job profiles for local communities, new environmental benefits (eco-tourism) as well as an opportunity to develop a diverse tourism offer. The newly constituted National Technological Cluster on Blue Growth, National Research organizations and institutes are considered to benefit from this MU development. They can be interested in the MU development research required to support any of the single sectors. Regulators and policy makers are assumed to act positively mainly on fishery-tourism aspects. They indeed can reduce barriers, on two levels: (1) Defines adequate regulatory schemes for MU development, (2) supports private actors in acting/ being effective on the market. Concerning environmental protection, policy makers are instead considered to act as a negative barrier for the development of the MU, as interviewees have pointed out the lack of guidelines/regulatory aspects. Funding bodies act also positively, providing financial support for the development of this MU (through the European Fisheries Fund and in particular INTERREG programs targeting the diversification of tourism offer, the promotion of sustainable tourism initiatives, and the innovation in tourism sector).

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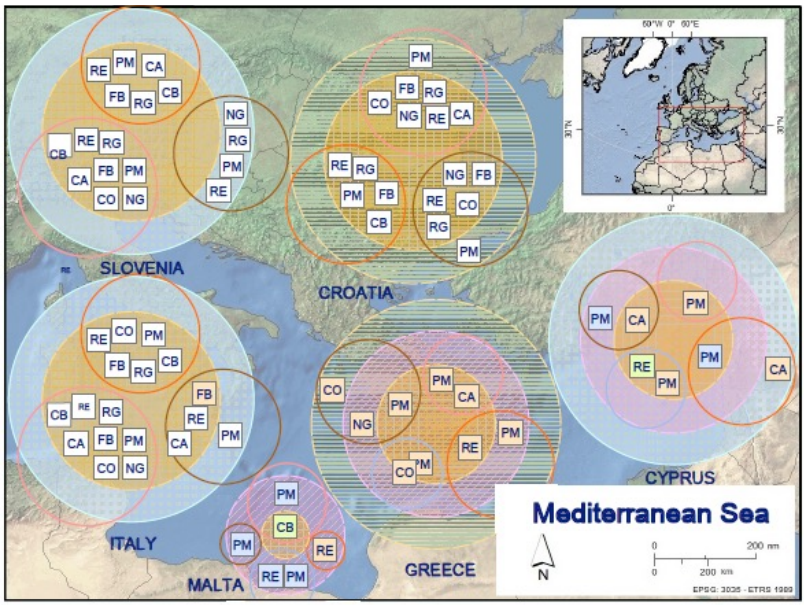

Picture 51. Stakeholders' relevance, activity and attitude in relation to the Fisheries and Tourism and Environmental Protection in Mediterranean Sea Basin

Black Sea

This MU combination was found both in **Bulgaria** (near cape Kaliakra) and in **Romania** (Danube Delta Biosphere Reserve). It could be said that all stakeholders, who to one extent or another are involved in it, are interested in the co-existence of these activities. It should be noted that the MU combination identified in Bulgaria also includes "aquaculture".

Policy makers at a local level (that are responsible for the local policy (including for provision of communal services and for funding certain projects)) in **Bulgaria** – directly or indirectly support this MU combination. Policy makers at a national level in the field of environmental protection and fisheries, and at the same time performing the functions of funding bodies are also, to one extent or another, supportive. Regulators of the fishing and aquaculture industry provided valuable information for the study. The overall stance of the policy maker responsible for the national tourism policy is slightly uncertain because they were not able to be interviewed. Research organisations should also be regarded as supportive since they have helped with referring to possible areas where this MU combination could be further explored. Commercial business also benefits since tourism companies, mussel farms and fishermen are interested in the co-existence of these activities within the same territory. NGOs which represent the interest of tourist companies and tourist operators in the north-east part of Bulgaria are interested in the opportunities this MU combination provides.

For **Romania** the stakeholders representing the Danube Delta Biosphere Reserve for this MU combination are categorised work towards its further development and promotion. Policy makers at

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regional level are responsible for economic and social development of the area. Policy makers in the field of environmental protection at national level very much support this MU combination. This is also true for environmental regulators, which are responsible for overseeing how protected areas are managed. Regulatory bodies in the area of fisheries issue regulatory acts, perform control, etc. and directly or indirectly positively affect the co-existence of these activities. The funding body is responsible for the national policy on regional development and supports operations (via grants) for management of Natura 2000 areas. Regulators directly responsible for management and protection of the areas where this MU combination exists also favours it. Furthermore, organisations representing the fishing community and all tourism operators and economic entities offering accommodation and food services in the area benefit from the co-existence of all three activities. The overall attitude of relevant stakeholders both in **Bulgaria** and **Romania** is positive. However, the stance of some are categorised as "negative but can positively influence barriers", whereas the attitude of others could be said to be "neutral/undecided".

The attitude of policy makers at a local level in **Bulgaria** is positive and could be regarded as a "driving force" because their planning documents provide for measures and funds for development of tourism activities in the area where this MU combination is found. The attitude of policy makers in the field of environmental protection at a national level is categorised as negative because it imposes barriers, but can positively influence them after an environmental impact assessment of the proposed measures/activities, and in positive cases to remove or relax certain restrictions. Regulators of fishing activities also have a negative stance to the extent that they have control over fishing activities, including in protected areas but if all requirements are met they could remove or relax any barriers (if they challenge the development of the MU combination at all). The attitude of policy makers in the field of tourism is categorised as "neutral/undecided" since it neither places restrictions on nor funds tourism activities. Research organisations have a positive attitude to the extent that it may scientifically support this MU combination. Both fish producing companies and mussel farms benefit from this MU combination and for this reason their attitude is categorised as "positive", too. Finally, NGOs in the field of tourism have a "neutral/undecided" attitude because tourism operators neither object to nor explicitly foster the development of this MU combination.

The attitude of **Romanian** policy makers at regional level is positive to the extent that they support all measures aimed at economic and social development and at preservation of the natural environment. On the other hand, the environmental policy makers at a national level have a more or less negative stance to the extent that they may impose further restrictions and/or requirements in protected areas. Nevertheless, they act as a driver for this MU combination, because their commitment to policy and legislation on natural protected areas very much helps their development. The attitude of regulators is also categorised as "negative but can positively influence barriers" and environmental regulators may support expansion of the protected area. Although fisheries regulators may deny fishing permit in protected areas, it still may issue a positive statement if changes in legislation and/or in marine environment occur. It should be said, however, that regulators can provide substantial assistance for adopting clear legislation with regard to permitted activities, including fishing, in natural protected areas (a driver for this MU combination). Funding bodies have a positive attitude, which is demonstrated through the measures supporting management of Natura 2000 areas. The attitude of commercial organisations is also positive to this

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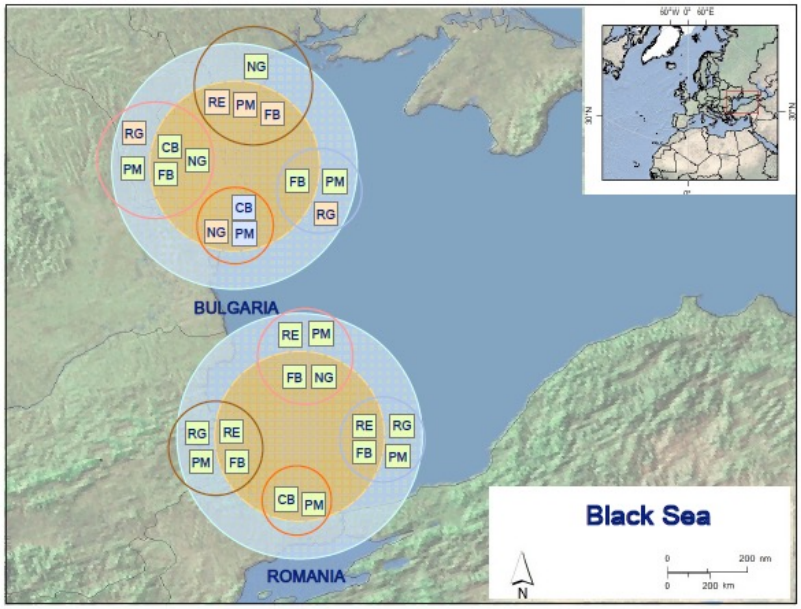
MU combination, because they can benefit by it. Other environmental regulators also have a positive stance towards this MU combination because their management, monitoring and research activities can foster/support environmental protection, tourism and fishing. Lastly, the attitude of the fishing community is also positive, because its members still can go into the sea to catch fish (provided that they meet the requirements in terms of fishing boats and fishing tools).



Picture 52. Stakeholders' relevance, activity and attitude in relation to the Fisheries and Tourism and Environmental Protection in Black Sea Basin

18.2. Geographical scale at which certain stakeholder have the power

Eastern Atlantic

In **France (Atlantic),** the competencies for MPA and Environmental Protection are decentralized to the Regional level. Stakeholders contacted for Tourism and Fisheries are at the national public agencies level although strong clusters appear throughout the French Region as associations of fisherman and business tourism associations are at a regional or local level.

Mediterranean

Fishery *commercial business operators* in **Slovenia** have their power at local scale: they are not associated in clusters. However, they are represented by the coastal FLAG acting at national level. Instead, tourism commercial players are aggregated in local tourism organisations, acting at municipality level, but some tourism cluster associations at national level also exist. Furthermore,

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small entrepreneurs in the sector of tourism are represented by various types of chambers. Tourism *business-support consultancies* act at national and local level. *Regulators and policy makers* for fishery, tourism and environment are national level bodies. *Classification societies* work mainly at national level. *Research organizations* consist of individual organizations dealing with fishery and/or tourism and/or environment, with no leading research institution; they act at national/international scale. *Funding bodies* act at EU level, cross-border level, sea basin level, sub-sea basin level. *NGOs* in the field of tourism and environmental protection are active at national level and have a strong clustering capacity.

In **Croatia** the majority of stakeholders identified for this MU, are considered to have the power at local scale. As far as concerned fishery activity, the focus is the Croatia islands, where the need for economic development on the sector is pointed out, in line with the National Strategic Plans for fisheries and aquaculture development in the Republic of Croatia (2007-2013 and 2014-2020). FLAGs implement a bottom-up participatory strategy addressing the stakeholder's economic, social and environmental needs at a local, national and international level. Regulators act at local/regional scale, while policy makers at the national level. Funding bodies (EFF, INTERREG for tourism and LIFE, MED for environmental protection) act at EU level in a cross-border level, involving sea basin and sub-sea basin levels.

In **Italy** the stakeholders identified for this combination, are considered to have the power both at local and national scale. Consultancies organizations in Italy (e.g. Cooperatives and SMEs) mainly work at local/regional scale. Research organizations act at all levels, from local (fishery cooperatives) to international (research institutes work also at this level). Regulators (Regions) act at local/regional, while policy makers (The Ministry of Agriculture, Food and Forestry Policies, The Ministry of the Environment and Protection of Land and Sea, The Ministry of Health and The Ministry of cultural heritage and tourism) at the national level. Funding bodies (through EFF, INTERREG programs etc.) act at EU level in a cross-border level, involving sea basin and sub-sea basin levels. In addition FLAGs implement a bottom-up participatory strategy addressing the stakeholder's economic, social and environmental needs at a local, national and international level.

In **Greece and Cyprus** all stakeholders operate mainly on the national level. In Malta research organisations and policy makers operate at the national level while commercial business can be found at the local level as well as the EU level.

Black Sea

Policy makers at a local level in **Bulgaria** are stakeholders of local relevance because their powers and adopted acts are applicable / enforceable only for its entities and citizens, which perform their activity or are located on the territory of the respective municipality. National policy makers have a geographical scale of power at the national level because their acts and powers are enforceable on the whole territory. The same could be said for most regulators. However, some of them are competent to act only with regard to the rivers that flow into the Black sea and for the Bulgarian

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part of the basin. For this reason, their power is of regional relevance. The one of research organisations is at national level because their research and other scientific activities are of national importance. Commercial companies (mussel farms and fishermen) have more or less a local power because their activities are relevant only for the area where the MU combination is found. Local tourism NGOs are also at this level because they are mostly influential in the north-eastern part of Bulgaria.

Regional policy makers in **Romania** have a regional power. Their acts and activities are relevant only in the respective county. Most of the public stakeholders – policy makers, regulators and funding body have powers at a national level. On the other hand however, the acts and the activities of local regulators have a local relevance to the extent that they are focused only on the area where the MU combination is located. Commercial (tourism) organisations have the same geographical scale of power because the activities (tours) they offer are relevant for the Danube Delta. Similarly, fishing communities are active at a local level because fishermen are, more or less, locally organised.

18.3. Type and level of power

Eastern Atlantic

In **France**, for Environmental Protection the public agencies (Regional/National) have the power to control and make decisions while the NGOs present a medium to strong power to influence decision. The same result applies to Fisheries and Tourism but the clusters/associations have the power to influence and are often invited to negotiations.

Mediterranean

In **Greece**, the cross-sectoral stakeholders for this MU are policy makers and classification societies. The first have a medium direct power to influence the development of the MU, while the second have a low indirect influence of the MU. Environmental NGOs are estimated to have higher power than consultancies to affect the development of this MU. The fishery intermediaries are having a medium power to influence indirectly this MU are in close cooperation with the policy makers having a strong power to control and make decisions.

In **Cyprus,** NGOs and research organizations have low power and can only influence indirectly this MU. Policy makers have a strong power to control the MU and take decision about it with close cooperation with the intermediaries that have a medium power to directly influence it

In **Malta** the power to control and take decisions lies on the policy makers and while commercial businesses and research institutes only have low power to influence this MU indirectly.

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In **Slovenia**, a power to influence directly development of this MU can be attributed to the fishery *commercial business operators,* through the role of the Slovenian coastal FLAG (*business-support consultancy*). The FLAG can actively promote "pesca-tourism", managing a quote of the European Fishery Funds. Its level of power is considered medium. Also the tourism commercial business stakeholders have the power to influence indirectly the development of MU, promoting alternative touristic offers. The national tourism *business-support consultancy* has a strong power to influence directly the development of MU because they are the most important national institution promoting the sector. *Regulators and policy makers* of these sectors have all a strong power to influence this MU development through their specific competences: by directly influencing the diversification of fishery sector, by promoting differentiation of tourism toward this combination, by defining regulation for the protection of the environment, including criteria for the access to protected areas. *Classification societies* can also play an indirect role in MU development: the "Green label Slovenia" mark can act as promoter of sustainable tourism; being a marketing initiative, its level of power can be assumed low. *Research organizations* can support MU development by providing expert support to the sector ministries and knowledge about MU added value: they can therefore indirectly influence decision but their level of power is probably low. *Funding bodies* have the power to influence directly this MU development, providing funds to diversification and promotion of sustainable tourism: their power is considered strong as they fund the development of this MU at the whole EU level. *NGOs* active on environmental protection and on tourism can indirectly influence decision on national environmental policies, through their respective collaboration with sector policy makers. Their level of power is not known, probably low.

In **Croatia** it can be deduced that the majority of stakeholders identified, can have a strong power in the development of this MU. Part of them supporting the cross-sectors strategic development and acting at different level and type of organizations (e.g. the Croatian Tourist Board for tourism, the key actors in the fishery economic chain, FLAGs and maritime cluster), part of them (ministries, local authorities and also the Croatian Institute for Spatial Development) by making decisions, implementing regulations and funding opportunities of development (EU funding bodies). The main research Institutions (the Institute of Oceanography and Fisheries and the institute of Marine Research and Conservation) identified work on the investigation of the sea, covering physic, chemistry, biology and fishery/aquaculture topics. They thus provide the necessary knowledge to develop the MU combination. The power of these research institutes can be considered medium-low, providing knowledge on the resources and strategies of MU development.

In **Italy** all the actors of the seafood market chain are assumed to have strong power, since they provide the knowledge of the resource and they represent key actors in the fishery chain for their social relevance but also for the national economic income from fishery. On the basis of desk analysis and stakeholder interview, they are considered to have the power to influence directly fishery policy and specific actions/projects, starting from funding allocation. Commercial business tourism organisations show to have strong power, since they represent a key actor for the national economic income. They are considered to influence directly tourism policy at local, regional and national level. Consultancies organizations (e.g. National Federation of Fishing Companies, cooperatives and SMEs, etc.) are considered to have low power: they provide the knowledge of the resources, partially influencing the MU development strategies. Policy makers (The Ministry of

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Agriculture, Food and Forestry Policies, The Ministry of the Environment and Protection of Land and Sea, The Ministry of Health and The Ministry of cultural heritage and tourism) have strong power to control and make decisions, by implementing the Common Fisheries Policy (CFP) and other international policies (e.g. FAO-GFCM). Concerning in particular environmental protection, the Ministry of Environment, Land and Sea is responsible for Protected Areas authorizations and the definition of the activities (fishery, tourism) allowed in a protected area. Funding bodies are considered to have strong power as they fund the development of this MU at the whole EU level.

Black Sea

Policy makers at a local level in **Bulgaria** are among the actors behind some of the identified drivers and barriers for this MU combination. They have power both to control and to make decisions. Furthermore, they act as funding bodies (through their budgets) and to the extent that they have power to make decisions as to how budget funds are spent. They could remove or relax some barriers or strengthen the drivers for this MU combination. They have a strong power because their Acts (administrative, regulatory, and legislative) and decisions are binding for all economic operators and citizens performing activities or residing there. National policy makers also have a strong power to control and make decisions. Some of them are actors behind the barriers hindering the development this MU combination. Similarly, regulators are free to make decisions and to control activities that they are entitled to but in most cases are not considered to be behind the barriers. The same could be said for research organisations they could provide assistance for further development of the environmentally protected areas, and to prove that certain tourism or fishing activities are not harmful to the environment, but do not object to or promote directly this MU combination. For this reason, their type of power is weaker (medium) and is categorized as “power to influence indirectly” via e.g. policy makers. Commercial companies (e.g. mussel farms) have an indirect medium power to influence decision makers, e.g. via policy makers and NGOs. However, the latter are not identified as actors behind one or more drivers or barriers for this MU combination. Therefore, their power is low.

All **Romanian** stakeholders, which are part of central, regional or local government (policy makers and regulators), have a strong power to both control and to make decisions, and are not identified as actors imposing barriers. Research organisations have a strong power to influence decision makers, e.g. via ministries and regulators. Although they do not have the power to control and make (legislative, administrative) decisions, it is reasonable to regard their influence equal to that of a regulatory body. Local regulators almost have the same power level because they issue orders and other administrative Acts and thus could help or object to the development of this MU combination. Finally, NGOs (e.g. fishing community) and commercial business (tourism companies) also have only power to influence indirectly but not to control and make decisions. They can promote their interests via either local or regional authorities or via national policy makers. For this reason, their power is categorised as “medium” and “low”, respectively.

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18.4. Organisation of stakeholders

Eastern Atlantic

In **France**, although decentralized into Regions, has the coordination and strategic control on Environmental Protection contained within one central organisation. However, NGOs focussed on sea related issues exist as well as other individual organisations. Stakeholders contacted on Tourism and Fisheries (public agencies) are centrally controlled with regional differences, although strong clusters appear throughout the French Regions. National Coordination Agencies have a strong power to control and make decisions.

Mediterranean

In **Slovenia** fishery commercial business operators are individual marine fishermen organizations represented by coastal FLAG and the Chamber of Agriculture and Forestry of Slovenia. Touristic operators are clustered in associations at local level and at national level, representing the interests of their members (the Association of Slovene Travel Agencies, Association of Tourist Farms, etc.). Furthermore, small entrepreneurs in the sector of tourism are represented by (i) the Chamber of Commerce and Industry of Slovenia – Chamber of Hospitality and Tourism, ii) the Chamber of Craft and Small Business of Slovenia and (iii) the Trade Union for Tourism and Catering workers (Annual National Report to the European Commission -Slovenia, 2015). The Slovenian Tourist Board (STB) acts as the main national tourist organisation responsible for development, promotion and marketing of the touristic destinations. Research organizations are individual research institutions.. Regulators of fishery sector, tourism sector and environmental protection are mainly individual public administrations, belonging to the competent ministries (the Directorate of Forestry, Hunting and Fisheries within the Ministry of Agriculture Forestry and Food for aquaculture, the Directorate for tourism and internationalization within the Ministry for the Economic Development and the Slovenian Environment Agency within the Ministry for the Environment and Spatial Planning). The policy makers are mainly the above mentioned ministries involved in the MU sectors.. The regional Development Centre of Koper (RDC Koper) also acts as an individual institution at the regional level, supporting policy makers and promoting business and economic development. Concerning tourism, the Slovenian Tourist Board is the main classification society identified. It manages the “Green label Slovenia” a mark of quality used to indicate the compliance of destinations with requirements defined by the Green Scheme of Slovenian Tourism (GSST). EU Funding bodies (EFF-EMFF, INTERREG, MED, Italy-Slovenia etc.) act as individual funding organizations. NGOs and other associations act as individual organizations operating at different levels. The environmental protection NGOs are characterized by a strong clustering organization : a Consortium of five NGOs dealing with the environment collaborates with the Ministry of the Environment and Spatial Planning, through the constitution of the “Environment Centre”.

In **Croatia** fishery commercial business operators are represented by a lot of individual organizations aggregated in FLAGs (local fishermen organizations, small-scale fishermen, large-scale fishing companies and cooperatives, etc.) Local tourism organizations are variously clustered associated (e.g. associations of travel agents, hoteliers, camping sites). They are represented by the national Chamber of economy. Research organizations act as individual organizations. Port authorities (main

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ports Rijeka, Zadar, Šibenik, Split, Ploče and Dubrovnik) are individual organizations/ local administrative office regulators working as regulators/administrative supervisors. County administrative offices manage at regional level the classification and permits for private tourism accommodation. Concerning the environment, the administrative bodies of individual counties are individual organizations, which respond to the Ministry of Environment. The Ministry of Environmental and Nature Protection is organized into two Directorates: The Nature Protection Directorate (it supervises public institutions for management of protected areas, performs activities related to international cooperation and European integration, strategic planning in nature protection, coordination and monitoring of expert activities in the field of nature protection) and The Directorate for Inspection Affairs (performs administrative and expert activities related to carrying out inspections of defined requirements, permits, decisions and other acts is- sued by the Nature Protection Directorate, and supervises the implementation of direct protection, preservation and use of natural assets). The Croatian Institute for Spatial Development act, together with the ministries (Ministry of Agriculture, Fisheries and Rural Development, Ministry of Spatial Planning, the Ministry of Tourism and the Ministry of Environment) as individual organizations. Concerning tourism, the Croatian National Tourist Board (CNTB) is a strong clustering organization, promoting the development of tourism at national level. The fisheries sector in Croatia is represented by the Directorate of Fisheries, which has seven regional units working with the marine fisheries sector, in addition to the central office in Zagreb. Stakeholders of the sector are associated in chambers and cooperatives. The most significant umbrella institutions are the Croatian Chamber of Economy (CCE) and Croatian Chamber of Trades and Crafts (CCTC). EU Funding bodies (EFF, INTERREG, MED, ect.) act as individual funding organizations. FLAGs and the Croatian Maritime Industry Competitiveness cluster-MarC are strong clustering well locally assembled. Finally NGOs and other associations act as individual organizations operating at different levels.

In **Italy** the General Directorate for Marine Fisheries and Aquaculture (DGPEMAC) of the Ministry of Agriculture, Food and Forestry Policies (MiPAAF) is the main body responsible for fishery and aquaculture at the national level issuing the legal framework for pesca-tourism activities. The relative pesca-tourism policies are decentralized into Regions, which have specifically regulations with different level provisions. The Regions are local individual organizations/administrative offices coordinated by the central public administrations. The policy makers (the Ministry of Agriculture, Food and Forestry Policies, the Ministry of cultural heritage and tourism, through the General Directorate for Tourism and the Ministry of the Environment) are subdivided into several departments with various competences. FLAGs and the newly constituted National Technological Cluster on Blue Growth are strong clustering bodies well locally assembled. In general commercial business organizations, societies providing consultancies on the fishery-tourism-environmental protection topics, research institutions, NGOs can be all considered individual organizations, acting at different level and with several coordination mechanisms (e.g. Ministry for University and Research, Consortia of Universities, National Research Council, National Cluster). Some organizations are very distributed on territories and operate at local level. Concerning in particular tourism commercial business operators, they are generally associated per sub-sector and per region, with national representations as well. At local level a large number of clusters exists promoting specific territories (e.g. Touristic Parks). EU Funding bodies, as well as national and regional funds act also as individual organizations.

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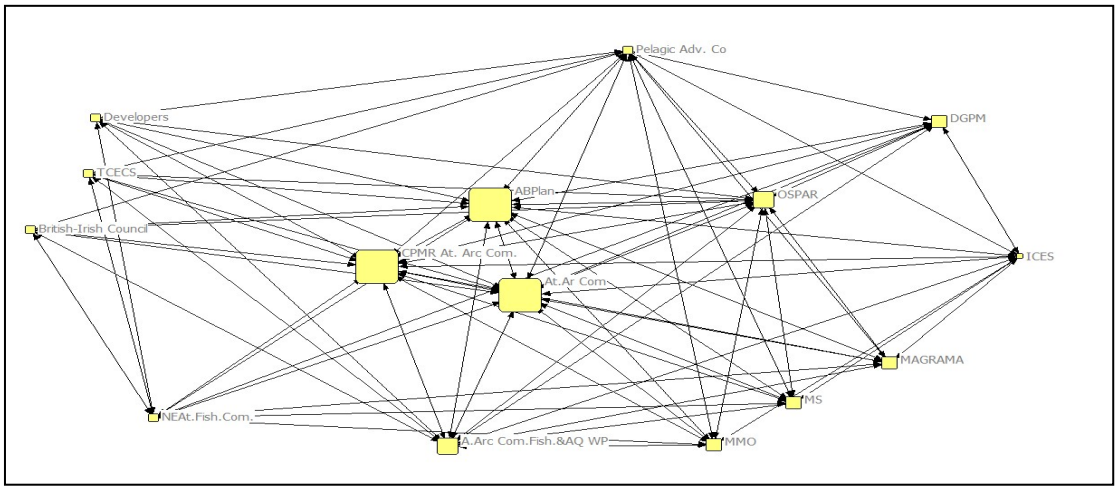
In **Greece**, the intermediary Greek Ichthyologists association is organised in a strong clustering setting, in the sense that it has a strong connection to other relevant stakehoders and could influence them regarding the MU.

In **Cyprus**, NGO relevant in the context of this MU, is organised as a couple of individual organisations. The Cypriot touristic organisation is organised in a strong clustering setting.

In **Malta**, relevant stakeholders are not found to be interacting with each other.

18.5. Sea basin stakeholder network analysis

Eastern Atlantic



Picture 53. Stakeholder network of the national and international stakeholders in the Eastern Atlantic

Visualised network structure (picture 53) for the Eastern Atlantic stakeholders recognised as important for development of MU fisheries and tourism and environmental protection shows coherent and well-connected stakeholder network, among the actors on the national and international level. Nevertheless, the strength of the network lies with central actors (e.g. ABPlan, Atlantic Arc Commissions) as they appear as communication hubs for different groups and sector representatives.

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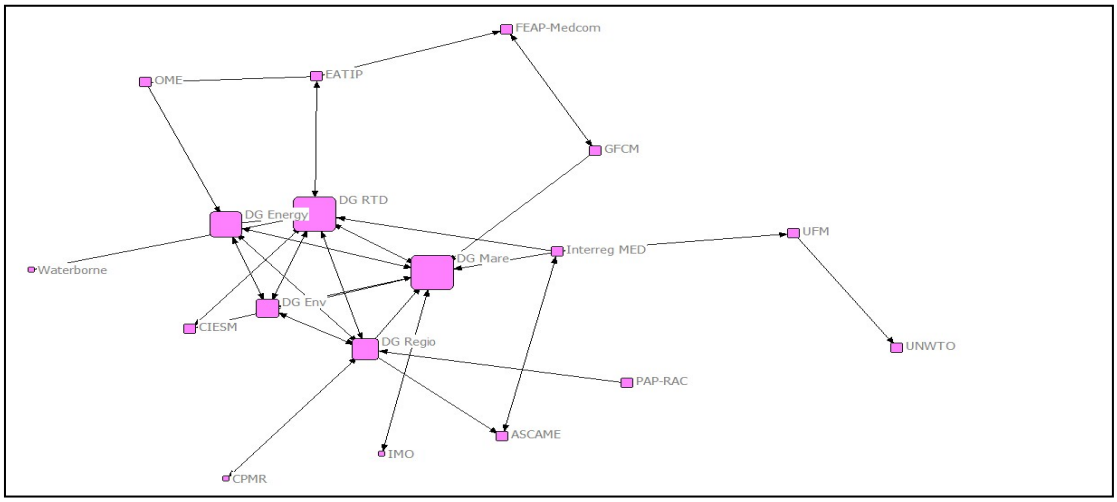
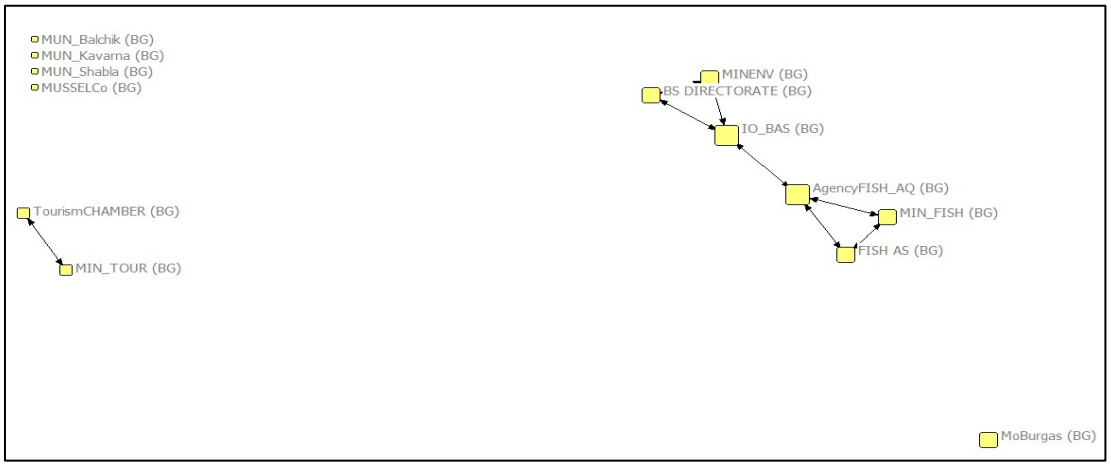
Mediterranean



Picture 54. Stakeholder network of the international stakeholders in the Mediterranean Sea

The Stakeholder network structure for the MU combination fisheries and tourism and environmental protection for the Mediterranean stakeholders, shown in picture 54, highlights the importance of EU level stakeholders for the development of this MU. From the structure it could be concluded that the communication between stakeholders that appear to be somewhat marginalised (e.g. GFCM, PAP-RAC, CIESM, CPMR) has been bridged and mostly likely to occur only through the EU level stakeholders.

Black Sea



Picture 55. Stakeholder network of the national stakeholders from Bulgaria

The network structure for the MU combination fisheries and tourism and environmental protection in Bulgaria is shown in picture 55. There is clustering of different sectors and obvious need for the

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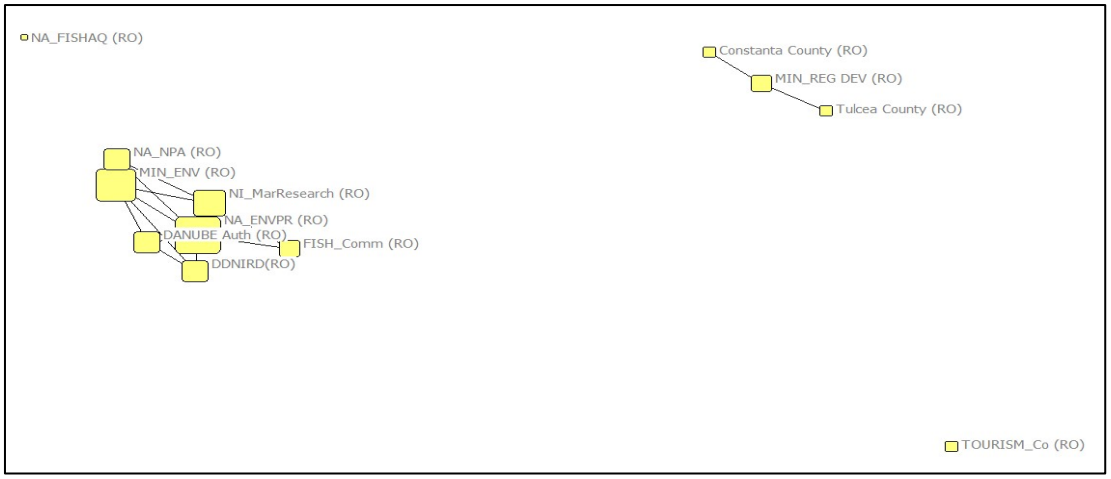
actors who will act as a bridge between the groups is evident. It is also interesting to note that communication between the main policy makers in the fishing sector (e.g. Ministry of Agriculture and Food) exists with the horizontally equal representative from the environmental protection (e.g. Ministry of environment). This connection also appears to exist via research organisation (e.g. IO_BAS – Institute of Oceanography) and fishery association (e.g. Agency FISH_AQ).



Picture 56. Stakeholder network of the national stakeholders from Romania

From picture 56, presenting stakeholders network structure for the MU combination fisheries and tourism and environmental protection, in Romania, it is obvious that there is polarization of the sectors and there is a lack of a bridging actor to foster development of this MU in Romania. From the network a lack of communication can be seen between stakeholders on the horizontal level (e.g. Ministry of Environment and Regional development).

19. O&G AND TOURISM AND AQUACULTURE

Table 15. Relevance of the O&G and Tourism and aquaculture MU combination in the EU sea basins/countries

O&G and Tourism and Aquaculture	
Sea basin	Mediterranean
Country	IT

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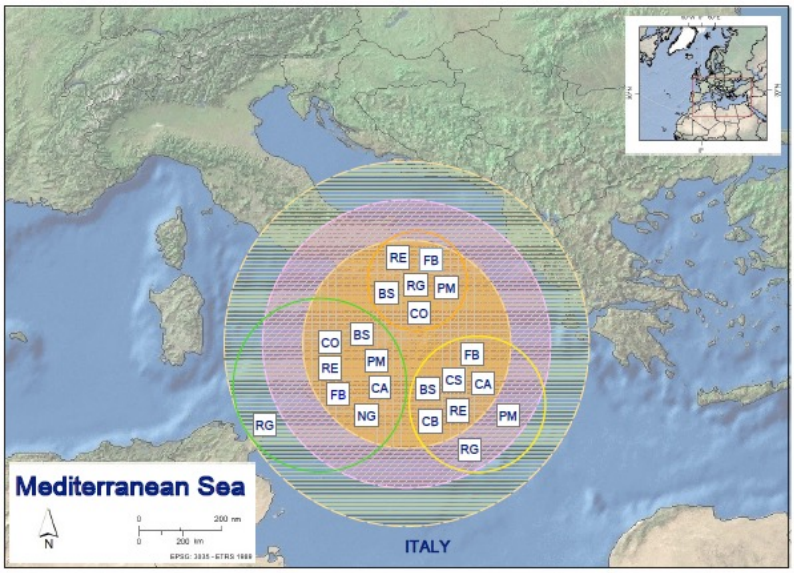
19.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Mediterranean

In **Italy** key actors identified are considered to positively act towards the development of this MU due to the increasing demand for seafood, the need to develop a sustainable and diversified tourism and exploit the opportunities offered by platform decommissioning, as extracted by desk analysis, interviews with local stakeholders and participation in the national "Forum on the future of Platforms". The newly constituted National Technological Cluster on Blue Growth and the national research institutes are assumed to act positively as interested in new technologies, siting of new areas suitable for the development of the MU, Multi-use Platforms, and exploring innovative business models. The attitude of regulators and policy makers is considered to be both positive (open to promote feasibility studies that explore different and non-traditional options) and negative (preferring already consolidated solutions and also slowed down by the absence of a clear/smart regulation for licencing, implementation and monitoring). Funding bodies are assumed to act positively towards this MU, providing financial support for its development. Their attitude is very case-specific, depending on the characteristics (e.g. location, type of re-use/multi-use, local acceptability) of the re-use/multi-use and its economic sustainability/interest. Associations of offshore contractors (e.g. ROCA) are considered to positively act towards this MU, but are still dependent by legislative/administrative and economic barriers. Engineering companies see in multi-use an opportunity to creatively differentiating their business, capitalising on their well-established expertise in O&G technologies.



Picture 57. Stakeholders' relevance, activity and attitude in relation to the O&G and Tourism and Aquaculture in the Mediterranean Sea Basin

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19.2. Geographical scale at which certain stakeholder have the power

Mediterranean Sea

In **Italy** in general the key actors act among all the local, national and international level. Commercial business actors are mainly international operators, operating at the local level. Consultancies organizations in Italy (e.g. cooperatives and SMEs) mainly work at local/regional scale (cooperatives and SMEs). There are also local consultancy companies operating in the international market. Research institutes (the Italian National Institute for New Technologies, Energy and Sustainable Economic Development, the National Research Council, RSE and several Universities) in Italy have the power both at national and international scales. Regulators and policy makers act both at local/regional (regions) and national scale (the Ministry for Economic Development, the Ministry of Environment, Land and Sea, the Ministry for Infrastructure and Transports and the Ministry of Cultural Heritage and Activities and Tourism). Funding bodies act both at national and EU level (e.g. through H2020, European Structural and Investment Funds, European Fund for Strategic Investments, Europe's Programme for SMEs, etc.)in a cross-border level, involving sea basin and sub-sea basin levels. In addition FLAGs implement a bottom-up participatory strategy addressing the stakeholder's economic, social and environmental needs at a local, national and international level.

19.3. Type and level of power

Mediterranean Sea

In **Italy** commercial business operators are considered to have strong power, as they provide the knowledge of the resource and they represent the key actors in the economic chain for the national economic income. They can influence directly the policy, addressing funds and projects (e.g. Structural Funds, Interreg Funds, and national funds), shaping investment projects and influencing permitting processes and results. They are considered to be influential at regional/local level since they can control investments on the territories, as well as having important role also in finding sound and innovative solutions and develop good projects, as derived from interview with local stakeholders. Research institutes are considered to have medium power to influence directly regulations, as they can provide the knowledge on options, potentials and technologies, but cannot directly influence policy and investments on decommissioning and MU. They also support operators in developing feasibility studies, prototypes/pilot sites and technologies; promoting the sector and MU in particular as part of a wider strategy for R&I for blue growth; advisor of ministries and licensing authorities; dialogue with local communities and decision-makers. Regulators and policy makers have strong power since they can implement regulations and take decisions. Funding bodies are considered to have strong power too, since they can fund the development of this MU related to decommissioning. Thus they have the power to influence directly policies and fund/co-fund projects and initiatives. In addition the Italian Aquaculture Associations can have a strong power to influence directly the policy and the funding programs, acting at different level and type of stakeholder profiles.

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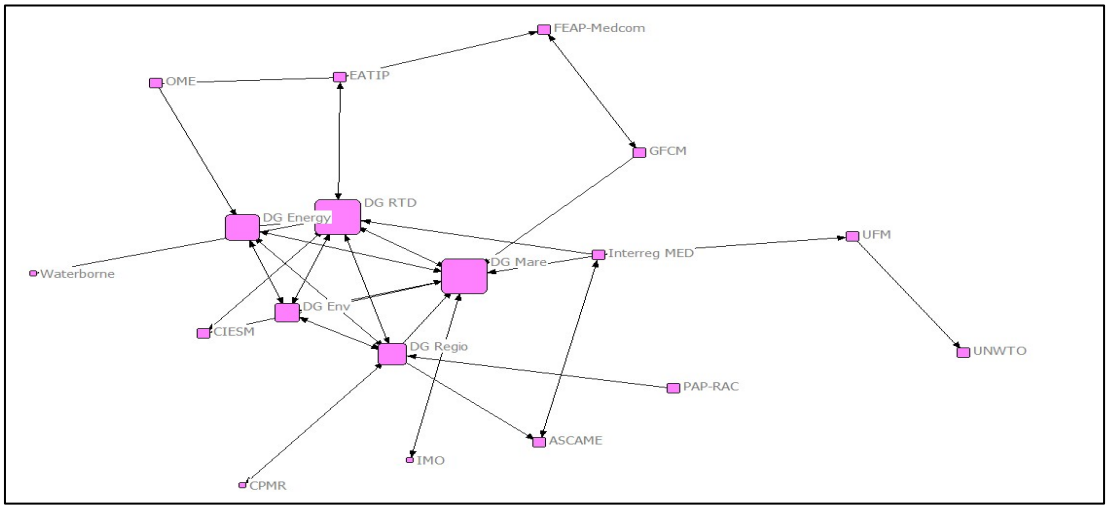
19.4. Organisation of stakeholders

Mediterranean

In **Italy** the Regions act as local individual organizations/administrative offices coordinated by the central public administrations. The policy makers are individual ministries (the Ministry of Economic Development, the Ministry of Agriculture, Food and Forestry Policies, the Ministry of cultural heritage and tourism, through the General Directorate for Tourism), which act under the coordination of the Presidency of the Council of Ministers. In general commercial business organizations, societies providing consultancies on O&G-tourism-aquaculture topics, research institutions can be all considered individual organizations, acting at different level and with several coordination mechanisms (e.g. Ministry for University and Research, Consortia of Universities, National Research Council, National Cluster). Some organizations are very distributed on territories and operate at local level. Concerning in particular Oil and Gas, commercial business operators and business-support consultancies can be considered all individual organizations, also operating and lobbying through associations (e.g. Assomineraria). FLAGs and the newly constituted National Technological Cluster on Blue Growth are strong clustering bodies well locally assembled. In the O&G sector there are some classification societies active. They are individual organizations, referring to international accreditation/ standardization bodies. Funding bodies are finally individual investors, often referring to policies and strategies approved at higher level.

19.5. Sea basin stakeholder network analysis

Mediterranean Sea



Picture 58. Stakeholder network in the Mediterranean Sea

Picture 58 presents a stakeholder network structure of actors involved in the MU combination Oil &Gas and Tourism and aquaculture. From the network development of the MU, this has the highest influencers from the different aspects on the EU level. Yet, this well-connection in diverse sectors

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may be seen, as well as their role as policy makers, as an asset for taking initiative for this particular MU. Nevertheless, it is important that these key actors bring marginalised stakeholders from the sectors, to the network that may further influence decisions from EU to the Mediterranean and further to the national development.

20. O&G AND RENEWABLES

Table 16. Relevance of the O&G and Renewables MU combination in the EU sea basins/countries

O&G and Renewables	
Sea basin	Mediterranean
Country	IT

20.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Mediterranean

In **Italy** the key stakeholders identified are considered to positively act towards the development of this MU, even if conditioned by legislative/administrative and economic barriers. The newly constituted National Technological Cluster on Blue Growth, the Italian National Institute for New Technologies, Energy and Sustainable Economic Development and the national research institutes are assumed to act positively as interested in the MU development research areas: new technologies, siting of new areas suitable for the development of the MU, Multi-use Platforms. The attitude of regulators and policy makers is quite scattered among actors: from positive (open to promote feasibility studies that explore different options) to negative (preferring already consolidated solutions and thus acting imposing barriers, blocking permissions). Funding bodies are also considered to act positively towards this MU, providing financial support for its development. Their attitude is very case-specific, depending on the characteristics (e.g. location, type of re-use/multi-use, local acceptability) of the re-use/multi-use and its economic sustainability / interest. Associations of offshore contractors are considered to positively act towards this MU, but are still conditioned by legislative/administrative and economic barriers. Engineering companies see in multi-use an opportunity to creatively differentiating their business, capitalising on their well-established expertise in O&G technologies.

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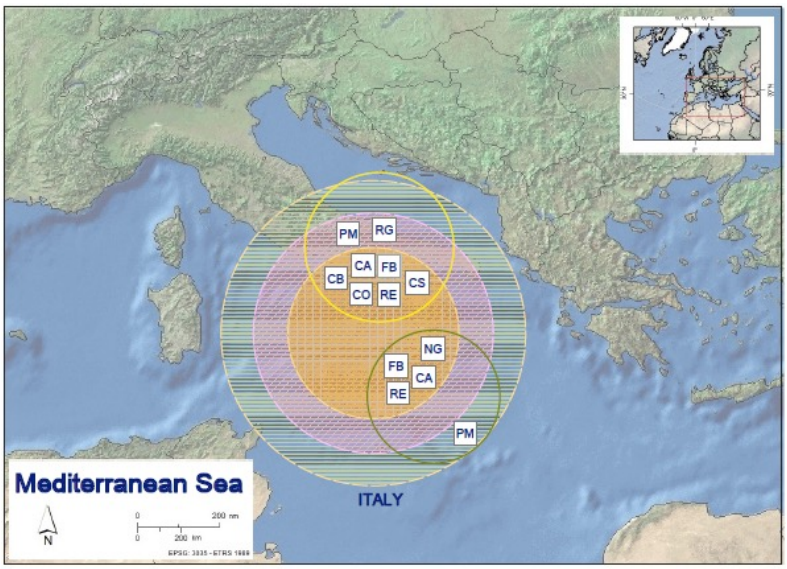

Picture 59. Stakeholders' relevance, activity and attitude in relation to the O&G and renewables in the Mediterranean Sea Basin

20.2. Geographical scale at which certain stakeholder have the power

Mediterranean

In **Italy** in general the key actors act among local, national and international level. Commercial business actors are mainly international operators, operating at the local level. There are also local consultancy companies operating in the international market. Research institutes (e.g. the Italian National Institute for New Technologies, Energy and Sustainable Economic Development, the National Research Council and several Universities) in Italy have the power both at national and international scales. Regulators and policy makers act both at local/regional (regions) and national scale (the Ministry for Economic Development, the Ministry of Environment, Land and Sea, the Ministry for Infrastructure and Transports and the Ministry of Cultural Heritage and Activities and Tourism). Funding bodies act both at national and EU level e.g. through H2020, European Structural and Investment Funds, European Fund for Strategic Investments, Europe's Programme for SMEs, etc.).

20.3. Type and level of power

Mediterranean

In **Italy** commercial business operators are considered to have strong power directly influencing policy decisions, due to their overall socio-economic relevance. In particular concerning offshore wind farms, they are supposed to have the power to influence administrations in promoting farms in different ways (legislation, permitting, incentives, etc.). They are considered to be very influential at regional/local level since they can control investments on the territories, as well as having important

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role also in finding sound and innovative solutions and develop good projects, as derived from interview with local stakeholders. Consultancy organizations are considered to have medium power, mostly at local level. They can support and influence policy and legislation, but their power is mostly related to the influence they have on local communities and politicians. Research institutes are considered to have medium power, as they can provide the knowledge on options, potentials and technologies, but cannot directly influence policy and investments on decommissioning and MU. They also support operators in developing feasibility studies, prototypes/pilot sites and technologies; promoting the sector and MU in particular as part of a wider strategy for R&I for blue growth; advisors of ministries and licensing authorities; dialogue with local communities and decision-makers. Regulators and policy makers have strong power since they can implement regulations and take decisions. Funding bodies have strong power too, since they can fund the development of this MU related to decommissioning. Thus they have the power to influence directly policies and fund/co-fund projects and initiatives.

20.4. Organisation of stakeholders

Mediterranean

In **Italy** the Regions are local individual organizations/ administrative offices coordinated by the central public administrations. The policy makers are individual ministries (the Ministry of Economic Development, the Ministry of Infrastructure and Transport and the Ministry of Environment and Protection of Land and Sea), which act under the coordination of the Presidency of the Council of Ministers. In general commercial business organizations, societies providing consultancies on O&G-renewable energies topics, research institutions, NGOs can be all considered individual organizations, acting at different level and with several coordination mechanisms (e.g. Ministry for University and Research, Consortia of Universities, National Research Council). Some organizations are very distributed on territories and operate at local level. Concerning in particular Oil and Gas, commercial business operators and business-support consultancies can be considered all individual organizations, also operating and lobbying through associations (e.g. Assomineraria). In the O&G sector there are some classification societies active. They are individual organizations, referring to international accreditation/ standardization bodies. Funding bodies are individual investors, often referring to policies and strategies approved at higher level.

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21. FISHERIES AND ENVIRONMENTAL PROTECTION

Table 17. Relevance of the fisheries and environmental protection MU combination in the EU sea basins/countries

Fisheries and Environmental Protection		
Sea basin	Black Sea	
Country	BG	RO

21.1. Overall activity and attitude of relevant stakeholders in relation to the MU

Black Sea

This MU combination is identified both in **Bulgaria** (near Burgas, Chengene Skele Bay) and in **Romania** ("VamaVeche – 2 Mai" Marine Reserve)**.** It could be said that all stakeholders, who to one extent or another are involved in it, are interested in the co-existence of these two activities. Local policy makers in **Bulgaria**, to the extent that they are responsible for the local policy in the area (including for provision of communal services and for funding certain projects) – would strongly support the MU combination. Environmental policy makers and funding bodies also favour it. The same could be said for policy makers in the area of fisheries. Furthermore, fisheries regulators provided valuable information as to how fishing could be performed in protected areas. Lastly, supportive are all relevant NGOs and organisations, representing the fishermen community to the extent that they advocate for the interests of individual fishermen. All **Romanian** public stakeholders, except the research organisation, support environmentally friendly fishing activities in marine protected areas. The same could be said for all NGOs and other organisations, representing fishing communities. Lastly, the research organisations responsible for maintaining and managing the MU combination provided valuable information about the area during the interview.

The overall attitude of some relevant Black sea stakeholders both in **Bulgaria** and **Romania** is positive but the stance of others is classified as "negative but can positively influence barriers". The attitude of the **Bulgarian** local policy maker is positive and could be regarded as a "driving force" because they provide measures and funds for development of residential areas and the docks for fishing boats in the location where the MU is found. The attitude of national environmental policy makers is negative to the extent that they impose barriers related to environmental protection, but they can positively influence them after an environmental impact assessment of the proposed measures/activities. In case of positive statements, policy makers could remove or relax certain restrictions. Fisheries funding bodies are a driving force for this MU combination because of funding operations in support of fishing activities, including of small fishing boats. The fisheries regulator has a negative stance to the extent that it controls fishing activities, including in protected areas but if all requirements are met could remove or relax the barriers (if such barriers to the development of this MU combination exist at all). Finally, it could be said that the NGOs have a positive attitude to the extent that they are the driving force behind the activities aimed at development of the area and preservation of local fishing traditions.

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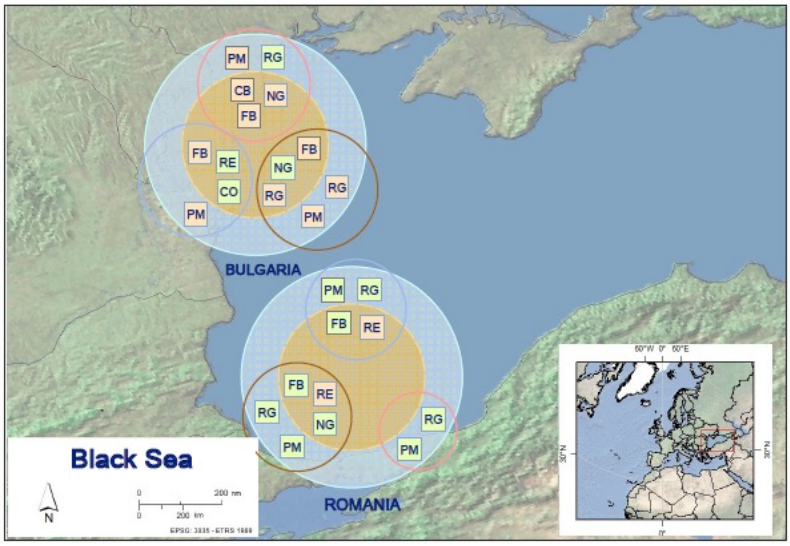
The attitude of the **Romanian** regional policy makers is positive to the extent that they support all measures aimed at economic and social development and at preservation of the natural environment. On the other hand, the national environmental policy makers have a more or less negative stance to the extent that they may impose further restrictions and/or requirements on marine protected areas. Nevertheless, they also act as a driver for this MU combination, because their commitment with regards to policy and legislation on natural protected areas very much helps their development. The attitude of regulators is also categorised as "negative but can positively influence barriers" some of them may support expansion of the marine protected area, and to permit fishing activities there, while some may deny issuing fishing permit in protected areas, but still may issue a positive statement if changes in legislation and/or in marine environment occur. It should be said, however, that the regulatory bodies help quite a lot for adopting clear legislation with regard to permitted activities, including fishing, in natural protected areas (a driver for this MU combination). The attitude of the fishing community is also positive, because its members still can go into the sea to catch fish (provided that they meet the requirements in terms of fishing boats and fishing tools). Lastly, research organisations also have a positive stance towards this MU combination. In particular, their management and monitoring activities promote/support both environmental protection and fishing.



Picture 60. Stakeholders' relevance, activity and attitude in relation to the Fisheries and Environmental Protection in the Black Sea Basin

21.2. Geographical scale at which certain stakeholder have the power

Black Sea

Policy makers at a local level in **Bulgaria** are stakeholders of local relevance. Their powers and adopted Acts are applicable / enforceable only for the entities and citizens performing their activity or residing on their territory. National environmental policy makers have a geographical scale of

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power at the national level. The same is valid for the national fisheries policy makers – their Acts and powers are of national relevance. Relevant regulatory authorities also operate at national level. The fishermen community, however, has more or less local geographical scale of power because its activities are relevant only to the area where the MU combination is located.

Romanian regional economic policy makers have a regional power. Their acts and activities are relevant only in the area where the MU combination is identified. All other stakeholders – national environmental policy makers, regulators and funding bodies - have powers at the national level. The same is valid for research organisations – their research activity is important not only for the area of the MU combination but for Romania as a whole. However, the geographical scale of power of the fishing community is at local or regional level because fishermen are, more or less, locally organised.

21.3. Type and level of power

Black Sea

In **Bulgaria**, local policy makers are one of the actors behind some of the identified barriers. They have a strong power, both to control and to make decisions (relevant at local level only). Also, in most cases the local policy makers act as a funding body to the extent that it has power to take decision as to how budget funds are to be spent. They can remove factors that underpin barriers that have hindered the development of this MU combination in the past. National environmental policy makers also have strong power to control and make decisions. They are an actor behind one of the main objections to this MU; in particular the one that concerns the overall ban on construction activities in protected areas. However, if construction activities do not negatively impact the natural environment, a building permit might be issued. National policy makers, and funding bodies in the field of fisheries policy, have strong powers to control and make decisions but are not identified as actors behind one of the barriers for this MU combination. The same can be said for fisheries regulators. To a great extent they are independent and have a strong power to control fishing activities and to take decisions. However, they are not a barrier for this MU combination. Lastly, the fishermen community only has power to influence decisions indirectly via, for example, local authorities. However, it is not an actor which imposes barriers, or in another way prevents further development of this MU combination. Furthermore, its power is much weaker (categorised as “low”) because it is not legally established and its activities and decisions are not binding for its members.

In **Romania**, all the stakeholders who are part of the central, regional or local government (e.g. policy makers, regulators and funding bodies), have power both to control and to make decisions (strong), and are not identified as actors imposing barriers. On the contrary – some of them are behind the factors that underpin the drivers for this MU combination. Research organisations have power to influence decision makers, e.g. via environmental policy makers. However, it should be noted that a research organization manages the area where the MU combination is located, and is a member of the Romanian MSP Committee. Therefore, although it does not have power to control and make (legislative, administrative) decisions, it is reasonable to regard its influence equal to that of a regulatory body. Finally, fishing communities also only have the power to influence indirectly

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but not to control and make decisions (medium power). They can promote their interests via either local or regional authorities.

22. Analysis of stakeholders activity in past and on-going multi-use projects

Eight past and on-going MU related projects have been screened from the point of view of stakeholder engagement. These projects are following:

- MARIBE
- MARINA
- MERMAID
- TROPOS
- H2OCEAN
- SUBMARINER
- MUSES
- SOMOS

A master list containing stakeholder workshop attendance, event speakers, project partners and stakeholder advisory board lists has been compiled. In addition, the list of MUSES interviewees was also added to this list. Stakeholders who did not attend the workshop or interview but were invited have also been taken into account. The final 'master list' of stakeholders involved in past and on-going MU projects totalled 629 organisations (including multiple individuals from the same organisation).
The following major themes have been identified and used for the analysis:

- Aquaculture
- Energy
- Tourism
- Environment
- Shipping
- Technology/engineering
- Cross-sector (maritime in general)
- Other (themes that showed up in minority including health care, food, agriculture, media, innovations, bio-economy, etc.)

These eight major themes have been represented in past and on-going MU projects. The themes relate to the sector or field in which these organisations operate. These themes do differ to some extent from the ones that are used under MUSES project stakeholder analysis. The themes followed those already established by past/on-going projects, because finding out which organisation belongs to what theme/category would not be feasible in the scope of MUSES project (information often available only in that organisation's national language).

Identification of **sub themes** was also deemed relevant as organisations from sectors such as aquaculture could only be specialised in one field of aquaculture. For example within aquaculture

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there are associated sub-themes for seaweed, fish and mussels. However, this was a difficult task for the energy theme, as organisations involved in past projects, such as DONG or Statoil, have stakes in both renewable and conventional sources of energy. Hence, differentiation was made only where an energy organisation and the MU project considered only one type of energy source in the project. Differentiation between different types of renewable energies (i.e. wind, wave, etc.) was also made using the same principle.

For each theme, a category was assigned. For example, a stakeholder working in the field of aquaculture was assigned a certain category depending on the nature of the organisation. These categories do differ to some extent from the ones that are used under MUSES project stakeholder analysis. The following categories have been used for classification:

- Research organisations (universities, institutes)
- Policy makers
- Commercial businesses
- Intermediaries (such as clusters, associations, chambers and councils)
- Business support – Consultancy
- Funding bodies
- Regulators (e.g. licencing bodies)
- NGOs and other intermediaries representing society at large (environmental NGOs, local citizens organisations)
- No category

The following charts present the analysis of 629 stakeholders (organisations) from past and on-going MU projects. Figure 1 presents stakeholders' activity in relation to the past and on-going MU projects. The attributes, *proactive*, *reactive*, and *dormant* follow the definitions given in the chapter 5. Definition of attributes.

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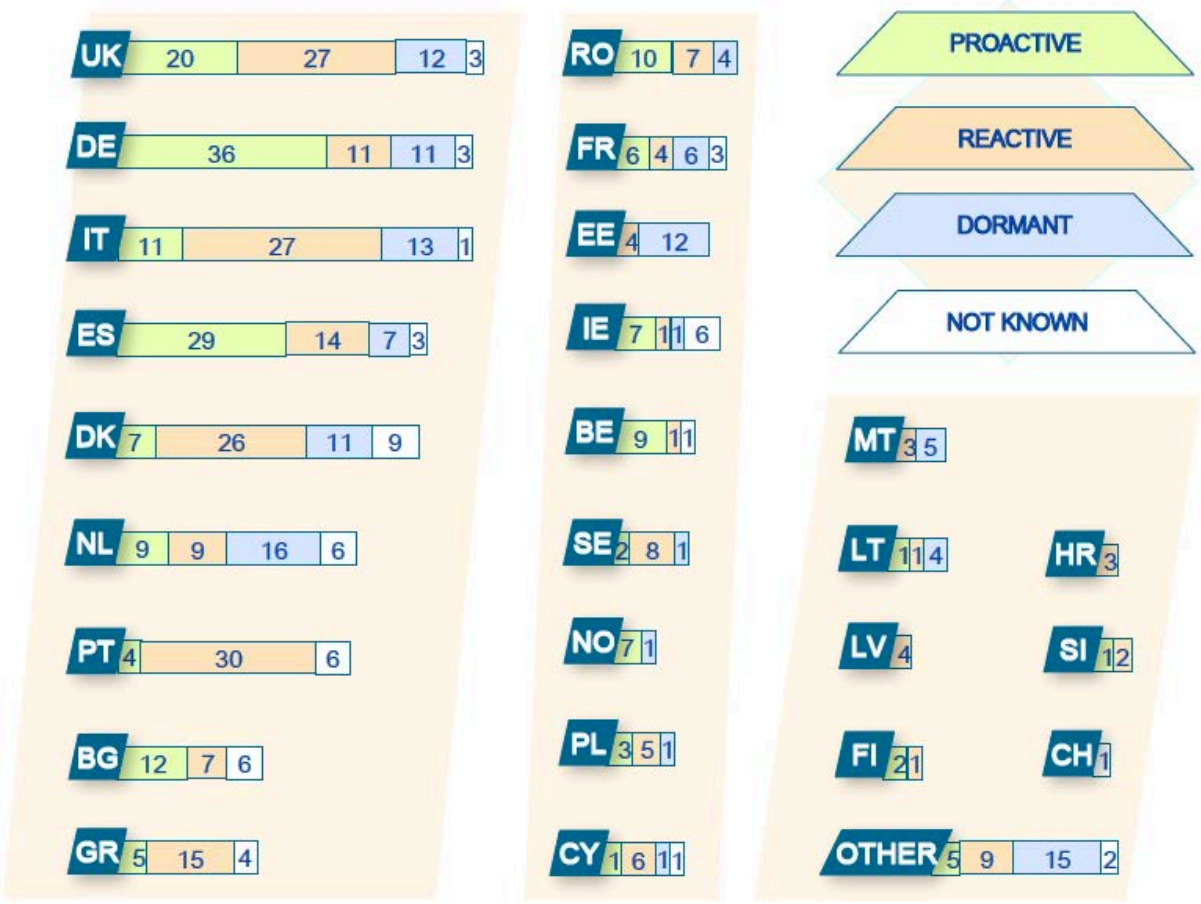

Figure 1. Number of stakeholders in each country according to their activity in relation to the MU

While UK has the highest total number of identified stakeholders, Germany has the highest number of proactive stakeholders followed by Spain and UK. Some non-EU countries have also participated in past and on-going MU projects, and these are placed in the category *other*.

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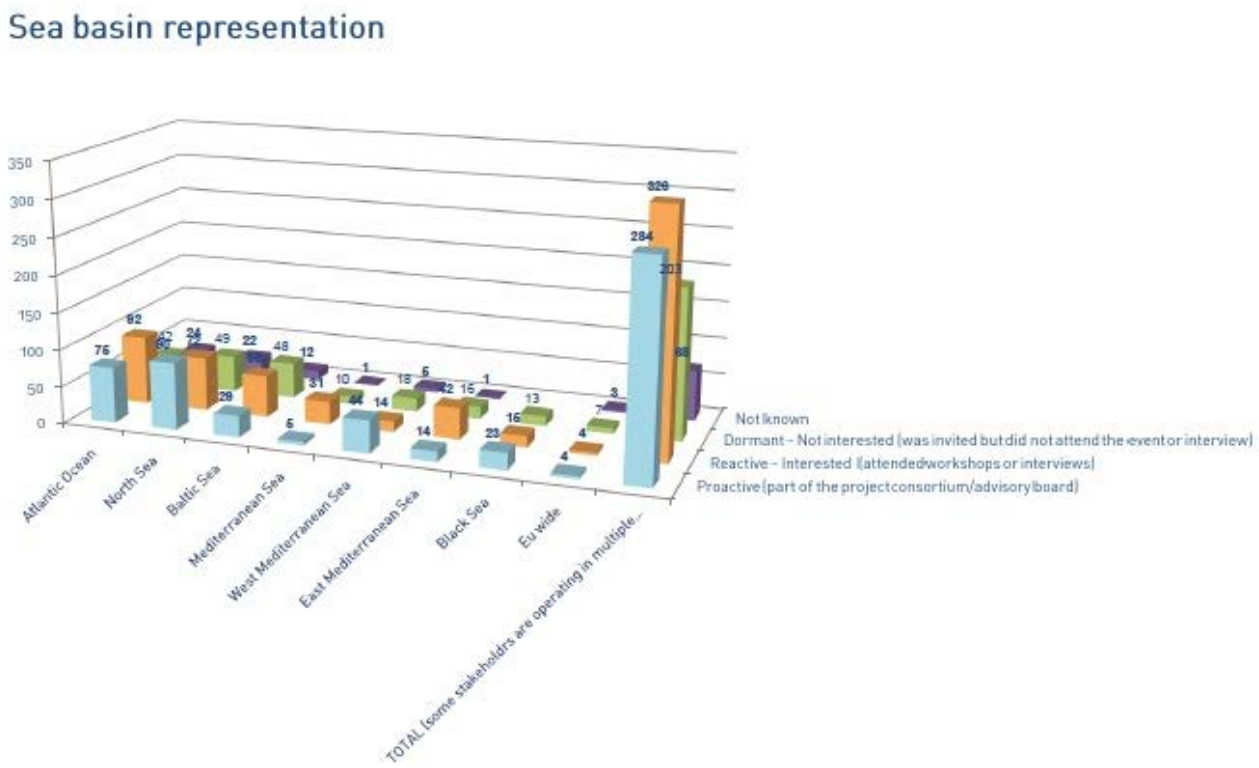

Figure 2. Sea basins representation in MU projects

The figure 2. presents the number of stakeholders according to their activity in relation to the MU projects (the total number on the chart counts more than the overall total number of stakeholders (629), because if one stakeholder operates in two sea basins, it is accounted in each of these sea basins). The stakeholders are the most proactive in the North Sea, followed by the stakeholders from the Atlantic.

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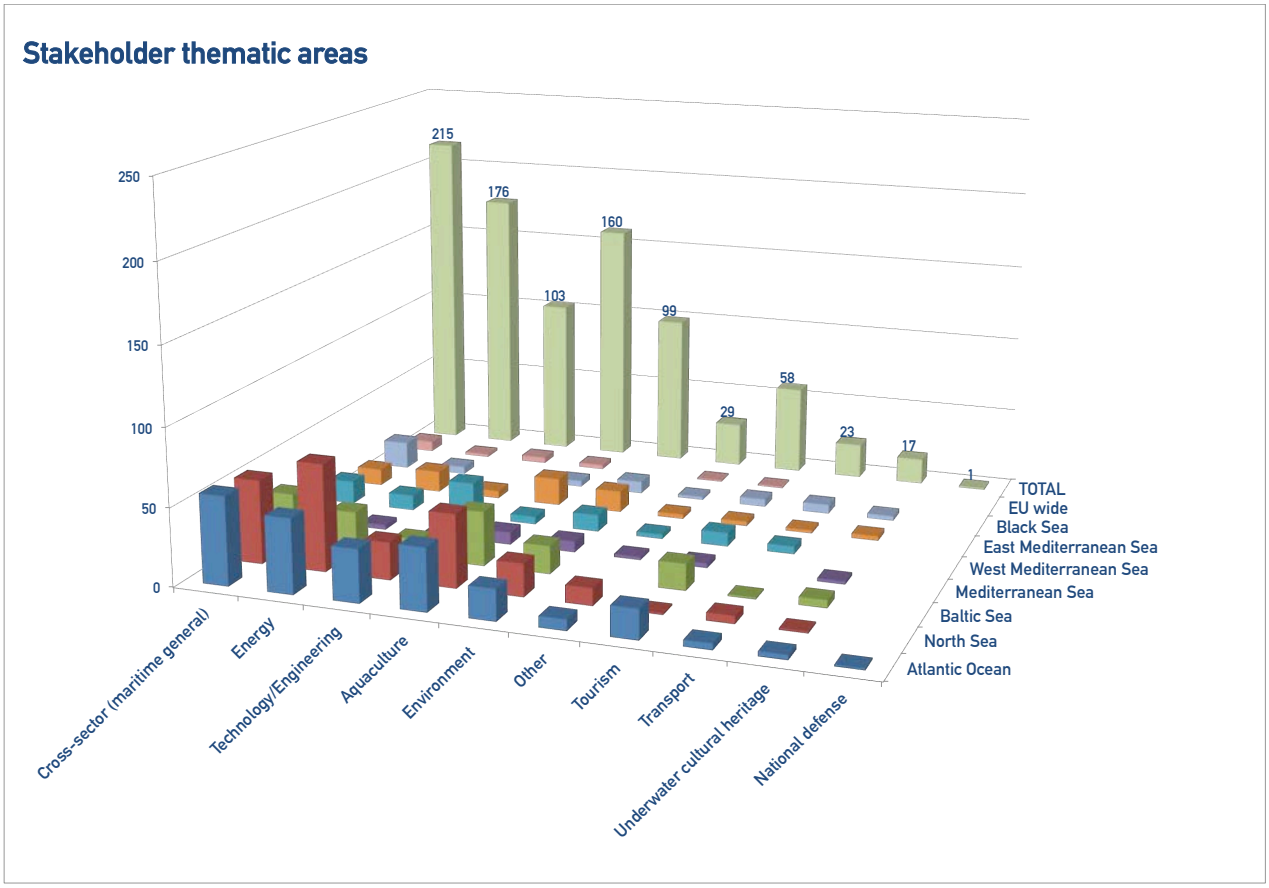

Figure 3. Representation of stakeholders from different thematic areas per sea basin

The figure 3 is showing which stakeholder themes were dominant in each of the sea basins. In general, cross-sectoral stakeholders as well as stakeholders working in the area of energy, aquaculture and technology/engineering are the most abundant.

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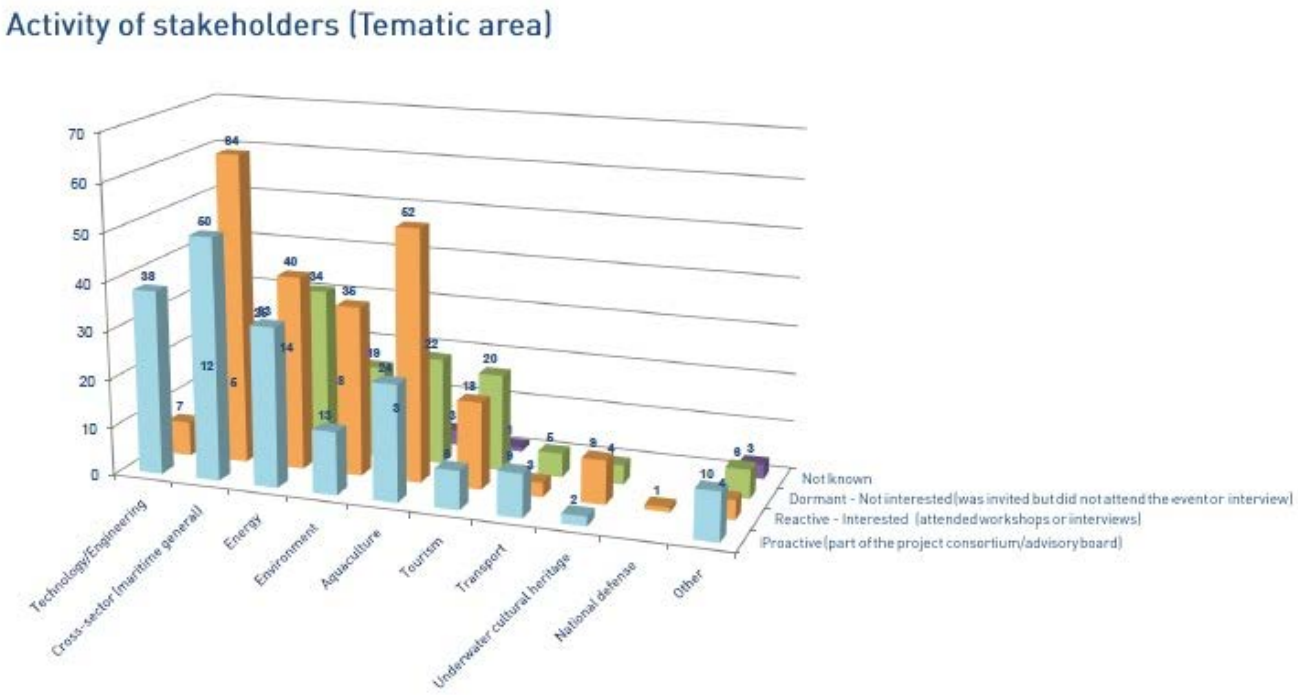

Figure 4. Representation of stakeholders' activity in relation to the MU by the thematic area in which they operate

The figure 4 shows how active are stakeholders in each of the thematic fields. The most proactive are those working in cross-sector organisations, followed by technology/engineering, energy and aquaculture. However, most of the stakeholders that have been identified are also classified as cross-sector. The most reactive are also those in the cross-sector fields, followed by aquaculture, energy and environment. While technology and engineering are involved as partners and members of the advisory boards in projects they are not so often engaged as stakeholders. On the other hand, those working in the environmental field are more often in the stakeholder role than being part of the project partnership.

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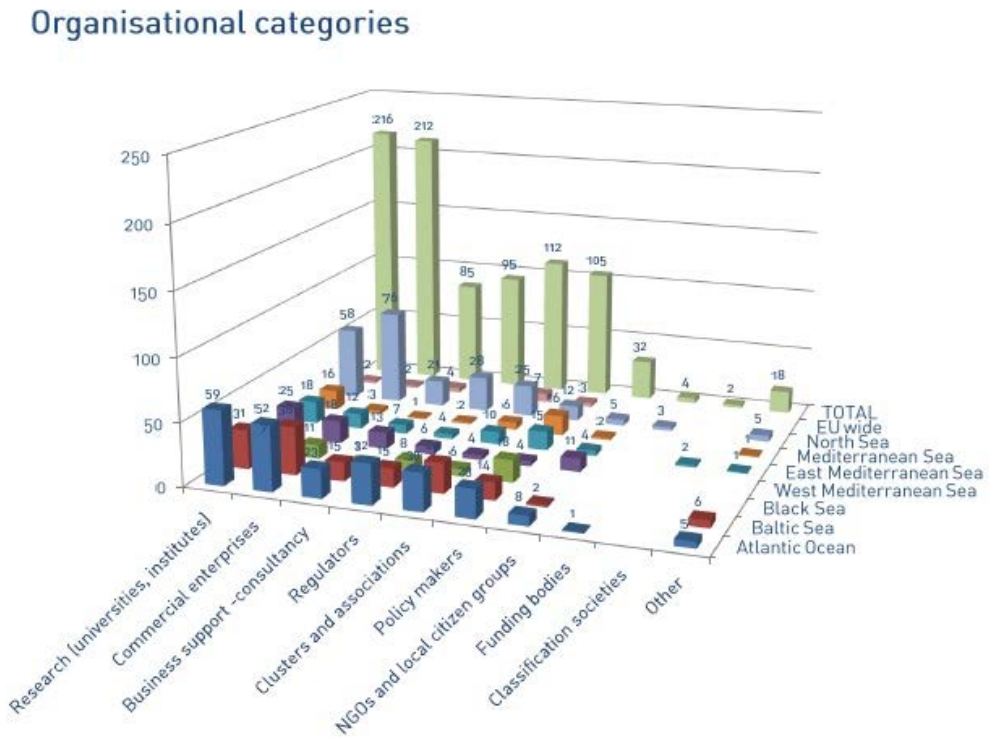

Figure 5. Representation of stakeholder from different organisational categories per sea basin

In the figure 5 it could be observed that the highest number of identified stakeholders come from the research institutes and commercial enterprises, mainly from the Eastern Atlantic and North Sea, followed by the clusters and associations and policy makers.

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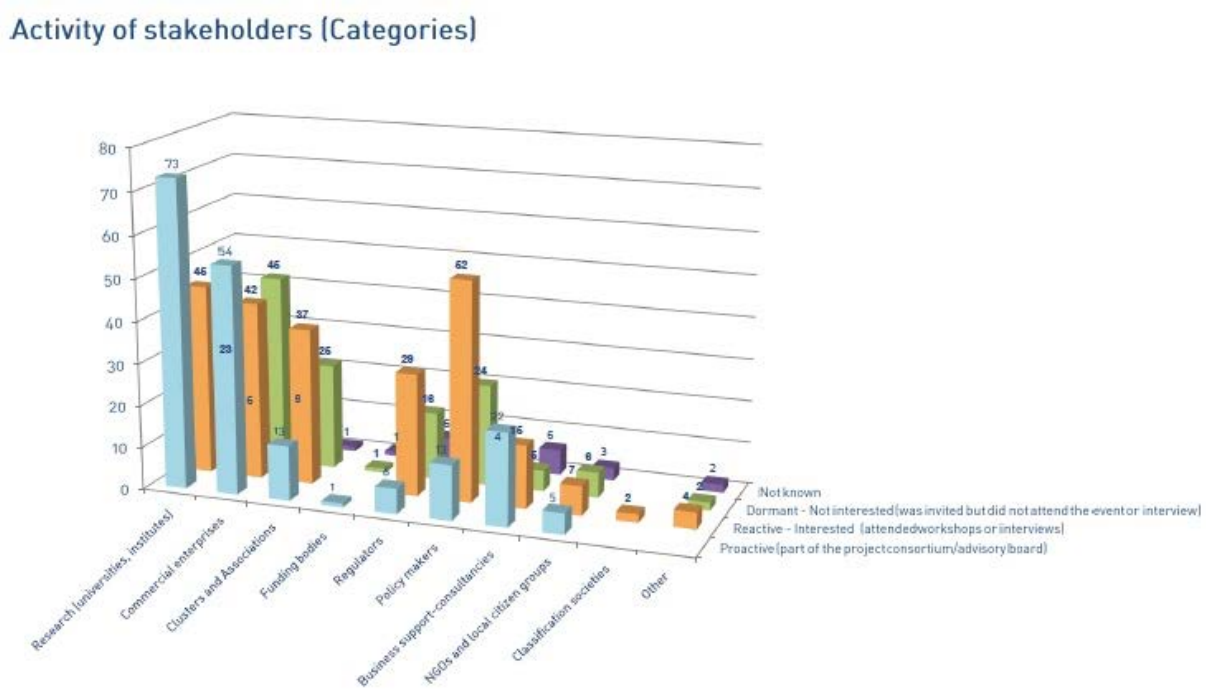

Figure 6. Representation of stakeholders' interest in MU by their category

In the figure 6it could be observed that stakeholders representing research institutes and commercial enterprises are proactive, while clusters and associations, and policy makers are in a large number reactive.

23. Connection with Dissemination and Communication Plan

A number of attributes have been analysed for each of the stakeholder categories as part of the Stakeholder Profiles preparation. The information collected is meant to enable project partners to make informed decisions on whom to engage for the Action Plan development process. Stakeholder engagement for the Action Plan, will consider those stakeholders who need to be directly involved in the development as well as the implementation of the Action Plan. Analysis on the activity of stakeholders in past and on-going projects provides a good base for understanding stakeholders' activity, or even interest in this topic (partners have populated a list of approximately 629 stakeholders that are in some way involved in past and on-going MU projects).

However, a number of other attributes have also been examined. In particular, geographical scale at which a stakeholder has the power, their organisation (strong clustering, dispersion, etc.), type and level of power. All of these attributes can tell much about the importance of a stakeholder in relation to the MU concept, and their strength when it comes to plan implementation. The following matrix presents an example of one stakeholder theme (and also one MU combination in one country) where colours have been used to differentiate between different values. Darker colours are

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meant to indicate more importance for the Action Plan engagement. Hence, the stakeholder categories that are to be engaged further are those framed in grey, in this case: Regulators, Policy makers and NGOs, including other representatives of society-at-large.

OFFSHORE WIND	Geographical scale at which certain stakeholder has the power	Organization of stakeholders	Type of power	Level of power
Commercial Business	Local/Regional	Couple of individual organizations	Power to influence indirectly	Low
Research organizations	National	Strong clustering	Power to influence indirectly	Low
Regulators	Sea Basin	monopoly of one organization	power to control and make decisions	strong
Policy makers	Sea Basin	monopoly of one organization	power to control and make decisions	strong
Insurance companies	National	Couple of individual organizations	Power to influence indirectly	medium
Funding bodies	National	Couple of individual organizations	Power to influence indirectly	medium
NGOs/ society at large	EU	Couple of individual organizations	Power to influence indirectly	medium

Figure 61. An example of the matrix with stakeholders who need to be directly involved in development as well as the implementation of the Action Plan

	Geographical scale at which certain stakeholder has the power	***Organisation of stakeholders***	***Type of power***	***Level of power***
Light orange	Local/regional	Very few organisations	Power to influence indirectly	Low
Medium orange	National	Couple of individual organisations	Power to influence directly	Medium
Dark orange	Sea Basin EU	Monopoly of one organisation Strong clustering	Power to control and make decisions	Strong
Beige	Other	Other	Other	Other

Figure 62. Legend for the figure 61

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Matrixes are developed for each of the countries and each of the combinations in those countries. This counts to over 150 matrixes. The next step is to filter each country and theme/category in the master list of 629 stakeholders and assign each stakeholder a colour according to the matrixes for that country.

As part of the stakeholder engagement strategy for the Action Plan, each stakeholder from the master list will be targeted with a certain set of engagement methods defined for the assigned colour. For example, those marked in dark orange and 'power to control/make decisions' will be the only targeted for workshops. Certain methods are then deleted on a descending gradient according to lesser importance/ranking as follows:

- Dark Orange + Control/Decision Making = Workshops, Interviews, questionnaires, all other social media
- Dark Orange + **NO** Control/Decision Making = Interviews, questionnaires, all other social media
- Medium Orange = questionnaires, all other social media
- Light Orange = all other social media

If a stakeholder category under a certain theme for MU combination X in one country is marked as dark orange, the same category/theme might be, in the same country, marked light orange for another MU combination. In that case, the highest rank attributed to the repeating stakeholder would be the default, as these stakeholders would still have to be contacted given their importance to a certain aspect with regards to the Action Plan.

24. Conclusions and Next Steps

Understanding of the Stakeholders' Profiles is one of the crucial steps in the preparation of the MUSES Action Plan. This report is a result of comprehensive stakeholder analysis which allowed for better understanding of who are the relevant stakeholders for each of the combinations, and what are their main attributes and attitudes towards the MU development. For the purpose of the analysis, it was also relevant to gain an overview on who has already been actively involved in MU projects. This provides hints on who might be interested in supporting the MUSES Action Plan development. As an extensive knowledge of social systems in a given country is needed to understand how the stakeholders are organised (e.g. a strong clustering of multiple organisations vs. a monopoly of one), this aspect of the analysis was particularly challenging and has identified important knowledge gaps to be addressed in the next steps of the project.

It could be observed that the highest number of identified stakeholders come from the research institutes and commercial enterprises, mainly from the Eastern Atlantic and North Sea, followed by the clusters and associations, and policy makers. The stakeholders are extensively involved in MU projects are in the North Sea, followed by the stakeholders from the Atlantic. This might be due to the fact that in these sea basins MU development is indeed the most advanced. While the UK has the highest total number of identified stakeholders, Germany has the highest number of proactive stakeholders followed by Spain and the UK.

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In general, the main actors to be involved in development of one MU are the representatives of two different uses usually represented by commercial enterprises, and a public regulatory body (including sectoral and/or cross-sectoral regulator and/or policy makers, depending on the case). Therefore, for MU to happen, interest would need to come from at least two sides; both uses or one use and a regulator. However, there are some exceptions, such as in the case od UCH, environmental protection and tourism, where three, instead of two uses are involved. Moreover, in this case, two out of three uses are non-profit, and therefore not represented by a commercial enterprise. Taking this into consideration, it is crucial to identify, in the next steps of the project, which engagement methods for the preparation of the Action Plan are the most suitable for each of the stakeholder groups. This analysis also allowed for better understanding on whom the actions in the Action Plan should be addressed.

For all the sea basins, apart from the Black Sea, the most relevant stakeholders fall under the energy theme. This is mainly due to the fact that 12 out of 17 MU combinations involve some type of energy sector. The next three stakeholder themes of the highest relevance are the aquaculture (present in seven combinations), environmental protection (present in five combinations), and tourism (present in five combinations). On the other hand, in the Black Sea, the most relevant stakeholders are the representatives of the environmental theme, followed by fisheries and cross-sector.

As stakeholder analysis is an iterative process, the immediate next steps will include presentation and validation of the results at various events and bridging the knowledge gaps identified in this report. Appropriate methods and means for stakeholder engagement will also be better defined in the next steps. The targeted approach that is employed is meant to ensure that the right type of stakeholders are engaged for the right aspect of the Action Planning process.

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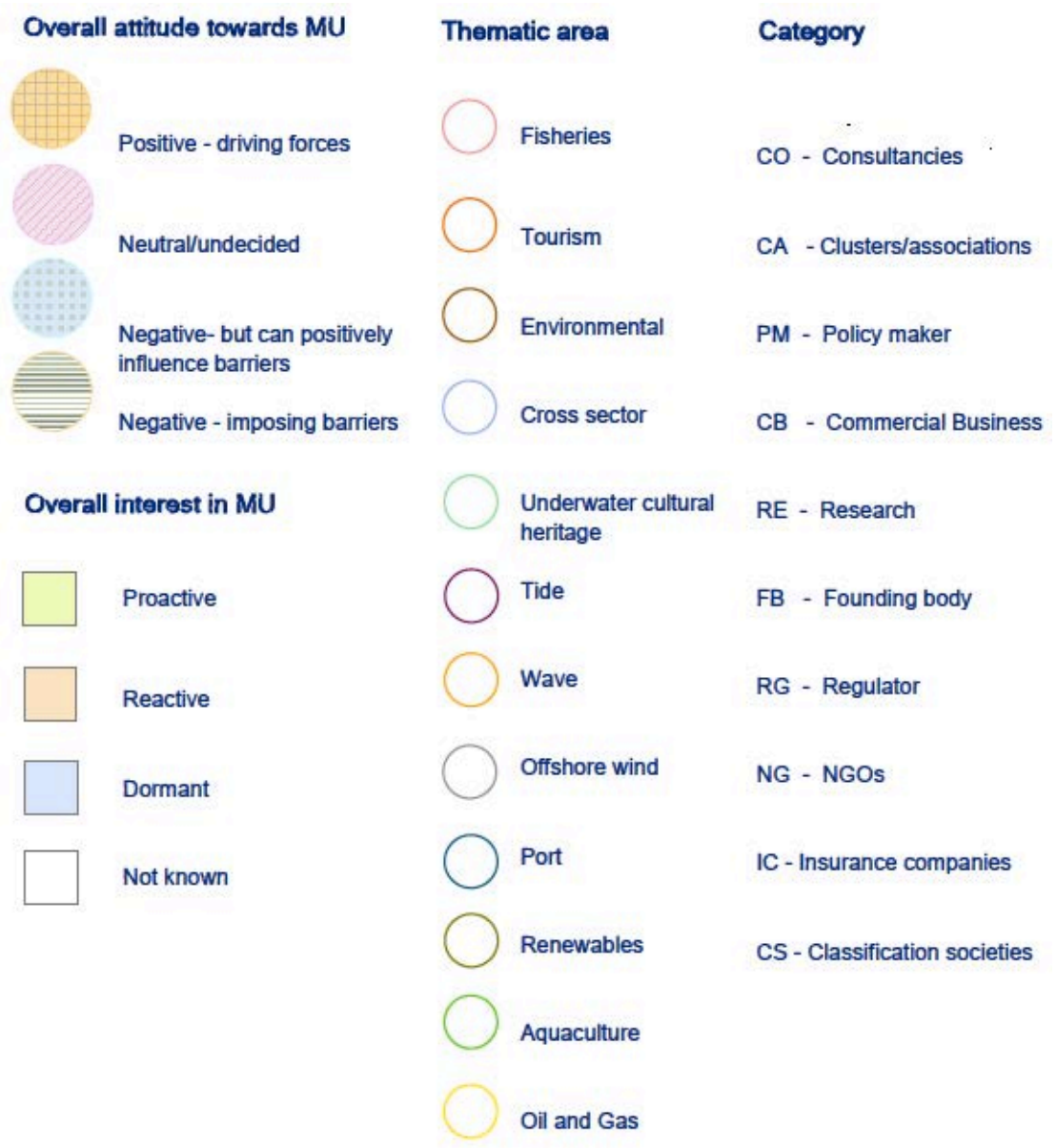
Annex 1. Legend for the Stakeholders' attitude and activity in relation to the MU development



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