Annika Jaansoo

Socio-Economic Networks in Gulf of Finland and Archipelago Sea Area

Analysis of the Current Status and Trends

Final Report / October 2018

ABSTRACT

Title: Economic and Social Networks in Gulf of Finland and Archipealgo Sea Area: Analysis of the Current Status and Trends

Author: Annika Jaansoo

Abstract:

This report examines current status and trends of socio-economic cross-border networks connected to maritime spatial planning in Gulf of Finland and Archipelago Sea area. The research is conducted as a part of an INTERREG Central Baltic project Plan4Blue, Maritime Spatial Planning for Sustainable Blue Economies. Plan4Blue project brings together the key blue growth and maritime spatial planning actors from Estonia and Finland to identify pathways to sustainable use of the sea areas and resources. The collaborative process analyses economic potential of the scenarios and identifies environmental risks and management options.

This research - Socio-Economic Networks in Gulf of Finland and Archipelago Sea Area: Analysis of the Current Status and Trends – concentrates on identifying and characterizing the current networks in Gulf of Finland and Archipelago Sea area. The results of this research will be used further in the Plan4Blue project as an input for the scenario-building for sustainable blue growth. Identifying the networks and key actors in those networks helps to find joint maritime spatial planning options. To identify the characteristics and trends of the socio-economic networks in the Gulf of Finland and Archipelago Sea area, we conducted a multi-method research using interviews and online survey with specific questions for applying a social network analysis.

Conclusions of this research point out that in Gulf of Finland and Archipelago Sea area socio-economic networks in maritime spatial planning rely heavily on personal contacts and that public sector has a bearing role in those networks. This report concludes that there is a need for increase in cross-border networking both sectoral and cross-sectoral. However, the interviewees and respondents to the online survey were not able to agree upon who should be the main catalyst for these networks, i.e. private sector entities propose that the catalyst should be a public sector entity, public sector, on contrary, sees private sector entities as initiators and coordinators for these networks.

Acknowledgements

The author wishes to thank the project team members from both sides of the Gulf of Finland for their valuable comments and support in formulating this report. The author is also thankful for INTERREG Central Baltic Programme for co-funding the Plan4Blue project.

The document should be sited as follows:

Jaansoo, A., [2018], [*Economic and Social Networks in Gulf of Finland and Archipelago Sea Area: Analysis of the Current Status and Trends*], Plan4Blue report [Final Report]

CONTENTS

1. INTRODUCTION

Maritime spatial planning in the European Union exhibits clear trends towards Europeanization, i.e. it can be defined as the appearance of shared European norms, rules and approaches in planning efforts that are otherwise implemented nationally. This means that cross-border planning and management of the sea is a governance challenge. Fostering cross-border relations among the maritime spatial planning related people and organizations in border regions is a precondition for the future envisagement and success of cross-border maritime spatial planning. However, related studies about cross-border networks observe the weakness of cross-border contacts and relations.

This paper is composed based on a research carried through as a part of the INTERREG Central Baltic project Plan4Blue, Maritime Spatial Planning for Sustainable Blue Economies. The Plan4Blue project brought together the key blue growth and maritime spatial planning actors from Estonia and Finland to identify pathways to sustainable use of the sea areas and resources. The collaborative process analysed economic potential of the scenarios and identified environmental risks and management options for the Gulf of Finland and Archipelago Sea area.

The general aim of this research – analysis of the socio-economic networks in Gulf of Finland and Archipelago Sea area – was to define the key actors in cross-border maritime spatial planning; networks and their characteristics; and trends of socio-economic networks in Gulf of Finland and Archipelago Sea area. Furthermore, we were interested in the connections between the networks, the maritime value of those networks and public sector influence in those networks. We analysed both formal and informal networks. The outcomes of this research will be used in the Plan4Blue project as an input for the scenario-building for sustainable blue growth because the knowledge about the socio-economic networks in the research area[1] helps to define joint maritime spatial planning options.

For this particular research a multi-method approach – interviews and an online survey – was used. Analysis in this report is based on triangulation between these methods.

This report is built up as follows. After the introduction, a short overview is given about using Social Network Analysis in cross-border cooperation and spatial planning related research (Section 2). In Section 3 the methodology used to conduct this research is discussed and the choices made explained together with the limitations for those choices. In Section 4 the findings are presented starting with overview about the networks (both formal and informal) in Gulf of Finalnd and Archipelago Sea area following by discussion about the trends of networks and suggestions for improving cross-border networking in the research area. Section 5 concludes this report.

[1] The project area is defined by Gulf of Finland and Archipelago Sea area with four counties from Estonia (Lääne, Lääne-Viru, Ida-Viru, Harju) and three regions from Finland (Uusimaa, Kymenlaakso and South-West Finland).

2. PREVIOUS WORKS

There are very few documented cases of using Social Network Analysis in research about cross-border cooperation, and even less about using Social Network Analysis in spatial planning related studies. However, a broad expansion in the use of Social Network Analysis in general has occurred across many disciplines over the past decade and several researchers have evaluated the impact and potential of this approach on their respective disciplines. Within the following two sections we give a brief overview about the use of Social Network Analysis in cross-border cooperation and spatial planning studies.

2.1. Social Network Analysis in cross-border cooperation studies

The use of Social Network Analysis in cross-border cooperation studies is not yet common as only few articles can be found (see, for example, Alapuru and Lonkila 2004; Gualda et al 2008; Gonzalez-Gomez and Gualda 2014). The lack of using Social Network Analysis in studying cross-border cooperation is surprising as the analysis of personal and social networks can provide a refreshed theoretical perspective as well as methodological potential in the study of people's border behaviour and cross-border relationships at both individual and institutional levels. Following Santos (2008), the whole society is a big network which is composed of actors at many different layers such as, for example, states, companies, social groups and individuals. The Social Network Analysis enables us to present the social structure where the actors are related with one another. This means that the Social Network Analysis shows the social capital of the actors in the network as well as the social capital of the whole network. Though, the Social Network Analysis enables to capture the relational and processual character of cross-border cooperation. Moreover, it offers the opportunity to understand the nature of institutional or informal relations across border regions and the whole picture of the structure of these relationships. In other words, the Social Network Analysis provides an interesting approximation to the nature of border relations both within the social and informal boundary of people and within their institutional and formal cooperation. Knowledge about the social structure and relations between the actors enables to enhance the cross-border cooperation related activities in border regions.

Recent works using Social Network Analysis (mainly case studies) have shed more light on the constructions of cross-border regions whether in a formal context of institutions and cross-border policies (see, for example, Gonzalez-Gomez and Gualda 2014) or in an informal context of people living in the cross-border regions (see, for example, Brunet-Jailly 2006; Walther and Reither 2012). Applying Social Network Analysis on the study of cross-border cooperation policies gives a perspective where cross-border policies, such as national and transnational policies, are dynamic processes. The Social Network Analysis in this case makes it possible to identify key actors, flows of information and capacity of influence among actors, while conducting an analysis of certain variables in the conformation of cross-border networks in the policy-making of cross-border regions.

Ludén's (1973) work on interaction of individuals across the borders of Norway and Sweden can be considered as an initial step to study cross-border relationships of individuals. Recently, however, different scholars have begun to apply Social Network Analysis both theoretically and methodologically to study cross-border relations such as, for example, to study cross-border relations as mechanisms for social integration (see, for example, Alapuru and Lonkila 2004; Hyvönen 2008); to reflect the patterns of border relations in specific cross-border regions or to study the role of aspects such as language, in the conformation of cross-border relations (see, for example, Gualda et al 2008). The main conclusions of these studies highlight the strong endogamy of cross-border relations for which the proximity within national territory determines the general patterns of personal relations.

The latest work about using Social Network Analysis for studying cross-border cooperation is from Gonzalez-Gomez and Gualda (2014). The aim of their paper was to examine the nature of personal border networks of professionals working in cross-border cooperation and how they are interconnected with the institutional cross-border cooperation. They were analysing both the personal relations of people who live in the cross-border regions and the methods that people use to maintain cross-border relationships. Authors were especially interested

in the role that personal cross-border relations might have for the institutional cross-border cooperation. Their main observation was the weakness of informal cross-border contacts and regions.

2.2. Social Network Analysis in spatial planning studies

It is surprising that there are very few documented cases of using Social Network Analysis in spatial planning studies even though it is considered as the best method to address the problems arising from limited or ineffective involvement of key actors and the general public in planning processes, including advocacy, equity, consensus building, and communicative planning. The methods of Social Network Analysis enable spatial planners to engage network issues from multiple angles, such as, for example, how actors in planning processes are embedded within networks and how the structure of those networks serves to enable or inhibit individual and joint action to address wicked problems and social dilemmas. Social Network Analysis does not replace the relationship building and political savvy that is needed for spatial planning, but it does, however, provide a useful tool for visualizing, analysing, understanding and remembering complex networks of actors in support of the judgement and relationship building they advocate.

There are generally six types of problems that planners routinely face and where Social Network Analysis may prove especially useful. These include problems that involve:

(1) coordination, cooperation or trust;
(2) sources and uses of power and influence;
(3) multiple levels of organization;
(4) informal organization;
(5) flows of information and or transaction costs;
(6) problems involving the dynamics of community (network) development

(modified from Heaney and McClurg 2009).

Individual papers have demonstrated the applicability of Social Network Analysis to a wide variety of social science problems that are relevant to planning. Those studies concern, for example:

(1) the nature of ‘community’ (Wellman 1979, 2001);
(2) collective action in estuarine management (Scholz, Berardo and Kile 2008);
(3) public participation in the redevelopment process (Holman 2008; Rydin and Holman 2004);
(4) innovation studies (Fagerberg and Verspagen 2006);
(5) environmental management (Davies 2002);
(6) supply chain management (Borgatti and Li 2009).

Dempwolf and Lyles (2012) reviewed the literature on using Social Network Analysis within disciplines related to planning studies and found that although the planning literature has begun to engage network issues from multiple angles, empirical knowledge of how actors in planning processes are embedded within networks and how the structure of those networks serves to enable or inhibit individual and joint action to address wicked problems and social dilemmas, is still underdeveloped.

2.3. Conclusion

As previously shown, even though we were able to find some articles about using the method of Social Network Analysis in studying cross-border cooperation and spatial planning issues, we can conclude that the method of Social Network Analysis is underused. With this report we want to, firstly, provide for the research by using Social Network Analysis in studying cooperation in spatial planning. Secondly, as we were not able to find any research using Social Network Analysis to study cross-border cooperation in spatial planning, with this report we want to close this gap by using Social Network analysis to study maritime spatial planning related cross-border networks in Gulf of Finland and Archipelago Sea area.

3. METHODS

This report is part of a broader line of research conducted under the INTERREG Central Baltic project Plan4Blue, Maritime Spatial Planning for Sustainable Blue Economies. The aim of this research was to define the key actors, network characteristics and trends in inter-state and intra-state maritime-connected socio-economic networks in Gulf of Finland and Archipelago Sea area[2], in particular, networks connected to maritime spatial planning. Keeping in mind the aim of this research, we addressed the following research questions:

(1) What kind of maritime spatial planning related networks exist in Gulf of Finland and Archipelago Sea area?
(2) What are the characteristics and trends of maritime spatial planning related networks in Gulf of Finland and Archipelago Sea area?
(3) What is the maritime value of those networks?
(4) How public sector influences maritime spatial planning related networks?

As the nature of the research problem is complex, a multi-method approach was taken using both an online survey and interviews to answer these research questions. Two kinds of data was collected – quantitative data collected through an online survey and qualitative data collected through two types of interviews. Firstly, the online survey was composed and executed. Secondly, based on the results of the online survey, interviews about the characteristics of networks in Gulf of Finland and Archipelago Sea area were conducted with the key players of the networks. Finally, to get as broad picture about the trends in networking in the project area, interviews with the representatives of maritime sectors were conducted. Questions for the trends' related interviews were based on the outcomes of the online survey and network characteristics' related interviews.

Discussions provided in this report are based on the triangulation of content analysis from interviews and quantitative analysis of data collected via the online survey. Although this study does not aim to make inferences about general patterns of maritime spatial planning related cross-border relations, the results of our interview-based qualitative and Social Network Analysis based quantitative analysis provides specific enough information for implementing cross-border maritime spatial planning within the research area.

Within the following sections the methods for data collection and analysis are discussed together with the limitations related to this research.

3.1. Online Survey

The online survey was carried out during June-December 2017. Reasoning behind conducting an online survey was that it promotes efficiency in data collection, i.e. conducting an online survey is less resource consuming than other methods of empirical research: it is cheap to administer, can be sent to a large number of subjects and provided the online survey is well designed, are relatively easy to analyse. In addition, the use of online survey promotes efficiency by offering the respondents to answer the survey at their own pace and convenience at the same time offering the possibility to gather many responses within a short time.

Questionnaire

The aim of the questionnaire was to cover the research problem in general and to address each of the the research questions. In composing the questionnaire we were keeping in mind Net et al (1994) who suggests that all questionnaires should be designed to achieve three related goals, namely (1) to maximize the relevance and accuracy of the data collected; (2) to maximize the participation and cooperation of target respondents; and (3)

[2] The research area was including four counties from Estonia (Lääne, Lääne-Viru, Harju and Ida-Viru) and three regions from Finland (Uusimaa, Kymenlaakso and Southwest Finland).

to facilitate the collection and analysis of data. Our intent therefore was to target all these three goals as best as possible and with minimum distortion. The questionnaire for the online survey is presented in Annex 3.

***Goal 1: to maximize the relevance and accuracy of data collected*.** The questionnaire for online survey was built to address the four research questions and piloted to make sure the questions are understandable and are understood the same way in all of the three languages – Estonian, Finnish and English. As a pilot, the questionnaire and link to the online survey was sent to the Plan4Blue project team in both Estonia and Finland. After some minor amendments, the questionnaire was made publicly accessible.

***Goal 2: to maximize the participation and cooperation of target respondents*.** Questions in the online survey were following a logical progression starting with simple themes and progressing to complex issues to sustain the interest of respondents and gradually stimulate question answering. The sonline urvey was structured in three parts. The first part contained general questions to gather information about the respondent and their views about networking. The purpose of the first part was to identify and characterize the actors in the maritime spatial planning related networks in Gulf of Finland and Archipelago Sea area. The first part comprised 13 questions. The second part of the questionnaire – consisted three questions – was about the maritime spatial planning related networks and their characteristics. The third and final part of the online survey consisted two questions and its aim was to determine the size and the key players in the networks. To maximize the participation in the online survey a snowball sampling was used, i.e. respondents listed other individuals from among their aquantances as potential respondents to the online survey. Furthermore, to increase the participation we translated the questionnaire into three languages – Estonian, Finnish and English. The target group was approached directly by e-mail consisting an introductionary letter with a link to the online survey (see Annex 2). In addition to the personal approach, we also included a link to the online survey into the Plan4Blue Newsletter No 1.

***Goal 3: to facilitate the collection and analysis of data*.** The online survey questionnaire consisted two questions to visualize the socio-economic networks (see Annex 2; questions number 17 and 18). Data for this research was collected via LimeSurvey software and visualized via SocNetV free software.

Sampling

As our aim was to collect as many responses as possible, the sampling for the online survey consisted of several steps. Firstly, to compose a preliminary list of direct stakeholders for our online survey, we identified four maritime sectors that are connected to our project (see Annex 1). Based on those sectors we identified our direct stakeholders – mainly public and non-governmental organizations. We were able to identify altogether 369[3] stakeholders in both sides of the Gulf of Finland and Archipelago Sea area.

Secondly, we composed a list of private organizations which registration address was connected to the research area – altogether contact data of 6557 organizations – 3192 from Estonia and 2804 from Finland. We assumed that private organizations located in the coastal area may have connection with maritime spatial planning and though they may participate in maritime spatial planning related cross-border networking.

Thirdly, a snowball-effect technique was used within the online survey to gather as much contact information about the actors in socio-economic networks within the project area as possible. The snowball-effect technique means that within the online survey the respondents were asked to list ten individuals with whom they have the most contact with regarding their work in general (see Annex 3, question 17), and ten individuals with whom they have the most contact with regrading maritime spatial planning issues (see Annex 3, question 18).

The final list of target group was composed by adding the pre-mentioned three lists of potential respondents – a list of direct stakeholders, a list of private organizations with registration address in the project area and a list of (potential) respondents gathered via the snowball-effect.

[3] In case of ministries and governmental organizations, more than one person from the organization was contacted. It was done so to get as wide picture about maritime-related networks as possible.

Data collection, analysis and presentation

The data of online survey was collected via LimeSurvey software, Altogether 7118 invitations[4] was sent out and 207 properly fulfilled responses gained – 102 from Finland and 105 from Estonia -, which makes a response rate of 2.9%[5]. In assessing this number we have to take into consideration the following:

(1) we sent invitation to the online survey to all organizations who are either direct stakeholder or have a business registration address in project area;
(2) maritime spatial planning in both countries – Estonia and Finland – is a responsibility and though is dominated by public sector entities in both Estonia and Finland;
(3) private sector entity has, usually, maritime spatial planning related connections only in case when it builds on coastal area and though with high probability we can say that most of the private organizations, who were invited to respond to the online survey, do not have maritime spatial planning related connections.

Though, we can conclude that the response rate of 2.9% is a conservative estimate.

Majority of the responses were from the list of direct stakeholders. There were only few responses from the list of private organizations with the registration address within the project area. One of the reasons for that can be that maritime spatial planning in both Finland and Estonia is public sector based – mainly ministries and governmental organizations – and private organizations do not have much connection with maritime spatial planning, especially when their activities are not directly connected with sea. There were many responses from orga-nizations who claimed to have no connection with the maritime spatial planning and thereby will not fulfill the online survey. Most of those organizations were small tourism-related enterprises, like for example, B&B accommodation, restaurants.

Information about actors in networks, collected via online survey, were visualised via SocNetV free software. Based on the responses from the online survey, the actors in the networks and their relations were visualized and discussed in following chapter. On the visualization (figures) are presented only actors who declared relationships with other actors. Actors, who declared no relationships, are not presented. The reasoning is that we did not want to overcomplicate the figures. Dots or 'nodes' on figures represent actors in the network. The size of the nod represents the importance of the actor, i.e. how many contacts it has within the network.

Lines between the dots represent the relationships or 'ties' between actors. Relationships / ties between actors are drawn as arrows to represent the direction of communication, i.e. arrows at the ends of the lines are marking the direction of relationships. For example, when respondent A reported in the online survey that he/she has connection with respondent B, there will be a line between those two respondents with arrowhead pointing at respondent B. This was important to find the key actors of the networks. Relations between actors on figures about sectorial and formal networking are presented without directions as in most cases the communication is on both ways.

The intensity of communication between the actors is shown by the thickness of the arrows, i.e. the thicker the arrow, the more communication between the two actors. In other words, the thickness of the lines is determined by how many times the relationship between the actors was reported.

3.2. Interviews

For the qualitative data, in-depth analysis of the socio-economic networks and trends of networks in Gulf of Finland and Archipelago Sea area, two types of interviews were conducted: (1) interviews for describing the characteristics of networks in project area; and (2) interviews describing trends of networks in project area. Both types of interviews are discussed separately.

[4] We also included a link to the online survey to the Plan4Blue Newsletter No 1.

[5] We sent the invitation to online questionnaire also to all the project area related organizations with the assumption that they may have something to say about cross-border networking in the Gulf of Finland and Archipelago Sea area.

Interview plan

We used semi-structured questionnaires with open-ended questions for both types of interviews – interviews about networks and interviews about trends – because it allows prepared questions that are necessary for in-depth understanding of the networks and trends in Gulf of Finland and Archipelago Sea area. Semi-structured questionnaire also allows the interviewer to be flexible, to deviate and ask more specific questions if needed.

Interviews about the characteristics of the networks covered topics of networking (general information about the networks the respondent is involved with); characteristics of the networks; and cross-border networking in maritime spatial planning (for the interview plan see Annex 4).

Even though, interviews about the trends covered mainly the future trends of the socio-economic networks in Gulf of Finland and Archipelago Sea area, there were also questions about the networks' characteristics to provide more specific information for the research (see Annex 5).

Interviewees

The methodology for chosing the interviewees was separate for both interview types. Interviewees for the network charateristics' interview were chosen based on the outcomes of the online survey, i.e. the intervewees were the key players of the networks. More precisely, the interviewees were chosen based on the data analysis from the online survey and visualization of socio-economic networks, i.e. the nodes with most connections within the networks were considered to be the key players. Altogether eight interviews were carried through about the networks' characteristics with four persons from each side of the border. Following Morse (1994) and Guest et al (2006) the amount of eight interviews for the high-level all-encompassing theme should be sufficient for capturing the generic characteristics of the networks in the Gulf of Finland and Archipelago Sea area.

Interviewees for the trends' related interview were chosen based on the maritime sectors agreed upon in the initial phase of this project (see Annex 1), i.e. for every maritime sector the list of interviewees was composed based on the assumption that these persons may have the best knowledge about the maritime-related issues in Gulf of Finland and Archipelago Sea area. Altogether 23 interviews about the trends of socio-economic networks were conducted – 15 in Estonia and 8 in Finland.

Interviews

Interviews were conducted either via face-to-face interviews, via phone or via Skype. The latter two cases were used when the interviewer had no possiblitity to meet the interviewee in person or in cases additional information was needed after analyzing the results of the initial interview.

Interviews about characteristics of networks were conducted in two languages. With Estonians, the author was able to conduct the interviews in Estonian however, with Finnish respondents, the author conducted the interviews in English. The latter led to a situation where interviewee was in many cases not comfortable to talk in foreign language and gathered information remained 'dry'. On average, the interviews lasted 45 minutes.

Conduction of the interviews about trends was divided among Plan4Blue project parties so that native speakers were conducting the interviews. In other words, the interviews with Estonian organizations were conducted by Estonians and with Finnish organizations by Finnish native speakers. This enabled us to collect more thorough information as language was not the restriction. Interviews about the trends were conducted as a part of the interview about maritime-related trends in general in Gulf of Finland and Archipelago Sea area, though the time of the interview for the networking part cannot be counted.

Analysis and presentation

Content analysis was used to analyse the interviews, i.e. the interviews were transcribed and coded relevant to the each part of the interview. Those codes were examined and used to confirm or modify the initial data gathered from the online survey. The interviews were used for supplementing the data gathered from the online survey – to provide in describing the characteristics and trends of the networks. To supplement the online questionnaire with the information gathered from interviews, we used similar structures for the questionnaires of the online survey and the interviews to achieve the best alignment between the two instruments. Furthermore, extracts of some of the interviews are presented in this report to make the discussion more understandable for the reader.

3.3. Limitations

There were several limitations in conducting this research. Firstly, it was rather hard to identify the potential respondents for the online survey because (1) the data about Estonian and Finnish companies was needed to be obtained separately; and (2) in Estonia, the registration address and operation address of the company can be different, i.e. the company may not operate in location given as its registration address. To overcome this limitation, we included into the online survey a possibility to collect information via snowball effect, i.e. the respondents listed up to 20 of their connections outside their organization with whom they are frequently communicating about maritime spatial planning related matters. In case the contact, gathered via snowball-effect technique, was not already in our contact list, we sent the request to participate in our online survey to the person enlisted by the respondent.

Secondly, the non-response rate for the online survey is rather high even after sending several notices to the target group of the online survey. The occurrence of non-response in empirical studies has been analysed in the literature. The main explanation given is that the respondents lack the ability, motivation or accessibility to answer (Schnell 1997; Groves 2004). Accessibility is not seen as a main reason within this field of research, as the e-mails were sent to the respondents directly and checked against transcription errors. The two other reasons – lack of ability or motivation – are difficult to assess as there was no personal contact with non-respondents. Lack of motivation can be explained, for example, by a general disinterest in the subject or an assessment of costs and benefits (respondent evaluated that the opportunity costs are higher than the benefit of answering). Lack of ability can be explained by the absence of involvement and information about the subject. Both lack of motivation and lack of ability suggests that the respondent is not interested in this study. This summary is not true of all rejections, but does express the predominant experiences. Furthermore, it appeared that not all of the potential respondents from maritime spatial planning related sectors have enough knowledge nor experience in maritime spatial planning to answer our questionnaire.

Thirdly, in analysing the responses to the online survey and interviews we have to keep in mind that the information gathered is subjective and during the interpretation we have to take into account also the self-interest of the online survey respondents and interviewees and the will to hide one's motives of action.

Fourthly, we are aware that networks created within current (Plan4Blue) project may distort the outcome of the analysis. However, we were not able to distinguish between relationships that existed already before the Plan4Blue project and relationships created through the Plan4Blue project. So, we decided to present on the figures all the networks declared by the respondents.

Finally, in analysing the socio-economic networks, we have to take into account the high subjectivity of Social Network Analysis method, i.e. when individual reports in which network he/she or his/her organization is involved, the Social Network Analysis reflects the individual's awareness of his/her or his/her organization's relations at that certain moment.

4. RESULTS AND DISCUSSION

The aim of this chapter is to address the research questions:

(1) What kind of maritime spatial planning related networks exist in the Gulf of Finland and Archipelago Sea area?
(2) What is the maritime value of those networks?
(3) How public sector influences maritime spatial planning related networks?
(4) What are the characteristics and trends of maritime spatial planning related networks in Gulf of Finland and Archipelago Sea area?

Research questions (1) and (3) are addressed in sections 4.1.1 Informal networks; 4.1.2 Formal networks; and 4.1.4 Conflicting networks. Research questions (2) and (4) are addressed in section 4.1.3 MSP-related networks and section 4.4 Future trends in cross-border networking. Sections 4.2 and 4.3 of this chapter are dedicated to discussion about improvements of cross-border networking in project area.

Discussions in this chapter are based on the triangulation of content analysis from interviews and quantitative analysis of the data from the online survey. To contribute to the analytical discussion, some quotes from the interviews are included.

4.1. Networks in project area

In researching networks in Gulf of Finland and Archipelago Sea area, we distinguished among formal and informal networks. Formal networks are defined as networks with some form of institutionalization. We distinguished, based on the scope of the network, among (1) EU project specific networks; (2) international networks; and (3) national networks. Informal networks are defined as informal contacts among people, organizations and sectors. All of those networks are discussed below.

4.1.1. Informal networks

The results presented in this section are based on the responses to the online survey and interviews. To conduct the Social Network Analysis and visualize the informal networks we, firstly, asked respondents to list up to ten individuals outside their organization *with whom they have most contact with* (e.g. meetings, phone calls, letters, text/instant messages, or e-mails) regarding the activities within the Gulf of Finland and Archipelago Sea area. Secondly, we also asked respondents to list ten individuals outside their organizations with whom they exchange the most ideas or materials about *maritime spatial planning related* activities in Gulf of Finland or Archipelago Sea area. Based on the responses to the online survey we draw four figures – Figure 1 presents sector-based informal networks; Figure 2 presents sub-sector based informal networks; Figure 3 presents organization-based informal networks and Figure 4 presents person-based informal networks in the Gulf of Finland and Archipelago Sea area.

Estonian people, organizations and sectors are marked on figures as red dots. Finnish people, organizations and sectors are marked as green squares. To mark organizations with their office outside of Finland or Estonia, we used a blue romb. The number next to the nod represents the number of the online survey respondent or organization of the respondent based to which the respondent can be traced back to his/her response. We used numbers on Figures 3 and 4 because of the anonymity clause of this research and though we cannot provide the names of the persons and organizations behind the numbers. There are no labels on Figure 2 as adding labels overcomplicated the figure. The sub-sectors behind the numbers in Figure 2 are listed in Table 1.

Sector-based networks

Sector-based networks are presented on figures 1 and 2. The meaning behind composing two separate figures is to give a better overview of the sector in hand. Figure 1 (sector-based networks) and Figure 2 (sub-sector based networks) are composed based on the responses from the online survey. To compose Figure 1, we referred back to the sectors brought out in Annex 1. To compose Figure 2, we, firstly, grouped the responded organizations based on their field of activity, and secondly, formed sub-sectors based on those groupings.

From figures 1 and 2 can be seen that we did not get responses for the online survey from all of the subsectors defined in Annex 1. For example, under the energy sector, only wind energy is represented; under the marine transportation sector, only ports are represented; under marine fishing and aquaculture, only fishery is represented. Furthermore, the sector of sub-sea resources is not represented in figures 1 and 2 as there were no respondents from this sector to our online survey. This is interesting as one can assume that sectors and subsectors brought out in Annex 1 should be the primary stakeholders of this project and though their interest in participating in this project should be high. However, in addition to primarily defined maritime related sectors (see Annex 1) in figures 1 and 2 is brought out also a sector of maritime resque.

The data analysis of online survey about the sector-based networks is supplemented with the responses from interviews. By combining the data we describe sector-based networking in Gulf of Finland and Archipelago Sea area.

Public sector. Under the public sector are considered municipalities, county governments, ministries, governmental organizations, and public regional organizations. The latter includes, for example, regional unions of municipalities.

From Figure 1 we can infer that there is a lot of intra-sectoral networking among public sector entities in both countries, i.e. the biggest nods are the nods of public sector in both countries. This is as expected because maritime spatial planning is managed solely by the Public sector entities in both countries. Figure 1 also shows that Public sector in both countries is well-connected: (1) it has intra-state connections; (2) it has inter-state connections; (3) Public sector in both countries has rather strong relationship with each other (thickness of the line); (4) Public sector in both countries has direct connections with most of the sectors. Via indirect connections Public sector in both countries are connected to all sectors and subsectors.

We can infer from Figure 1 that Estonian Public sector is best connected with (1) Estonian Marine transportation and (2) Estonian Marine fishing and aquaculture followed by (3) Estonian Research and specific projects and (4) Finnish Public sector. Finnish Public sector has the strongest relations (thickness of the tie) with (1) Estonian Public sector; (2) Finnish Marine fishing and aquaculture; (3) Finnish Tourism and maritime experience; and (4) Finnish Research and specific projects.

Those strong relationships can be explained as follows:

(1) Strong link between Public sector and sector of Maritime transportation is because Marine transportation is directly connected with maritime spatial planning through shipping routes;
(2) Marine fishing is directly connected to maritime spatial planning via establishment of fishing areas in Gulf of Finland and Archipelago Sea area;
(3) Sector of Research and specific projects contained mostly universities and research institutions. The explanation of strong ties between Public sector and sector of Research and specific projects is that maritime spatial planning related research and projects are mostly built up with at least one Public sector entity as one of the stakeholders;
(4) Strong link between Estonian and Finnish Public sector is because maritime spatial planning is managed solely by the Public sector in both countries and because both Estonia and Finland are managing the same maritime area – Gulf of Finland;
(5) Under the Finnish sector of Tourism and maritime experience, small harbours with guest houses were responding the survey. The strong connection between Finnish Public sector and the sector of Finnish Tourism and maritime industry can be explained by the engagement of small harbours with maritime spatial planning in case they need to build ship's quais.

Comparing both Finnish and Estonian Public sector based on Figure 1, we can infer that the sectors and their connections are rather similar in both sides of the Gulf of Finland.

Figure 2 shows that Estonian Ministries (#2), Estonian Governmental organizations (#4), and Finnish Governmental organizations (#8) have the biggest nods. This can be because maritime spatial planning is mainly managed by either the ministries or governmental organizations on both sides of the border. Also, Governmental organizations in Finnish side (#8) have the best connections (altogether 12 links) connecting directly or indirectly all Finnish sub-sectors. The strongest links of Finnish Governmental organizations are with Finnish Tourism (#15), Finnish Fishery (#12) and Finnish Regional organizations (#17).

In Estonian side County governments (#1) and Ministries (#2) are well connected (both have eight links with other sub-sectors). However, the only strong link is between Estonian Ministries (#2) and Estonian Fishery (#10).

Finally, Figure 2 presents that the sub-sectors of both Estonian and Finnish Public sector have inter-state relations meaning that they cooperate with organizations from both side of the border. Finnish Governmental organizations (#8) have reported the most inter-state relations (altogether four connections). The low activity of Municipalities in both sides (#20 and #13) in maritime spatial planning related networking is explained by one interviewee as follows:

> *"Inter-state networking of municipalities is basically absent.*
> [This can be because]*The interest of municipalities in maritime spatial planning is determined by the shore* [as they are not allowed to plan farther into the sea]".

Non-governmental organizations (NGO), interest organizations, business support organizations. Under this sector NGOs and business support organizations were responding the online survey. Figure 1 shows that this sector has secondary importance in maritime spatial planning based on decralred relationships. Furthermore, this sector has not so many connections – Estonian sector of NGOs, interest organizations and business support organizations has six connections from which only one is inter-state connection; Finnish sector of NGOs, interest organizations and business support organizations has four connections, all intra-state connections. The strong connection (thick line) between Estonian NGOs, interest organizations and business support organizations and Estonian Research and specific organizations can be explained by the current project – those two sectors cooperate mostly via EU-funded maritime spatial planning related projects.

Figure 2 shows that Estonian NGOs (#3) are networking well with each other (size of the nod) and are well-connected. Finnish NGOs (#18) cooperate less with each other and they have not reported many connections. As appears from Figure 2, Business support organizations have marginal relevance in maritime spatial planning and both the Finnish and Estonian Business support organizations have reported connections only with Estonian Ports.

Research and specific projects. Under this sector universities responded. In interpreting the role of this sector in maritime spatial planning related networks, we have to consider that this is the sector which characteristics can be distorted by the current (Plan4Blue) project as also the participants of this project were answering the online survey. However, we acknowledge that this sector has important role in maritime spatial planning as most of the maritime spatial planning related research is guided by the organizations belonging to this sector.

Figure 1 shows strong connection among the Research and specific projects' sector in both countries. It also shows that this sector is well connected – Finnish part has seven connections and Estonian part five connections from which several are inter-state connections. Estonian Research and specific projects sector has strong connections with (1) Estonian NGOs, interest organizations and business support organizations; (2) Estonian Public sector; and (3) Finnish Research and Specific projects' sector. Figure 2 specifies that those strong links are mainly with Estonian NGOs (#3) and Finnish Universities (#7).

Finnish Research and specific projects' sector has strong links with (1) Finnish Public sector; and (2) Estonian Research and specific projects' sector. Figure 2 specifies that those strong links are mainly with Estonian Universities (#25) and with Finnish County governments (#6).

***Energy*.** As mentioned above, only organizations related to wind energy responded to our online survey. Figure 1 shows that there is not much inter-sectoral networking in Estonian Energy sector. Estonian interviewees perceived that cross-sectoral networking and communication concerning Energy sector is not good within Estonia.

Figure 1 also shows that the Energy sector in Estonia is connected only with Estonian Public sector and Estonian NGOs, interest organizations and business support organizations. Figure 2 specifies that Estonian Energy sector (#11) has connections with Estonian Ministries (#2) and Estonian Governmental organizations (#4). This can be explained by the fact that energy related issues are in Estonia coordinated by the ministries and governmental organizations.

Figure 1 also shows that Finnish Energy sector is disconnected from the other sectors in Figure 1 and that Finnish Energy sector has not reported many intra-sectoral networking even though intra-sectorial and cross-sectorial networking in Finland concerning the Energy sector is perceived as good by the private organizations. Cross-border networking between Estonian and Finnish Energy sector is perceived by both sides to be, at the moment, non-existent. This is also seen on Figure 1.

However, intra-sectoral networking of Energy sectors is perceived by the interviewees to be rather good by both sides as far as cooperation among private companies (as competitors) allows.

Marine transportation. Under this sector, ports and ships' related organizations (e.g. ship building, ship maintenance; and ship owners' unions) were responding. From Figure 1 we can infer that Estonian Maritime transportation sector has good intra-sectoral networks (size of the nod). Also, the Estonian Marine transportation sector is the best in intra-sectoral networking with six connections out of eleven with intra-state sectors. The strongest connection is with Estonian Public sector. Figure 2 specifies that Estonian Ports (#22) have the highest intra-sectoral networking. Figure 2 also specifies that Estonian Ports (#22) are the most connected having cross-sectoral networks with many other Estonian and Finnish sectors as well as sectors from other countries. Estonian Ports (#22) have the strongest connections with Estonian Government organizations' (#4) and with Estonian Business support (#31).

Figure 1 shows that not many intra-sectoral relations were reported by the Finnish Marine transportation sector - it has reported connections with only three sectors: (1) Estonian Marine transportation sector: (2) Finnish Public Sector; and (3) Finnish NGOs, interest organizations and business support organizations. Figure 2 specifies that Finnish Ports (#16) have connections with Estonian Ports (#22) and Finnish Governmental organizations (#8). Interviewees were emphasizing that cross-border networking among harbours is well established in both sides of the Gulf of Finland and Archipelago Sea area. As one interviewee put it:

"Networking is a part of the industry."

Marine building. Under this sector, we considered responses from Marine building and Marine industry. Figure 1 shows that Marine building in both countries are on the 'outskirts'. This means that their importance in maritime spatial planning networking is secondary. Also, Figure 1 shows only one connection of the Marine building sector in both countries. Figure 2 specifies that Estonian Marine building (#19) is connected with Estonian Ports (#22) and Finnish Marine industry (#34) is connected with Finnish Ships (#33).

Marine fishing and aquaculture. Only fishery-related organizations were responding to the online survey. Figure 1 shows that there is not much intra-sectoral networking reported on both sides of the border in Marine fishing and aquaculture as the nods are rather small. Figure 1 also shows that Estonian Marine fishing and aquaculture is networking with seven other sectors from both Estonia and Finland with the strongest connection with Estonian Public sector. Figure 2 specifies that Estonian Maritime and fishery (#10) has connections with altogether eight other sectors with the strongest connections with Estonian Ministries (#2) and Finnish Fishery (#12).

Finnish Marine fishing and aquaculture has reported only two intra-sectoral connections: (1) with Estonian Marine fishing and aquaculture; and (2) with Finnish Public sector. Figure 2 specifies that those two connections are with Estonian Fishery (#10) and with Finnish Governmental organizations (#8).

To provide information about Fishery sector based on the interviews, we hereby provide a perception of one interviewee that concludes well the essence of the responses of other interviewees in this sector:

"The networking between the two states as well as intra-sectorial international networking is lacking. Also, we perceive that the voice of professional fishermen is not heard by the decision makers in a higher level."

Tourism and maritime experience industry. Via interviews was reported that there is a lot of cross-border networking in tourism via EU funded projects and international networks. Interviewees also perceived that cross-sectorial networking is well established in tourism in both sides of the Gulf of Finland. As one interviewee put it:

"Networking with research institutions, food production, sports sector, harbours and so on is a part of our everyday life"

Figure 1 shows that there is not much intra-sectoral networking in Tourism and maritime experience sector in both countries. Figure 1 also shows that Finnish Tourism and maritime sector has reported connections with five other sectors with the strongest link to Finnish Public sector. Figure 2 specifies that Finnish Marine experience (#14) has reported three weak links with other sectors in both sides of the border. Finnish Tourism sector (#15) has reported some networking activity within the sector and connections with six other sectors with the strongest connection to Finnish Governmental organizations (#8).

Figure 1 shows that Estonian Tourism and maritime experience sector has reported four connections with the strongest link to Estonian Marine resque. Figure 2 specifies that Estonian tourism (#27) has two weak links and low networking within the sector. Estonian maritime experience (#9) has reported three connections with other sectors with the strongest link with Estonian Marine resque (#21).

Sub-sea resources. There were no online survey respondents from sub-sea resources' sector, so, overview about sector-based networking in this sector is based on interviews. In both sides of the Gulf of Finland, there is perceived some nation-based cross-sectorial networking in sub-sea resources. It is mainly because of the various licences and spatial planning that is obligatory for the usage of sub-sea resources. There is not perceived any cross-border networking in sub-sea resources from both sides. This is considered to be so as (1) the sub-sea resources, as gravel and sand, are mainly used within the nation state; and (2) there are vast differences in preferences in product bases as well as demanded quantities. A following example was given:

"The preference for product base is different in both sides – Estonians like mud, Finnish people like more peat-based products. /…/ we are not able to produce the wanted quantities [to benefit from cross-border networking]*."*

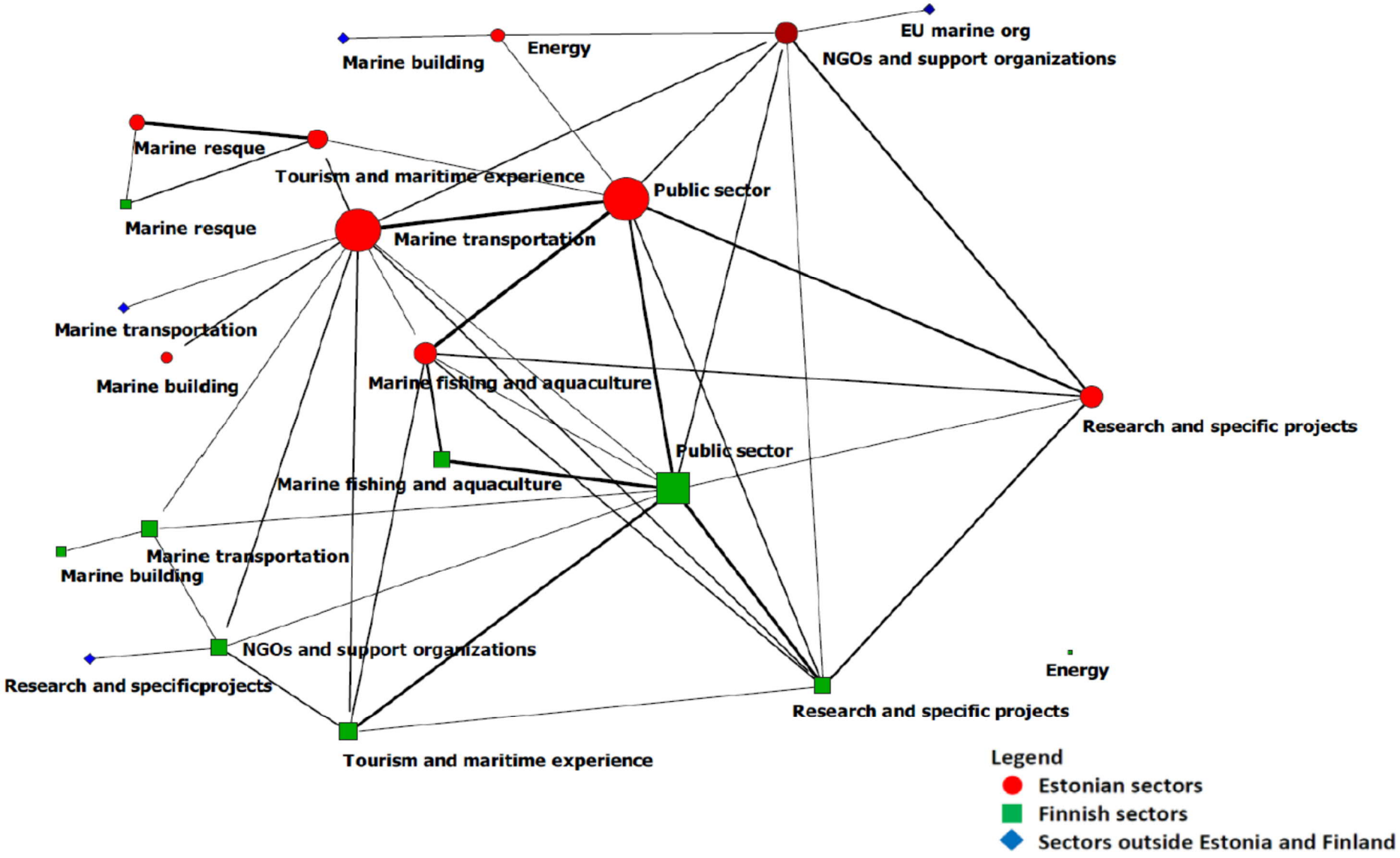

Figure 1. Sector-based informal networks in Gulf of Finland and Archipelago Sea area (*Source*: Author's compilation based on the online survey)

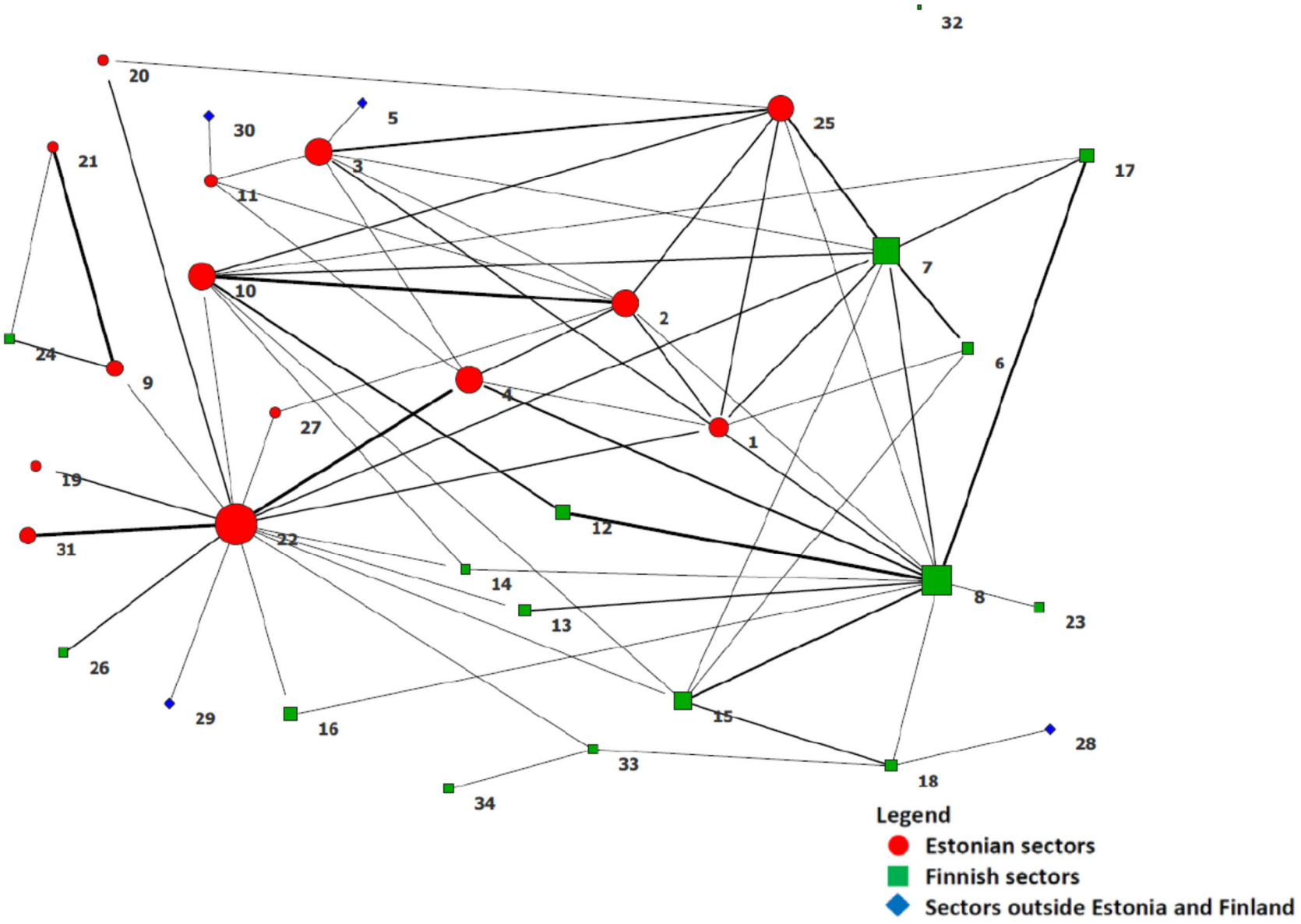

Figure 2. Sub-sector based informal networks in Gulf of Finland and Archipelago Sea area (*Source*: Author's compilation based on the online survey)

Table 1. Codes for Figure 2

Estonia		Finland		International	
1	County government	6	County government	5	EU marine org.
2	Ministry	7	University	28	University
3	Non-governmental organization	8	Governmental organization	29	Port
4	Governmental Organization	12	Fishery	30	Marine industry
9	Marine experience	13	Municipality		
10	Fishery	14	Marine experience		
11	Energy	15	Tourism		
19	Marine building	16	Port		
20	Municipality	17	Regional organization		
21	Marine resque	18	Non-governmental organization		
22	Port	23	Ministry		
25	University	24	Marine resque		
27	Tourism	26	Business support		
31	Business support	32	Energy		
		33	Ships		
		34	Marine industry		

Organization-based networks

To see how the networks are embedded in the Gulf of Finland and Archipelago Sea area, we also drew a network of organizations. As can be seen from Figure 3, the responding organizations to the online survey are well connected – there are only five single-standing networks declared. Most of the single-standing five networks 'disappeared' when we grouped the organizations based on their fields of activities (see Figure 2).

From Figure 3 we can infer that the maritime-related organizations in Gulf of Finland and Archipelago Sea area are well interconnected as most of the organizations have reported more than one connection and only few of the organizations do not have cross-border connections. Furthermore, as Figure 3 shows, the organizational networking is in the project area in level where disconnecting one organization from the network will not make the network collapse. In other words, organizations have created several links to connect them with other organizations in maritime spatial planning related networks.

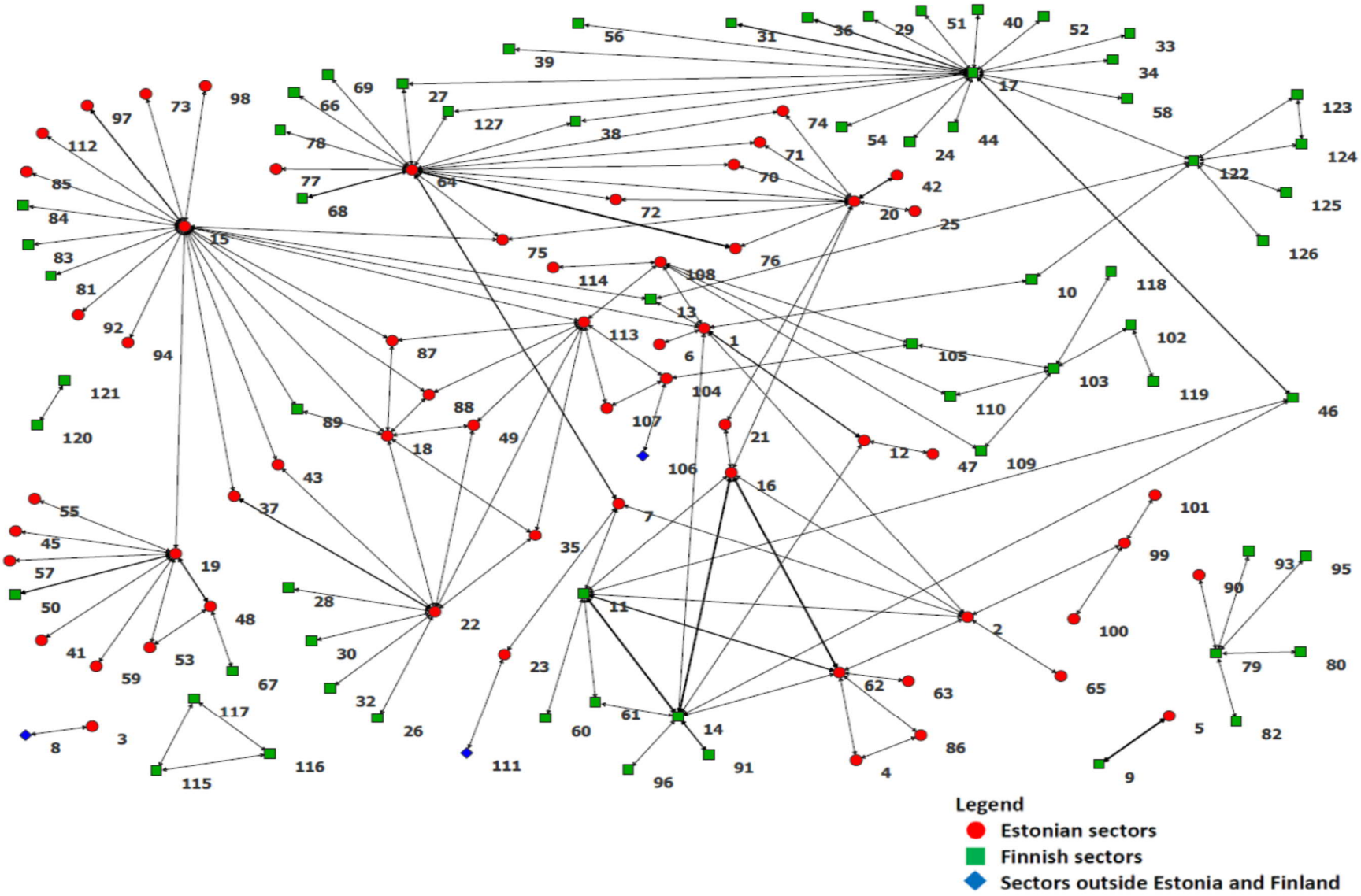

Figure 3. Organization-based informal networks in Gulf of Finland and Archipelago Sea area (*Source*: Author's compilation based on the online survey)

Person-based networks

As seen from Figure 4, there are altogether seven person-based informal networks from which six networks are very small and rather one-person based networks, i.e. respondent who has reported his/her contacts, but we have not gotten a response from his/her contact. However, it can also be that there genuinely is a single-standing network.

Figure 4 also shows that the connected networks are rounded around one person who connects people or other networks from both countries, i.e. the socio-economic networks are very person-based. The fact that networks are more personal relations' based and developed over a long period of time was also confirmed by the interviews:

"Cross-border networking is rather person-based, i.e. every person involved in the field creates his/her own [personal] *contacts"*

Furthermore, as came out from the interviews, usually, when a person leaves his/her position in organization, he/she usually takes his/her contacts with him/her.

"Even though the developed contacts will remain inside the organization, i.e. with whom to talk and about what, it is not easy for the newcomer [to take over] *as the contacts are rather personal."*

The downside of strongly personal contacts is that when person leaves his/her workplace, the whole network falls down and building a new network takes a lot of time. Figure 4 shows, that in several cases there is only one person connecting the networks (for example # 22; #90 and #54). Disconnecting this person may disconnect the whole network. However, it is brought out by interviewees that cross-border connections can be built more easily when there have been good connections beforehand either with the particular organization or with the region/area as a whole:

"Networking is also influenced by the rate of how much the area and its people are known overseas. It is easier to make contacts with areas and organizations about which you have previously heard or from where you know people."

As seen from Figure 4, there are only two fully nation-based networks, other networks are all international, i.e. people from both sides of the border are represented within a network. Following the interviews, the informal networking is mainly about finding the necessary data or best practices for the maritime spatial planning.

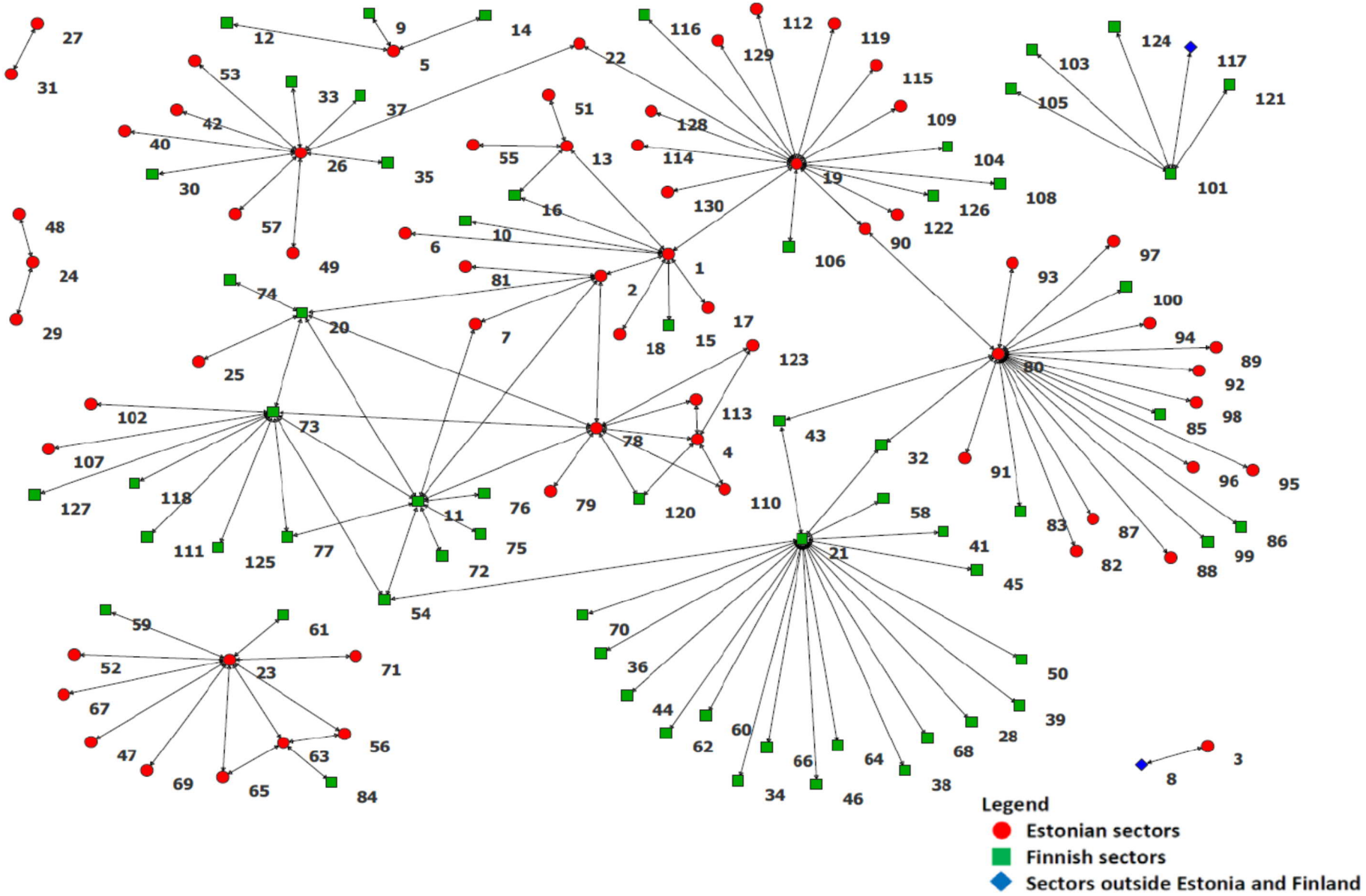

Figure 4. Person-based informal networks in Gulf of Finland and Archipelago Sea area (*Source*: Author's compilation based on the online survey)

4.1.2. Formal networks

Based on the responses from the online survey and the answers from interviews, we divided formal networks in the Gulf of Finland and Archipelago Sea area as follows (see Annex 6 for the list of formal networks in project area):

(1) EU-project specific networks;
(2) international networks;
(3) national networks.

As seen from Annex 6, there is a rather high participation of online survey respondents and interviewees within the formal networks. We were able to identify altogether 53 networks with six EU project specific networks, 26 international networks and 21 national networks (8 from Finland and 13 from Estonia). To see how the maritime sectors are connected with formal networks, Figure 5 was composed.

In discussing Figure 5, it must be taken into consideration that there were some limitations in the analysis of the formal networks:

(1) The names of the networks were in most cases given as abbrevations. Majority of those abbrevations were identifiable via Google research and though are presented in Figure 5. Networks/Abbrevations not identified (3 in total) were excluded;

(2) Concerning the country-specific networks, the names of the networks are available only in original language and to give the essence of those networks, those names were translated into English. Even though, the translation is performed by the best knowledge of the author, the names in English may not fully be in accordance with the official name of the network in national language.

Figure 5 shows that maritime sectors in both countries are rather well connected with all the three types of formal networks. All Estonian maritime sectors have direct contact with international networks. Estonian Ministries, Ports, NGOs and National Networks have reported strong relations with International Networks. Estonian Energy sector, Tourism sector and Ministries have reported no connection with EU project specific networks. Only four Estonian sectors – Municipality/county, Tourism, NGO and Ports have reported connections with National Networks.

From Figure 5 can be inferred that Finnish NGO and National Networks have not declared relationship with International Networks. The strongest relations with International Networks are reported by Finnish Ports and Finnish Governmental Organization. Only three Finnish maritime sectors – NGOs, Energy sector and Ports – have reported relationship with Finnish National Networks. Three Finnish maritime sectors – Governmental organizations, Universities and Tourism sector – have reported relationship with EU project specific networks.

Interestingly, many respondents from national networks reported no knowledge nor contact with similar networks across the Gulf of Finland. This is described by one of the respondent as follows:

"Even though I am the member of the nation-wide sector-specific network, I have no information about the similar networks across the sea, nor have I any contacts with them. /…/ I know many sub-networks of my nation-wide sector-specific network, but cooperation between them is rare and random"

Based on the survey responses we found that international networks meet mainly once a year or quarterly whereas national and EU project specific networks are rather active and meet mainly once per month. Participation in those networks in all the three cases is rather high as respondents indicated that they participate in most of the network's activities and in addition communicate within the network via e-mail, Skype and telephone.

We also asked from the online survey respondents and interviewees how they got to know about the formal networks and why they joined the formal networks. As appeared, the information about the formal networks was shared through the informal networks, i.e. the respondent or interviewee knew someone who participates in the formal network. Also, joining formal networks was mainly through informal contacts, i.e. respondents or interviewees knew someone from their personal informal network who suggested or invited them to join the formal network.

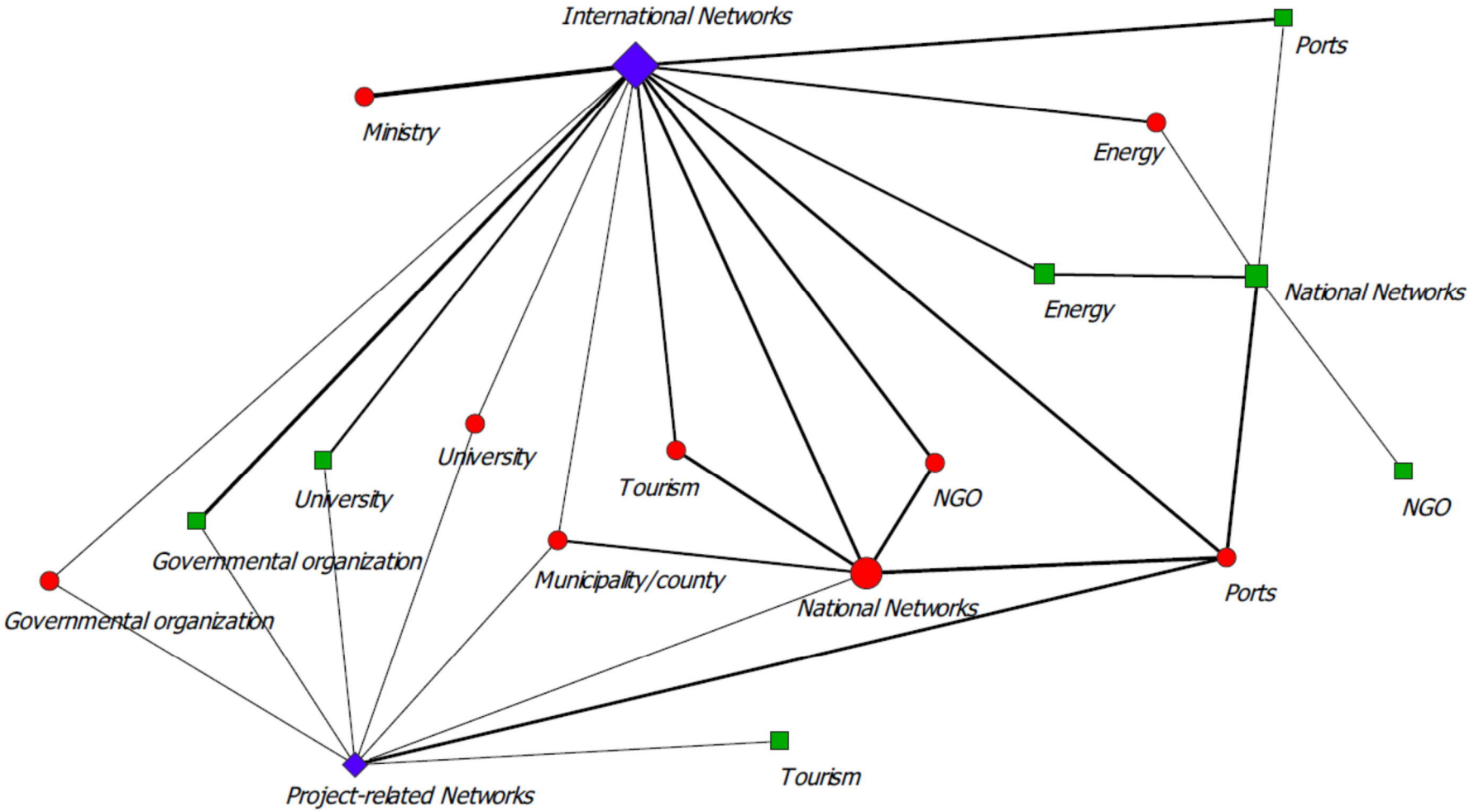

Figure 5. Connection of maritime sectors via formal networks (*Source:* Author's compilation based on online survey and interviews)

Table 2 below presents reasons for participation in formal networks brought out by online survey respondents and interviewees.

Table 2. Reasons for participation in formal networks

	EU project specific networks	International networks	National networks
Information sharing	X	X	X
Targeting common problems	X	X	X
Experience sharing	X	X	
Cooperation as such	X	X	X
Financial resources were needed	X		X
We are in the same field of activity as the network		X	
Founders of this network			X
To continue with the same partners from previous project	X		
We have the same objectives as the network	X	X	X
To provide for strategical processes (lobby)		X	
To be included in conversations about our field of activity		X	
International agreements force us to participate		X	
Better management of common resources		X	

As can be seen from Table 2, there are three main reasons to participate in all the three types of formal networks. Firstly, cooperation as such was brought out:

"Cooperation is power. Together we can achieve better results. Many benefits. Taking advantage of skills. We have a small country and any cooperation and interaction between industries strengthens the sector itself."

Secondly, respondents and interviewees saw information sharing and targeting common issues a reason to participate in formal networks:

"Networking is mostly about keeping up with development"

"Networking is informing members of the bigger picture, about local and regional needs, and the needs of owners (privately owned harbours)."

Third reason for joining formal networks was that participants share the same objectives as the network.

There were also mentioned some network-specific reasons for joining the network. For example, for joining the international networks, the aim "*to provide for the strategical processes (lobby)"* was brought out as a way to influence the policies about a particular sector:

"*In that the benefit … to drive the sector and related political and funding support mechanisms that support the sector there needs to be a consortium of multiple companies to progress conversation and support.*"

Or as a way to inclease the knowledge and the image of a particular sector:

"/…/ and to some extent remove the preconception that energy production and the energy sector are bad for the environment."

4.1.3. Maritime spatial planning related networks

As a part of the online survey, we asked respondents about their knowledge and involvement in maritime spatial planning. We found that most of the survey respondents (53.3%) are currently involved in some way with maritime spatial planning. There are several respondents who are not actively participating in maritime spatial planning, but are receiving maritime spatial planning related information concerning the area the respondent is operating in:

"We have not participated actively in maritime spatial planning, but have received maritime spatial planning related information/documents from municipality"

Also, we found that many of those who are currently not involved in maritime spatial planning consider either involvement in maritime spatial planning or at least obtaining information about ongoing maritime spatial plans essential:

"My actions as a fisherman are either enforced or inhibited by everything that goes on in the sea or on the sea shore, including what goes on in the rivers that are running onto the sea"

We also found that from those respondents who are currently involved with maritime spatial planning, 62.5% are involved directly with maritime spatial planning as their daily responsibility. These are mostly respondents from the public sector organizations who are obligated to take part in state-wide spatial planning.

19.2% of the survey respondents are involved currently with maritime spatial planning through either EU project specific network, national network or international network:

"Both I personally and the company take part in it [maritime spatial planning] *actively. We deliver information and comments to the group that manages the maritime spatial planning at regional level"*

Remaining 18.3% of the survey respondents are involved with maritime spatial planning only when they are asked for their opinion as a member of their professional union or as a member of a related working group:

"We do not do any networking in maritime spatial planning, but we have been asked for statements"

"We follow maritime spatial planning to the point it is required by government: conflicts, demand for our services in the future, events organized by the ministry etc"

Responses to online survey showed that the most enthusiastic in participating in maritime spatial planning are ports or unions of ports, and energy companies or unions of energy companies. This can be explained as follows: those organizations are the most interested in maritime spatial planning because their daily business involves erecting large buildings on the sea shore or into the sea. For the latter, maritime spatial planning is required.

"We are participating in as many spatial plannings as possible because the activities of a port cannot be executed without environmental plans. However, there are not so many maritime spatial plans concerning Gulf of Finland and Archipelago Sea area"

4.1.4. Conflicting networks

As a part of the online survey and interviews, we asked about the existence of conflicting networks in Gulf of Finland and Archipelago Sea Area. Altogether four conflicting networks were mentioned:

(1) nature protection and tourism;
(2) nature protection and fishery;
(3) nature protection and wind parks;
(4) shipping and fishery.

Firstly, **conflict between nature protection and tourism** was mentioned because tourism disturbes wildlife, damages inhabitants and communities. Respondents offered the following solution to the conflict:

"It can be avoided by organizing skilled tourism and raising awareness about this conflict among tourists and tourism-related organizations"

Secondly, **conflict between nature protection and fishery** was reported because

(1) impressions of durable solutions from both sides differ considerably which leads to the continuing deterioration of the operating interests;
(2) seals are under the nature protection, but they damage the nets and eat the catch of fishermen;
(3) catching birds and seals with the nets as a co-product of fishing.

Communication between both conflicting parties was seen as a solution to the conflict.

Thirdly, **conflict between nature protection and wind parks** was reported because of the negative impact of operation of wind parks and construction of pipelines to the nature. Better communication of both sides of the conflict to find better solutions was proposed by the respondents of the online survey.

Finally, **conflict between shipping and fishery** was reported because harbor constructions and associated disposal sites are disturbing the fish and though both the size of the fishing areas and the amount of fish are decreasing. Respondents offered the following solutions:

(1) a proactive consultation is needed on time;
(2) during the maritime spatial planning, also opinion of fishermen or their representatives must be heard and taken into account.

4.2. Main deficiencies in networking

Respondents of online survey and interviewees brought out the lack of information and communication are the main hindering factors for cross-border networking in Gulf of Finland and Archipelago Sea area.

Lack of information. 56.4% of survey respondents found that there is not enough information for cross-border networking between Estonia and Finland in their field of activity. The lack of information for cross-border networking was also mentioned by most of the interviewees. Survey respondents and interviewees brought out a lack of the following information:

(1) information about the shipping routes of the other side to avoid conflict between the routes;
(2) information about spatial plans of the neighbouring subnational governments across the sea – especially information about the environmental issues is needed. This is necessary for planning the coastal areas of the subnational governments;
(3) in-depth analyses about the usage of the sea, for example, how intense is planned cargo trafficking on Kotka-Sillamäe shipping route.

However, respondents from public and private sector see the lack of information differently. This means that private organizations report the lack of information, while public sector and governmental organizations are confident that there is enough publicly available information to enhance cross-border networking in general but also cross-border networking in maritime spatial planning:

"I believe that there is more than enough information. All those national and international projects have created a big mess as the interest groups do not know anymore how to distinguish between the information. Our [ministries'] *first and foremost important task is to help target groups to distinguish between the provided information to understand how the results of a particular project will influence their future lives."*

Both, the survey respondents and the interviewees find that there is enough country-based information for both maritime spatial planning and networking in general, however, the needed information is fragmented and hard to find. The latter means that the time and effort put into search for information is considered not to be worth it.

Lack of communication is another impediment mentioned in responses of the online survey and interviews. To provide an example, the following communication was reported to be rather weak or absent:

(1) communication between the fishermen and the national unions of fishermen;

(2) communication between the national unions of fishermen and the national decision-makers;
(3) cross-border communication between the national decision-makers.

Respondents and interviewees report that the lack of communication has created a situation where, for example, the professional fishermen perceive that their voice about the coastal spatial planning is not heard or ignored by the national decision-makers. A representative of the ports in Gulf of Finland and Archipealgo Sea area has put it this way:

"I agree that networking should be improved and increased as there is too much miscommunication in our field of activity. For example, communication between producer and freight forwarder."

Lack of communication (intra-state cross-sectoral communication) was brought out also by the energy sector, as a factor, which hinders the development of the sector nationally.

4.3. Suggestions for improving networking

In the online survey and during the interviewees we asked about suggestions for improving both intra-state and inter-state networking. 80.8% of survey respondents found that cross-border networking in maritime related areas must be increased. Respondents see the biggest need for increasing cross-border networking in areas like blue bio-economy (28.0% of respondents), marine transportation (27.1%), tourism (21.2%), sub-sea resources (9.3%), and energy (8.8%). In addition to the pre-mentioned, the survey respondents brought out that enhancing networking in non-maritime areas like networking about children and youth related issues, environmental issues and sports related to sea, is strongly needed.

The following proposals for inproving cross-border networking are based on the suggestions made by the respondents of the online survey and by the interviewees.

4.3.1. Proposed activities to increase networking

Activities to increase networking proposed by respondents of the online survey and interviewees, can be grouped as follows:
(1) sharing information;
(2) increasing communication;
(3) creation of unified (cross-border) documents;
(4) creation and enhancement of networks.

Sharing information

There were proposed the following solutions to solve the lack of information. Firstly, to collect all the existing cross-border information needed for coastal and maritime spatial planning, unify it, generalize it, prepare it for public use and present it in a database accessible for both sides of the Gulf of Finland and Archipelago Sea area. The presented information should include among other things the possible effects of maritime spatial planning to the other side of the border and should be made available also for private sector entities. This information is especially relevant to solve the special cases and/or specific maritime-related spatial planning issues. For collecting and managing as wide range of cross-border infromation as possible survey respondents suggest two possibilities:
(1) to form an *ad hoc* group that is partly project-based financing and partly state-financed;
(2) to create a permanent legal body that administers and provides cross-border information. Initially, this legal body can be project-based, later, if there is a long-term need for this kind of organization, other means for financing should be found.

Secondly, there should be created a body or organization that acts as an umbrella organization for all the private and public entities active in the particular sector. This body or organization is the one who is responsible for the communication and information sharing within this sector and with other relevant sectors.

Increasing communication

Better cross-sectorial communication enables organizations to provide better and higher quality services. Not involving all the sectors concerned may lead to a situation where organizations will not know the various impacts of their decisions as, for example, economic impact can be also indirect. Respondents to the online survey and interviewees suggested that increase in communication should be achieved via the following:

(1) public entities from both sides of the border should meet at least once a year to give each other an overview about what is going on currently with maritime spatial planning related issues; and what are the future plans concerning maritime spatial planning related issues;
(2) public entities and private bodies should participate in each others' fairs, conferences and seminars;
(3) administrators should communicate across the border in addition to professional basis also in personal basis. Interestingly, the interviewees from the public sector brought out that there is enough national and international communication within the public sector. However, they agree that the communication is only capital city based, i.e. all the meetings and main maritime spatial planning related connections are situated in Tallinn or in Helsinki;
(4) conduct seminars and meetings where relevant stakeholders from both private and public entities from both sides of the border are represented;
(5) cross-border projects involving relevant stakeholders from both sides of the border;
(6) create communication systems and procedures, especially in the fields of economics and safety;
(7) increase communication via various channels, including media. Under here also an opportunity to create special social-media channels for specific (working) groups, activity fields or for solving specific issues was suggested. Those (working) groups should be both cross-governance and cross-secoral.

Creation of unified cross-border documents.

Importance of developing common documents has been emphasized by many of the respondents. It seems that there is a high need for:

(1) unified long-term plans including ports, marine transportation routes, energy plants, fishery areas. Development of an integrated maritime spatial plan for the Gulf of Finland and Archipelago Sea area was suggested as a solution to improve cross-border networking. This general plan can be used for generating specific spatial plans in coastal or coastal-sea area to, for example, coordinate the shipping routes.

However, the overall concern of the online survey respondents and interviewees was that creation of the cross-border maritime spatial plan will restrict the everyday operations and development of the organizations in maritime related sectors:

"The small size of our country and market requires that we must be very fast and competitive. We are afraid that the additional planning – cross-border maritime spatial planning – that has been now initiated on a national level will add an extra step to our operation and though either create restrictions or slow us down. For example, when we think to extend our port, we plan far ahead and make sure the extension will be in accordance with all the needed strategical documents. However, adding an additional document – a cross-border maritime spatial plan – with what all our ports have to be in accordance with, may add a lot of additional work.We think that developing a maritime spatial plan should not create a situation where developing or extending ports will take forever."

"When planning land use, sufficient room for development should be left for small developments"

To avoid these pre-mentioned problems, interviewees have suggested that the development of national maritime spatial plan should be an addition to current spatial plans but not a new plan with new requirements and procedures.

(2) unified documents for quality standards, professional standars, methodology for service provision and service standards. Those documents are needed to solve the economic, regional, political and safety issues.

"There should be created a common understanding about the quality and methods of the service provision in small ports as it is an international safety issue."

(3) unified documents for cross-border emergency situations or cross-border situations demanding special care. These documents are needed to solve these kinds of situations fast and without creating a conflict.

Creation and enhancement of networks

There were several ideas provided for creation and enhancement of cross-border networks:
(1) respective organizations / administrators should get involved with EU-wide sector-based networks;
(2) respective organizations / administrators should engage also with organizations outside the public sector:

"One good example is the sea meet of the Eastern Gulf of Finland. It has been operating for a long time, at least for twenty years … a pretty loosely knot network where St Petersburg area participates strongly, from Finland there is Turku, Kotka, Helsinki, from Estonia there are some coastal towns, Tallinn. This group, network meets every year. The meet lasts couple of days and creates an outlook as to what to do in the area, what needs have been identified and what we could do together rather than individually. This has given rise to interesting information sharing and lets say small boat faring both ways across the border /…/. These are the kind of networks that involve top experts from respective sectors"

(3) to boost existing networks and create new ones. Several respondents brought out that networks developed with a certain aim, such as, for example, development of maritime spatial planning in a particular area, *'are functioning the best'*. From other hand, *'to create a network without a concrete aim does not make sense'*. Also, from the responses to the online survey we could infer that not every maritime sector has unions or so called 'roof organizations':

"A coordination organization in tourism, involving different related parties, is needed. Currently it is difficult to get information, such as, for example, about Estonian small ports or other stakeholders involved in tourism sector. The coordinating organization should gather and systemize information about certain region and though could help develop Estonian-Finnish cooperation in the field of tourism. Currently it is sometimes easier to get information from Finland than from Estonia because the latter still has room for development concerning speed and flexibility of communication."

Non-existent unions or 'roof organizations', however, can hamper the developemt of the sector:

"We have supported the study tours of owners of small ports to Finland but it is difficult to organize this kind of cooperation support because small ports in Estonia do not have a roof organization."

(4) to develop projects. Projects were seen to provide to the increase of cross-border networking in two ways. Firstly, they were seen as a tool for creating, renewing and strengthening cross-border networks. The creation and improvement of networks through projects was mentioned many times, especially among small enterprises:

"Improving networking should be done through projects where contacts are established. This kind of projects help entrepreneurs who often have no resources to search for contacts themselves"

These are the kinds of projects where working groups are formed consisting of specialists from both sides of the border. However, some of the respondents brought out that sometimes the networks created in international projects disappear after the project ends. Secondly, projects were seen to *"enhance networking and provide finances for needed (small) investment"*. Interviewees emphasized that both international projects and projects involving several sectors and administration levels should get state support – both financial and non-financial.

However, it was brought out by interviewees that networking is going more via organic connections/contacts than via EU projects because networks created via EU projects include different people than naturally formed networks. EU projects usually involve mostly universities and consultants but not so much companies because

companies have no resources for participation in EU projects. It is a problem that EU projects are not implemented involving real actors in the sector.

(5) organizing study visits was also mentioned as a way to create networks;
(6) creating or getting involved in new opportunities, for example:

"Finland has high interest over Rail Baltic. This enables us [ports on both sides of the border] *to communicate more about our services connected to Rail Baltic"*

"The tunnel between Helsinki and Tallinn is something around what the cooperation will start blossoming"

"We believe that the establishment of Rail Baltic will increase our networking also with other sectors"

Survey respondents and interviewees were aware that those above mentioned six solutions demand resources like time, human resources and finances which nowadays are lacking. It was also brought out that not only increasing the networking is important, maintaining the networks is equally important, because

'Networking is not a magic word itself but instead what it does on a particular level.'

"After we've built these networks and relations, these networks and relations should be maintained through cooperation"

As there were many suggestions about how to increase the networking, we asked about who should enhance networking. Interestingly, private sector entities saw that the catalyst and the motor for the cross-border networking should be the public sector. For example:

"Cooperation should be coordinated by the state, considering long-term policies"

"Networking must be coordinated by some organization which has enough authority. This authority should also create an umbrella, i.e. there is a lot of small-scale networking going on around Gulf of Finland, but there is no umbrella to make the networking a whole."

"Public sector (central government; county government; local government) should enforce networking more through creating visions and enforcing them. Public sector should be the leader in various sectors. This is mainly because private sectors have only their own income and they are not financially able to lead the activities / networking of the whole sector. Also, private sector entities are mainly thinking and acting within their entreprise or in best cases within their sector. Public sector has the wider picture and resources to do the research and enforce networking through connecting the right partners."

"The weight to increase networking in Gulf of Finland and Archipelago Sea area should be carried mainly by nation governments and international organizations as they have wider picture and resources to do so. Furthermore, they [national governments and international organizations] *have the power to influence the whole situation in our area, i.e. their involvement matters."*

At the same time, public sector entities pointed back to the private sector:

"The sectors, stakeholders and local communities themselves should develop contacts/networking."

4.3.2. Type of networking to be increased

Most of the respondents and interviewees agreed that networking is needed to know what others are doing; where and how everything is done and what cooperation opportunities do exist. Interviewees and survey respondents were proposing that the following types of networks should be increased:

(1) intra-sectoral networking;
(2) cross-sectoral networking;
(3) cross-border networking.

Intra-sectorial networking

Following the interviews, intra-sectorial networking is especially important for the micro companies within the sector because networking enables micro companies to have a better gasp about what is going on in the sector – they will gain more information –, they see how others are solving similar problems, and marketing of their services is easier:

'Cooperation/netwoks are important because it makes no sense to market only one port – there needs to be marketed a network of ports.'

Also was brought out that intra-sectoral networking helps to achieve cost-efficiency and synergy through cooperation.

"First of all we need cooperation on the development side of technology and business: it requires cross-border planning from multiple perspectives in terms of technical planning and project specifics to ensure cost savings in projects and to create a bigger investment plan so that we can elevate the interest of Mid-Europe to these sea areas, and to receive international funding and skills to support these projects."

Cross-sectoral networking

Survey respondents and interviewees brought out that cross-sectoral networking should be increased because sectors have impacts on each other, like, for example, equipment production for wind energy and wind energy production are strongly related. Cross-sectoral networking also enables to develop the value chain. Furthermore, many of the maritime-related sectors are rather multifunctional. One of these multifunctional maritime-related sectors is tourism for which cross-sectoral networking with, for example, transportation sector is especially important.

"Cross-sectoral networks are very important and they should include representatives from all tourism-related sectors, e.g. food production, industries etc. that brings added value to tourism"

Furthermore, respondents and interviewees brought out that as the Baltic Sea region is a very small area, networking has to involve everyone because *"in such a small area one cannot target the issues in smaller, sub-areas. Everything has to be done involving all the related parties"*.

The role of public sector in cross-sectoral networking was brought out several times:

"We cooperate with other ports, but not so much with other sectors only with local governments when they are involved through partnering ports"

"I believe in cooperation between sectors. Investments often support cross-sectoral networking: similar areas, similar challenges, similar visions. Partners are similar. Of course the government should be involved"

Another suggestion under cross-sectoral networking made by both the interviewees and online survey respondents was to increase networking between maritime-related sectors and sectors that are land-locked.

Cross-border networking

Several respondents and interviewees brought out the importance to increase cross-border networking because of the small size of the countries on both sides of the border:

"Alone, Finland is too small and definitely needs cooperation with its neighbours."

However, it was emphasized several times that cross-border networking should not be limited with cooperation between Tallinn and Helsinki – capital cities of Estonia and Finland – but must be further developed along the sea shore area to cover the whole Gulf of Finland and Archipelage Sea area. Respondents and interviewees were aware that cross-border networking that involves the whole coastal area cannot be only one sector based, but should involve several sectors.

However, even though there were several suggestions made to improve intra-state as well as inter-state networking, the interviewees and respondents to the online survey agreed that the networking should be beneficial. Or as one interviewee put it:

"You shouldn't network just for networking's sake but because it is beneficial - it should create value for everyone involved."

4.4. Future trends in networking

This section is composed based on interviews about trends in networking (see Annex 5 for the interview plan). As seen from below, some of the sectors had a very clear view what the future brings, as for some sectors, the view was rather vague. However, the latter can also represent the interviewee's knowledge and perceptions about the future trends and not the sector's.

Energy

Interviewees from the energy sector were emphasizing that *"wind power will be the rising energy production factor"*. They also saw that networking between wind energy and defense sectors is becoming more and more important. Networking with defense sector was seen especially important to avoid conflicts between sectors and even countries. Also, increase in cross-border sectoral networking was brought out:

"In Gulf of Finland there should be one offshore windfarm in Estonia and one in Finland and a cable should connect them. This cable can be used also for desynchronization purposes. Such cooperation would be cool and would increase also the energy safety."

Marine transportation

As far as ports are concerned, networking in Finland between the capital city and surroundings will increase. Also networking between ports both small and big ports of Finland, Estonia and Sweden will increase. Networking among ports in Gulf of Finland and Archipelago Sea area increases because the space is small and conditions on the sea area affect all sides. Furthermore, in the future, ports will be more close-knit and they will form bigger units because everyone cannot do everything, i.e. ports specialize more in the future.

Sectoral networking in marine transportation shifts towards networking among transportation, production, storage and ports. This is essential as good logistics determines the success of freight movement and fulfillment of the environmental conditions.

Focus of networking in marine transportation shifts more to the environmental issues, traffic communication, security and overall accessibility. Also, communication about routes and connections will increase.

Marine building

Connection between Estonia and Finland becomes stronger and networking in marine building shifts towards easy movement, support, service provision, also LNG, sewage, ground energy and overall impacts to environment. These issues bring under the focus resources for development – a tool for growing traffic and though development of terminal-infrastructure.

Marine fishing and aquaculture

Both inter-state as well as intra-state networking was seen as increasing. The shift of networking will be towards pests and topics about taking care of the sea. Also, to be stronger, the industries think about uniting their resources.

Tourism and maritime industry

The future cooperation in tourism shifts towards coastal experiences, lengthening the seasons, programming logistics of services and accommodation. Networking with research institutes is essential as these research topics are in key position. Factual knowledge and research-based information will be used as a decision-making tool to develop tourism and tourism-related areas such as, for example, traffic, all logistics. Also, tourism as coastal trips increases. Within tourism sector different user groups are considered on a large scale.

5. CONCLUSION

The aim of this research was to define the key actors, network characteristics and trends in socio-economic networks in Gulf of Finland and Archipelago Sea area[6], in particular, networks connected to maritime spatial planning. Keeping in mind the aim of this research, we addressed the following research questions:

(1) What kind of maritime spatial planning related networks exist in Gulf of Finland and Archipelago Sea area?
(2) What is the maritime value of those networks?
(3) How public sector influences maritime spatial planning related networks?
(4) What are the characteristics and trends of maritime spatial planning related networks in Gulf of Finland and Archipelago Sea area?

As the nature of the research problem is complex, a multi-method approach was taken using both interviews and an online survey to answer those questions. Two kinds of data was collected – quantitative data collected through an online survey and qualitative data collected through two types of interviews.

For the online survey we sent out 7118 invitations to potential respondents and received altogether 207 fully completed responses which makes 2.9% of the potential responses. Interviews were conducted in two sents. Firstly, interviews about networks' characteristics were conducted with total of 8 interviewees – 4 from Estonia and 4 from Finland. Secondly, based on the outcomes of the online survey and interviews about networks' characteristics, interviews about trends in networking were conducted with 23 in total – 8 from Estonia and 15 from Finland. Based on the outcomes of the online survey and two types of interviews, we found the following.

Maritime spatial planning related networks in Gulf of Finland and Archipelago Sea Area

We asked survey respondents and interviewees to name the networks they are connected with. We found that there are three types of formal networks survey respondents are connected with – EU project specific networks, international networks and national networks. There is a rather high participation of online survey respondents and interviewees within the formal networks. We were able to identify altogether 53 networks with six EU project specific networks, 26 international networks and 21 national networks (8 from Finland and 13 from Estonia). Maritime sectors in both countries are rather well connected with all the three types of formal networks.

To track the informal networks, we asked survey respondents to list up to 20 persons outside their organization with whom they have the most maritime spatial planning related connection. Based on that information we visualized three informal networks – person-based networks, organization-based networks and sector-based networks. We found that informal networks are rather person-based and public sector dominated. The latter may be because the maritime spatial planning related issues are dominantly a responsibility of a public sector in both countries – Estonia and Finland.

There were found four conflicting networks:
(1) nature protection and tourism;
(2) Nature protection and fishery;
(3) Nature protection and wind parks;
(4) Shipping and fishery.

[6] The research area was including four counties from Estonia (Lääne, Lääne-Viru, Harju and Ida-Viru) and three regions from Finland (Uusimaa, Kymenlaakso and Southwest Finland)

Maritime value of networks

To find the maritime value of the networks, we asked survey respondents to report their involvement in maritime spatial planning issues in general. We found that 53.3% of the survey respondents are currently involved in some way with maritime spatial planning. From these 53.3%, 62.5% are involved directly with maritime spatial planning as their everyday job responsibility. These are mostly public sector organizations who are obligated to take part in state-wide spatial planning. 19.2% of the survey respondents are involved currently with maritime spatial planning through some (EU) project and 18.3% of the survey respondents are involved with maritime spatial planning when they are asked for their opinion as a member of their union or when they were asked to participate in a maritime spatial planning related working group.

Public sector influence in maritime spatial planning related networks

We found that public sector influence towards the socio-economic networks in the Gulf of Finland and Archipelago Sea area is essential as the maritime spatial planning is regulated and dominated by the public sector in both countries. We also found that even though the public sector is dominating the maritime spatial planning related networks in Gulf of Finland and Archipelago Sea area, the privat sector entities are expecting even more thorough involvement of public sector in these networks- public sector was expected to enhance and coordinate intra-sectoral, inter-sectoral and cross-border networking and information sharing. Interestingly, public sector entities find themselves doing already enough and do not see increase in their involvement in these three types of networking.

Characteristics of maritime spatial planning related networking

Through the responses to the online survey and interviews we found that maritime spatial planning related networking in Gulf of Finland and Archipelage Sea area has four main characteristics:

(1) both intra-state and inter-state maritime spatial planning related networking is public sector dominated;
(2) maritime spatial planning related networking is based mainly on personal relationships;
(3) there are great differences in perceptions about networking on either side of the border as well as between public and private sector;
(4) there is a lot of uncertainty among the respondents and interviewees, i.e. it seems that there no common understanding what goes on within a particular sector as well as in the particular field in general. The uncertainty also provided conflicting answers from respondents from the same sector.

Respondents of online survey and interviewees brought out the lack of information and communication are the main hindering factors for cross-border networking in Gulf of Finland and Archipelago Sea area. 80.8% of survey respondents found that cross-border networking in maritime related areas must be increased. Respondents see the biggest need for increasing cross-border networking in areas like blue bio-economy (28.0% of respondents), marine transportation (27.1%), tourism (21.2%), sub-sea resources (9.3%), and energy (8.8%). In addition to the pre-mentioned, the survey respondents brought out that enhancing networking in non-maritime areas like networking about children and youth related issues, environmental issues and sports related to sea, is strongly needed. The following activities were proposed to increase cross-border networking:

(1) sharing information;
(2) increasing communication;
(3) creation of unified (cross-border) documents;
(4) creation and enhancement of networks.

Future trends of maritime-related sectors

Some of the sectors had a very clear view what the future brings, as for some sectors, the view was rather vague. However, the latter can also represent the interviewee's knowledge and perceptions about the future trends and not the sector's. The following main trends in networking were brought out:

(1) Energy sector - networking between wind energy and defense sectors is becoming more and more important to avoid conflicts between sectors and even countries. Also, increase in cross-border sectoral networking was brought out;
(2) Marine transportation - networking between the capital city and surroundings increases. Also networking between ports both small and big ports of Finland, Estonia and Sweden increases: ports will be more close-knit and specialize more in the future. Sectoral networking in marine transportation shifts towards networking among transportation, production, storage and ports. Focus of networking in marine transportation shifts more to the environmental issues, traffic communication, security and overall accessibility. Also, communication about routes and connections increases.
(3) Marine building - networking in marine building shifts towards easy movement, support, service provision, also LNG, sewage, ground energy and overall impacts to environment. These issues bring under the focus resources for development – a tool for growing traffic and though development of terminal-infrastructure.
(4) Marine fishing and aquaculture - both inter-state and intra-state networking was seen as increasing. The shift of networking will be towards pests and topics about taking care of the sea.
(5) Tourism and maritime industry - networking in tourism shifts towards coastal experiences, lengthening the seasons, programming logistics of services and accommodation. Networking with research institutes is essential as these research topics are in key position. Factual knowledge and research-based information will be used as a decision-making tool to develop tourism and tourism-related areas such as, for example, traffic, all logistics.

.

REFERENCES

Alapuru, R. and M. Lonkila (2004) Russians' and Estonians' networks in a Tallinn factory, in: R. alapuru, I. Liikanen and M. Lonkila (Eds) Beyond Post Soviet Transitions: Micro Perspectives on Challenge and Survival in Russia and Estonia, pp 101-127 (Saarijärvi: Gummerus Printing).

Borgatti, S. P. and X. Li (2009) On Social Network Analysis in a Supply chain Context, Journal of Supply Chain Management 45:5-22.

Brunet-Jailly, E. (2006) NAFTA and cross-border relation in Niagra, Detroit and Vancouver, Journal of Borderland Studies, 21(2), pp 1-19.

Davies, A. (2002) Power, Politics and Networks: Shaping Partnerships for Sustainable Communities, Area 34:190-203.

Fagerberg, J. and B. Verspagen (2006) Innovation Studies – An Emerging Discipline (or what)? A Study of Global Networks of Innovation Scholars. Paper presented at The Future of Science, Technology and Innovation Policy.

Gonzalez-Gomez, T. and E. Gualda (2014) Cross-Border Networks in Informal and Formal Cooperation in the Border Regions Andalusia-Algarve-Alentejo and South Finland-Estonia, European Planning Studies, 22:7, 1407-1424

Groves, R. M. (2004) Survey errors and survey costs, John Wiley & Sons, Inc., Hoboken, New Jersey.

Heaney, M. and S. McClurg (2009) Social Networks and American Politics: Introduction to the Special Issue. American Politics Research, 37:727-41.

Holman, N. (2008) Community Participation: Using Social Network Analysis to Improve Development Benefits, Environment and Planning C 26:525-43.

Hyvönen, H. (2008) The strength of native ties: Social networks of Finnish immigrants in Estonia, Trames, 12(62/57)(4), pp 421-440.

Ludén, T. (1973) Interaction across an open international boundary: Norway-Sweden, in: T. Lundén (Ed) Boundaries and Regions, pp 147-160 (Trieste: Instituto di Sociologia Internazionale).

Rydin, Y. and N. Holman (2004) Re-evaluating the Contribution of Social Capital in Achieving Sustainable Development. Local Environment 9:117-33.

Scholz, J.T., R. Berardo and B. Kile (2008) Do Networks Solve Collective Action Problems? Credibility, Search, and Collaboration. The Journal of Politics 70:393-406.

Walther, W. and B. Reither (2012) Cross-border policy networks in the trinational region of Basel, CEPS Instead Working Papers.

Wellman, B. (2001) The Persistence and Transformation of Community: From Neighbourhood Groups to Social Networks, Report to the Law Commission of Canada.

Wellman, B. (1979) The Community Question: The Intimate Networks of East Yorkers, The American Journal of Sociology 84:1201-31.

ANNEX 1. MARITIME SECTORS

Energy sector on the whole	Maritime cluster on the whole	Blue bio-economy and subsea resources on the whole	Tourism and culture, services for leisure activities on the whole
Wind power	Offshore construction (fixed or floating platforms)	Commercial fishery	Guest harbors and other services for leisure boating
Nuclear power	Shipbuilding	Fish-farming	Submarine tourism, diving
Submarine geothermal energy	Marine transportation (commercial shipping and ports, pilotage and towage of ships)	Aquaculture	Sport fishing
Production and distribution of biofuels	Demolition of ships	Seabed mining (sand, gravel, minerals)	Services for land-based adventure tourism (e.g. camping, hunting, visiting nature parks)
Refinement and distribution of fossil fuels	Clean tech and equipment for marine transportation	Other	Services for maritime adventure tourism (e.g. canoeing, surfing, water-skiing, “jet skiing”)
Construction and maintenance of the grids, energy lines, gas pipes	Dredging, maintenance of waterways		Coastal cruises, taxiboats
Energy transfer and conditioning (e.g. gas pipes)	Building of leisure and sporting boats		Cultural services and attractions in the coastal and archipelago areas
Storage and distribution of liquefied natural gas (LNG)	Warehousing and storage of leisure boats		Accommodation in coastal and archipelago areas, renting vacation homes
Solar power			
Wave energy			
Alternative, experimental energy modes			

ANNEX 2. LETTER TO ONLINE SURVEY RESPONDENTS

Dear Sir/Madam,

We kindly invite you to participate in an online survey on social and economic networks in Gulf of Finland and Archipelago Sea area. The aim of this analysis is to define the key actors and network characteristics in inter-state as well as intra-state maritime connected social-economical public and private networks in Gulf of Finland and Archipelago Sea area, in particular networks connected to maritime spatial planning (MSP).

This online survey is a part of the project Plan4Blue, Maritime Spatial Planning for Sustainable Blue Economies. This project brings together the key blue growth and maritime spatial planning actors from Estonia and Finland to identify pathways to sustainable use of the sea areas and resources. The collaborative process analyses economic potential of the scenarios and identifies environmental risks and management options.

You receive this invitation given your experience in the field. The survey should not take longer than 20 minutes to complete.

Your answers to this survey will be treated as strictly confidential and used exclusively for this study. In the data-set the information will be de-identified. Furthermore: no individual data will be reported, only aggregate data. Thus, we guarantee that in the report no information will be traceable to an individual respondent or organization.

If you have any further questions about this survey, please do not hesitate to contact (in Estonian, Finnish or English):

Annika Jaansoo
University of Tartu
School of Economics and Business Administration
Estonia

e-mail: annika.jaansoo@ut.ee

Thank you so much for your willingness to take the time to complete this survey.

Sincerely,
Annika Jaansoo

Please click on the link to questionnaire: https://survey.ut.ee/index.php/634524?lang=en

ANNEX 3. QUESTIONNAIRE FOR ONLINE SURVEY

I. GENERAL DATA

1. Name of the respondent
2. Position of the respondent
3. Organization of the respondent
4. Country of origin (Estonia; Finland)
5. Field of activity (Energy, Offshore construction; Shipping; Marine transportation; Blue bio-economy; Marine fishing and aquaculture; Tourism (and maritime experience industry), Sub-sea resources)
6. Do you have any connections with maritime planning? (Yes; No)
7. You have chosen 'yes'. Please explain
8. Do you think you have enough information for cross-border cooperation in your field of activity? (Yes; No)
9. You chose 'No'. Please explain what is lacking and how you see the deficiency can be met.
10. Do you think cross-border cooperation in the Gulf of Finland and Archipelago Sea area should be increased between Finland and Estonia?
11. In which field of activity it should be increased? (Other)
12. You chose 'Other'. Please explain.
13. You chose 'No'. Please explain.

II. NETWORKS

This section of the questionnaire focuses on the networks operating in the Gulf of Finland and Archipelago area. Please read each question carefully and answer it independently of any other question.

14. Please list the networks your organization is connected to

Name of network	How often are the network activities performed?	How often do you participate in those interactions?	How do you interact with other actors in this network?	Why your organization joined this network?
	(Annual meetings, Monthly meetings; Weekly meetings)	(In every meeting; Some of the meetings; Never)	(Personally face-to-face; Via Skype; Via e-mail; Via phone)	

15. Are there networks with conflicting concepts?
16. You chose 'yes'. Please fill in the table below

Conflicting networks		Essence of the conflict (How they are in conflict?)	Impact of the conflict	
Name of the network	Name of the network		To your sector	To your organization

III. ACTORS IN NETWORKS

This section of the questionnaire focuses on the actors in networks operating in the Gulf of Finland and Archipelago Sea area. Please read each question carefully and answer it independently of any other question. It is very important that you answer every question for every person.

17. Please list[7] up to 10 individuals outside of your own organization with whom you have the most contact with (e.g. meetings, phone calls, letters, text/instant messages, or emails) regarding the activities in the Gulf of Finland and Archipelago Sea area.

First Name	Last Name	Organization name	Country of origin	E-mail	Field of activity

18. Please list up to 10 individuals (in addition to the pre-mentioned) outside of your own organization with whom you have exchanged ideas or materials most often regarding the activities in the Gulf of Finland and Archipelago Sea area.

First Name	Last Name	Organization name	Country of origin	E-mail	Field of activity

[7] In order for your information to be useful, you must include the names of individual people in the spaces for First and Last Name. Please include only one name per space. We will contact the named persons in case they are not already described in our database of potential respondents of this online survey

ANNEX 4. PLAN FOR INTERVIEWS ABOUT NETWORKS

Aim of the interview: To define bottlenecks and possibilities for development of stakeholders' networks in order to support cross-border cooperation in the field of maritime economy supporting also spatial planning activities

Target group: key players defined based on the Social Network Analysis

Interview plan

Research interest	Interview questions
Block I. PERSONAL EXPERIENCE	
Involvement in cross-border cooperation in maritime spatial planning	How much are you involved in cross-border coopera-tion in maritime spatial planning?
	What is the essence of the cross-border coope-ra-tion?
	What is the contact frequency?
	Is the cross-border cooperation more formal or infor-mal?
	What are the drivers for cross-border cooperation
Performance of the networks	How do you assess the performance of the networks you are related to?
	What should be improved? Why? How?
Block II. NETWORKING IN GENERAL	
Cross-border cooperation in maritime spa-tial planning in general	Is there enough cross-border cooperation in project area?
	Should the cross-border cooperation be increased or decreased?
	How it should be increased?
	What is well or bad in cross-border cooperation in maritime spatial planning in general?
	How could different networks support cross-border cooperation between Estonia and Finland?
Interest groups	Do the interest groups have enough information to cooperate across nation border?
	How to improve that?
Public sector role in networking	How big is the public sector role in networking?
	How public sector regulates the networks?
	Should the role of the public sector be increased or decreased? Why?
Public-Private Partnership	What can be done to increase public-private partner-ship in the project area?
Conflicting networks	Are there any conflicting networks?
	What are they?
	How the conflicts can be solved?

ANNEX 5. QUESTIONNAIRE FOR INTERVIEWS ABOUT TRENDS

BUSINESS

1. How do you see the future of your business/your company ... say in 2025-2030?

2. Which factors do you think will most affect the long-term economic development of your company ... say in 10-20 years (turnover, number of employees)?

3. Do you see an increasing or perhaps a decreasing trend in your business/in the business of this field?

4. What kind of new opportunities and possibilities do you see in your business/ in the business of this field ... say by the year 2025-2030?

5. Is there anything you would like to say about the future of your business or the business of this field?

NETWORKING

1. In what kind of networks are you participating? Why have you joined these networks?

2. Do you do any networking in maritime spatial planning? Describe that networking. What has made you to do this kind of networking?

3. What do you see as a future in cross-border networking in Gulf of Finland and Archipelage Sea area in your sector? Between sectors? Between Estonia and Finland? Is it increasing? Decreasing? Why? What characteristics dominate the future networks in Gulf of Finland and Archipelage Sea area? Why?

4. What do you suggest should be done to make networking better / more intense in Gulf of Finland and Archipelago Sea area? Who should do that? Why?

SECTOR-BASED QUESTIONS

1. Energy: What is the share of renewable energy in energy sector say in 2030-2050?

2. Ports. On what does your port plan to specialize in the future (freight transportation or other activity, such as, for example, passenger transportation, offshore wind energy related trafficing, sea tourism, fishing etc)? How will it affect your port in terms of spatial planning?

3. Ports and shipowners: How do you rate the development of autonomous/unmanned shipping in Gulf of Finland and Archipelago Sea area? What would change the current trends in shipping, i.e. reduce freight / passenger transportation?

4. Turism: What kind of tourism will increase in the future, what will decrease? Should some areas be closed for (mass) tourism?

ANNEX 6. LIST OF MARITIME-RELATED FORMAL NETWORKS

EU Project Specific Networks

Name of the network	Essence of the network	Contact
Baltic Science Network (BSN)	Provides science and research ministries of the Baltic Sea region states with an overall coordination framework to develop and implement science policy in a macro-regional dimension and to ensure a better representation of macro-regional interests on the EU level	http://www.baltic-science.org/
Baltic Sea Region Integrated Maritime Cultural Heritage Management (BalticRim)	Project aims at regional sea planning to make sure, that subsea heritage sites would be taken into account	https://www.msp-platform.eu/projects/balticrim-baltic-sea-region-integrated-maritime-cultural-heritage-management
Maritime Spatial Planning for Sustainable Blue Economies (Plan4Blue)	Maritime spatial planning in Gulf of Finland and Archipelago Sea area	https://www.msp-platform.eu/projects/plan4blue-maritime-spatial-planning-sustainable-blue-economies
SustainBaltic	Sustains coastal and marine human-ecological networks in the Baltic Sea Region	http://www.utu.fi/en/sites/SustainBaltic/Pages/home.aspx
Trilateral Gulf of Finland cooperation	Improves the state of the Gulf of Finland through strengthened trilateral environmental co-operation within the gulf's area.	http://www.syke.fi/en-US/Research__Development/Research_and_development_projects/Projects/Trilateral_Gulf_of_Finland_cooperation_Estonia_Russia_Finland
30Miles	Develops small harbours	http://www.merikotka.fi/projects/current-projects/30miles/

International Networks

Baltic Environment Forum (BEF)	Strengthens cooperation of the Baltic States in the field of environmental policy	
Baltic Icebreaker Management (BaltIce)	Provides information and training about ice breaking in the Baltic Sea area	http://baltice.org/
Baltic Ports Organization (BPO)	Inspires and supports its members while cooperating pro-actively with relevant partners	http://www.bpoports.com/
Baltic Region Heritage Committee (BRHC) - Underwater Cultural Heritage	Studies the implications and possible content of a regional agreement to protect underwater cultural heritage in the Baltic Sea	http://www.cbss.org/regional-identity/cultural-heritage/

Baltic Sea Fisheries Forum (BaltFish)	Provides a platform for discussion on important fisheries issues in the Baltic Sea	http://www.helcom.fi/action-areas/fisheries/management/baltfish
Baltic Sea Offshore Wind Forum (BaSOF)		-
BONUS EEIG	For research, technological development and demonstration	https://www.bonusportal.org/
Coalition Clean Baltic (CCB)	To co-operate in activities concerning the Baltic Sea environment	https://ccb.se/about-ccb/
COFASP ERA_NET	To directly access actions envisaged within fisheries, aquaculture and seafood; ended in 31st January 2017	
European Shortsea Network	Promotion and information within all European countries about shortsea shipping	http://www.shortsea.info/
European Travel Commission	For the promotion of Europe as a tourist destination in third markets	http://www.etc-corporate.org/
FECC (Fédération Européenne du Commerce Chimique)	Represents companies which source, develop, market, and distribute a wide range of specialty chemicals and ingredients to users ranging from automotive, electronics, paint, construction to pharmaceutical, cosmetics, food and nutrition industries	https://www.fecc.org/
Friends of the Earth (FoEI)	International network of environmental organizations	https://www.foei.org/
GOFREP	A Mandatory Ship Reporting System. The traffic centres TALLINN TRAFFIC, HELSINKI TRAFFIC and ST. PETERSBURG TRAFFIC monitor shipping movements and provide advice and information about navigational hazards and weather conditions in the Gulf of Finland	https://www.liikennevirasto.fi/web/en/merchant-shipping/gofrep#.W5orL02pW70
HELCOM (Baltic Marine Environment Protection Commission - Helsinki Commission)	Governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area	www.helcom.fi
International Hydrographic Organization (IHO)	To ensure that all the world's seas, oceans and navigable waters are surveyed and charted	https://www.iho.int/srv1/index.php?lang=en
International Association of Ports and Harbours (IAPH)	Represents at international fora the views of port managers/directors and promotes, enhances and protects the interests of the global port industry as a whole	https://www.iaphworldports.org/
Network of the Baltic Sea Harbours		-
Ocean Energy Europe (OEE)	Represents the interests of Europe's ocean energy sector	https://www.oceanenergy-europe.eu/
The big boats group of the Baltic Sea		
The Gulf of Finland Maritime Assembly	Represents ports from Estonia, Finland and Russia	
The International Council for the Exploration of the Sea (ICES)	Develops science and advice to support the sustainable use of the oceans.	http://www.ices.dk/Pages/default.aspx

The Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans)	Marine and maritime research	http://www.jpi-oceans.eu/
The Standing Committee on Agricultural Research (SCAR-Fish)	Givs advice on European agricultural and wider bioeconomy research about Fish and Fishery, along with being a major catalyst for the coordination of national research programmes	https://scar-europe.org/index.php/fish-mission-and-aims
The Union of the Electricity Industry (Eurelectric)	Represents the common interests of the electricity industry at pan-European level; ensures that European regulations are reasonable, supporting sustainable business; protects the postion of energy companies in the market	www.eurelectric.org
The World Association for Waterborne Transport Infrastructure (PIANC)	Provides expert advice on cost-effective, reliable and sustainable infrastructures to facilitate the growth of waterborne transport	http://www.pianc.org/nord-pianc.php
The World Energy Council	Ensures reasonable general energy policy, normal investment climate, long-term policy objectives, stability of policy, fact-based future prognosis	https://www.worldenergy.org
Vision and Strategies Around the Baltic Sea (VASAB)	Spatial planning and development of Baltic Sea region	http://vasab.org/
WWF Baltic Ecoregion Programme	To conserve and restore the health of the Baltic Sea - ensuring a healthy, productive Baltic Sea through sustainable, ecosystem-based management	http://wwf.panda.org/knowledge_hub/where_we_work/baltic/who_we_are/

Country-Specific Networks

Aarresaaret - opasryhmä	Aarresaaret Guide Group	http://www.aarresaaret.fi/vallisaari/vallisaari-retket/
Eesti Keskkonnaühenduste Koda	Estonian Chamber of Environmental Connections	http://www.eko.org.ee/
Eesti Konverentsibüroo	Estonian Convention Bureau	http://www.ecb.ee/en/
Eesti Logistika ja Transiidi Assotsiatsioon	Estonian Logistics and Transit Association	http://www.transit.ee/show/members/lta.html
Eesti Maaturism	Estonian Rural Tourism	http://www.maaturism.ee/
Eesti Väikesadamate Arenduskeskus (EVAK)	Estonian Development Centre for Small Harbours	www.evak.ee
Eesti Ehitusmaterjalide Tootjate Liit (EETL)	Association of Construction Material Producers of Estonia	http://www.eetl.ee/et/
Finnish Tourist Board	Finnish Tourist Board	https://www.iftta.org/content/finnish-tourist-board
Harjumaa Omavalitsuste Liit	Harju County Union of Municipalities	www.hol.ee
Harjumaa Ühisteenuste Keskus	Harju County Common Services' Center	http://www.hol.ee/mtu-harjumaa-uhisteenuste-keskus-201

Helsingin Purjehdus Klubi	Helsinki Sailing Club	http://helsinkisailing.com/aikuispurjehdus/
Lääne-Eesti Turism	West-Estonian Tourism Organization	https://www.westestonia.ee/
Põhja-Eesti Turism	North-Estonian Tourism	http://www.northestonia.ee/
Põhja-Harju Koostöökogu	North-Harju Partnerhip	http://leaderph.eu/
Päästeliit	The Rescue Association	https://paasteliit.ee/
Suomen Satamaliitto	Finnish Port Association	http://www.satamaliitto.fi/fin/
Suomen Meteollisuus	Finnsih Marine Industries	https://meriteollisuus.teknologiateollisuus.fi/
Suomen Moottoriveneklubi RY	Finnish Motor Boat Club	http://www.smkfmk.fi/
Suomen Tuulivoimayhdistys	Finnish Wind Power Association	http://www.tuulivoimayhdistys.fi/en/
Virumaa Rannakalurite Ühing	Union of Virumaa Coastal Fishermen	http://www.vrky.ee/
VisitFinland	VisitFinland	https://www.visitfinland.com/
Väikelaevade mereabi	Sea Aid for Small Ships	

Back cover text

European Regional Development Fund

European Union

Interreg Central Baltic

SYKE

Turun yliopisto
University of Turku

UNIVERSITY OF TARTU

Helsinki-Uusimaa Regional Council

VARSINAIS-SUOMEN LIITTO
EGENTLIGA FINLANDS FÖRBUND
REGIONAL COUNCIL OF SOUTHWEST FINLAND

BEF ESTONIA

SYKE.FI/PROJECTS/PLAN4BLUE