

BALTIC SEA IN ESTONIAN AND FINNISH MEDIA: DISCUSSED TOPICS AND STAKEHOLDERS

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ABSTRACT

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<p>Abstract</p> <p>In this paper the stakeholders and most discussed topics of Baltic Sea in the media are examined. Baltic Sea is a fragile ecosystem that provides variety of services to the locals. Not only the locals hold the stake, but also industries and governments. This paper aims to present the complexity of stakeholder network and contradicting interests. Altogether 104 newspaper articles from Estonian and Finnish media on Baltic Sea were used as the data source and the concerning topics, themes and stakeholders were surveyed. The qualitative data was inserted to the textual analysis software QDA Miner 4 Lite. Three main topics were named according to the concept of three pillars of sustainability- economy, environment and society. Themes in these topics were also listed to further investigate the content of articles. Environment proved to be most presented topic whereas widely discussed themes were pollution and co-operation. It was also noted that country, newspaper and time of publishing had impact on the content. The stakeholder analysis was conducted by creating MAW-model and influence diagram for the listed stakeholders. In this research the main results on stakeholders were the list of stakeholders, their relevancy and connections between them. The thesis contributes to the understanding of the complexity of interests hold in the Baltic Sea and the need for integrated and international management approach. Media analysis approach indicates how Baltic Sea issues are presented to the public and which topics and stakeholders are most relevant based on media's presentation.</p>	
<p>Keywords</p> <p>Baltic Sea, ecosystem services, environmental management, sustainability, stakeholder approach</p>	
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1 INTRODUCTION

1.1 Background and need for this study

Baltic Sea has the heaviest traffic on sea and is the world's largest brackish water body (Hassa et al, 2015). These are only two facts about the unique ecosystem but express its complexity well. The ecosystem of the sea is fragile and unique, making it in need of careful management. Yet the common approach on an international level is difficult to reach, especially as the involved countries have different interests and development levels. Baltic Sea is a common good that provides variety of goods and services but belongs to no-one. Therefore achieving consensus on a variety of topics amongst the stakeholders is being inhibited by the size of the area and contrasting interests. All these aspects together demand for clearer picture on the stakeholders of the sea, the reality of the environmental condition and relevancy of them both. Media represents the perspective that usually reaches the wide audience of the Baltic Sea. Therefore analysing how the sea is presented in media would provide realistic view of topics connected to or affecting the sea. As a result relevant topics and stakeholders will be presented.

Baltic Sea is only the size of Estonia and Finland combined but holds the interests of nine countries. It should not be forgotten that the powerful stakeholders are not only Baltic Sea countries, but also international organizations. Stakeholders can have variety of interests in the sea starting from financial gain to environmental protection. Determining the stakeholders and taking their interests into consideration can contribute to the overall success of management. The complexity of the stakeholders will be undertaken by stakeholder approach to illustrate the stakeholders and their connections. Stakeholder approach is holistic in its nature and suits this case as it is possible to apply this on variety of occasions, including ecosystem and its stakeholders. The stakeholder analysis comprises stakeholder mapping and discussion on their relevancy and influence, showcasing how the stakeholders can have an impact on the sea. Baltic Sea can affect the well-being of stakeholders but it does function also the other way around as pollution, conservation, management and politics, traffic, etc are just few examples of impact on the sea.

Baltic Sea has a long history of international management starting from fishing regulations and traffic control to being the present pioneer for macro-regional strategy (Bengtsson, 2009). Besides the economical benefits the sea is also a recreational spot and it holds a value of bare existence. The sea is a good example of sustainable use as economical, environmental and societal concerns affect one another and have to be considered together holistically. The application of sustainability concept is not limited to one case. The underlying

of sustainability stands in long-term thinking and holistic approach that can benefit businesses or ecosystems (WCED, 1987).

Year 2014 was named as the Year of the Gulf of Finland to raise awareness of its condition and value its services. Events and seminars in Estonia, Finland and Russia took place with the stress on youth education and involvement. The goal was to unite the people around Gulf of Finland and share knowledge and experience. Partly motivated by the concept the newspaper articles from year 2014 are examined in this paper. Topics about the Baltic Sea that reach wider audiences and the stakeholders involved in those will be presented in results.

1.2 Aims of the research

The aim of the research is to indicate main topics discussed in Estonian and Finnish media concerning the Baltic Sea. Overall goal is to get a better and more wide overview of the values of Baltic Sea in the eyes of surrounding population and interested industries. Analysis will be conducted to explain and simplify the interconnected aspects of the Baltic Sea and to analyze the complexity and variety of stakeholders' interests in the ecosystem.

The main groups of topics can be divided by keywords of more detailed issues (e.g. biodiversity). The goal is also to identify the stakeholders who keep an interest in those specific topics and analyse the impact on their individual connections. Through the stakeholder analysis it is presumed to present the tendencies in stakeholder connections and topics.

As a result the Baltic Sea topics which reach the audience most are highlighted and furthermore their significance will be compared. It is expected to present the issues relevant to a country. Supposedly the results will indicate controversy between interests. The frequency of topics discussed in the newspaper articles will show the relevance of some topic at the present media. The same applies to the stakeholders occurrence in the articles. Investigating the media's perspective on the values of the Baltic Sea is necessary to get a new aspect to the research of the sea. Illustrating the view of the sea that newspapers' audience get should showcase the everyday reality of the Baltic Sea and its value as resourceful ecosystem.

1.3 Research task

The task of this research is to showcase relevant topics and the different stakeholders of the Baltic Sea through media's perspective. The two main questions would be:

What are the most-discussed topics about Baltic Sea in the Finnish and Estonian newspapers and are there any significant tendencies or differences between the countries?

Who are the stakeholders of the Baltic Sea, as mentioned in the articles?

The common views and opinions in the society would be presented in the article analysis, e.g. whether ecological issues are more often discussed than transport on the sea. As a result the most discussed topics are listed and analyzed based on the presumption that media presents the topics of readers demand and interest. New topics or problems for further research can be highlighted in the results.

1.4 Structure of the thesis

In this paper the introduction is followed by the literature review introducing the theories and concepts applied or referred to throughout the paper. The background for this study and already conducted research are presented. Next the methodology chapter introduces the approaches and models that are applied in this paper and provides detailed explanations of how the work was conducted.

The results of the research will be presented in timely order meaning in the sequence of conducting the research tasks. First the results of content and themes are presented, followed by stakeholder analysis. Lastly the discussion and conclusion of the outcome of this paper are presented.

2 THEORETICAL FRAMEWORK

2.1 Baltic Sea

Baltic Sea is a fragile ecosystem, political platform and business interest on an international level. Countries surrounding the Baltic Sea are widely varying in their practices and policies, making it difficult task to apply common management.

Baltic Sea is a marine ecosystem with brackish water. It lies in Northern parts of Europe and is surrounded by nine countries. The surface area is about 392,978 km² (Backer, 2015). The catchment area is 1,641,650 km² which is habited by 85 million people (Backer, 2015). The Baltic Sea has a narrow connection with North Sea by the Danish straits. That link with North Sea salty waters maintains the salinity of the Baltic Sea. The average salinity in Baltic Sea stays around 1%, being higher closer to the straits and lower at the far end of Baltic Sea in the Gulf of Finland and Gulf of Bothnia (Ducrotoy and Elliott, 2008). The low salinity makes Baltic Sea the largest water body of brackish water. Above-mentioned brackish water stands here for water which salinity levels stay lower than in the oceans but are not comparable to freshwater either. Brackish water usually evolves near estuaries where freshwater meets saltwater.

2.1.1 Baltic Sea ecosystem's value and vulnerability

The seawater in Baltic Sea is rather unique and provides distinct habitat for both freshwater and saltwater species. These conditions have evolved through time as the connection to the North Sea has not been persistent and different species have found habitat in the sea (Ducrotoy and Elliott, 2008). The complexity of Baltic Sea's conditions is the basis for its uniqueness but also the reasons for its fragility.

Ecosystem value can be complicated to determine as it may be rather intangible. Therefore *the total economic value* approach was first introduced by Pearce and Warford (1993) to simplify the overall value of an ecosystem as total benefits it provides to people. Two different economic values are presented that people use the natural resources for- the *use value* and *non-use value* in figure 1 (Pearce and Warford, 1993). To get a better understanding of ecosystem's value the provided services are listed and appointed to a group of value types. The *direct use value* and *indirect use value* both represent ecosystem services that people can consume. For example all goods that are obtainable e g fish, berries; and also services we use but cannot obtain such as water purification (De Groot et al, 2002). Also recreation can be seen as direct use value as fresh air activities are combined directly with the surrounding nature. The recreational value

comprises not only the people living on the coast but also in the surrounding area and further away. Czajkowski et al (2015) conducted a research on the recreational economic value of the Baltic Sea that resulted in about 15 billion EUR per nine countries around the sea. This is just an example of adding a value for ecosystem's services. The non-use values can be seen as more complex with *bequest value* and *existence value*. Bequest value is the interest in the ecosystem for our future generations and their uses. Lastly the existence value means simply the importance of knowing the ecosystem exists even if there is no direct use to it. It can be seen as least tangible but also most significant value. *Option value* can be considered as between the use and non-use value or completely separate. It stands for all possible future uses the ecosystem holds.

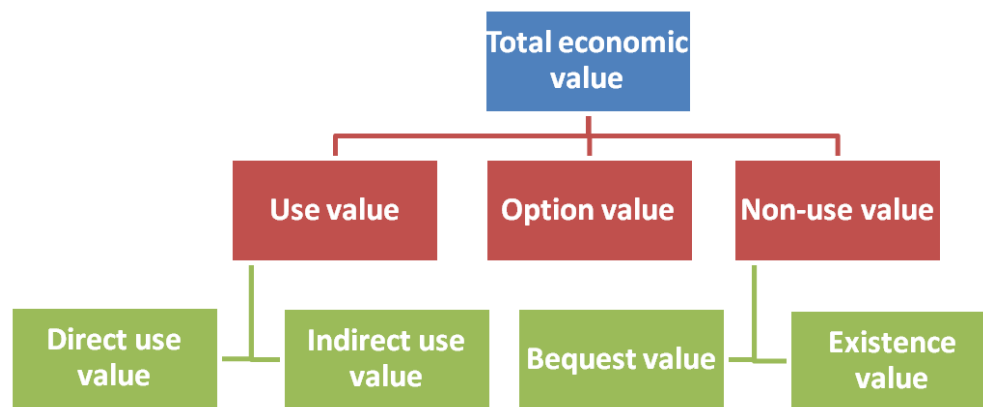


Figure 1. The use of value of ecosystem based on Pearce and Warford, 1993.

The values are based on the functions of the ecosystem that provide services to people. De Groot et al (2002) listed the functions an ecosystem provides that were quite similar to Millennium Assessment 2005 (MA) approach. The most significant difference lied in the *informative* and *cultural functions* as these two cannot be identified easily as equal comparing to other functions (table 1).

Table 1. Comparison of the De Groot et al and Millennium Assessment approaches to ecosystem functions.

De Groot et al 2002	MA 2005
Regulation functions	Regulating functions
Habitat functions	Supporting functions
Production functions	Provisioning functions
Information functions	Cultural functions

The MA (2005) *cultural functions* are for example aesthetic, spiritual and recreational whereas De Groot et al (2002) describe *information functions* as

“opportunities for reflection, spiritual enrichment, cognitive development, recreation and aesthetic experience” (De Groot et al, 2002; p 395). In general the functions stand for the same cause although the titles can be misleading.

People around the Baltic Sea have lived off the ecosystem functions for centuries. Nowadays overexploitation has started to cause problems as the demand exceeds the supply and sustainable use has been highly outweighed. Yet it is important to remember that using the marine ecosystem services is part of the daily life of the coastal people and with cultural value. Some most valuable commercial species in Baltic Sea are herring, salmon, cod and sprat which are loved around the Baltic Sea and also further away (The Fisheries Secretariat, 2015). To limit the overexploitation of fish, all the countries surrounding the sea have to agree upon rules and International Council for the Exploration of the Sea (ICES) publishes their research-based recommendations for the decision-makers to provide sustainable use of marine environments.

Besides the supply of the stock, another problem is the quality as the sea is suffering from pollution. Pollution can be caused by various actors and can appear in different forms. Underwater noise, pollution and waves caused by transportation, dumped waste and agricultural nutrient runoffs are most known disturbances of the Baltic Sea ecosystem (HELCOM, 2015). Fluctuation of the salinity level and changes in the temperature are factors mostly posed by changes in the climate (HELCOM, 2013). The disturbance and changing of the habitat are affecting the sealife. The population of ringed seals is endangered as the ice cover of the Baltic Sea is not as vast as it used to be and lasts for shorter period of time. The ringed seals like to occupy the ice and stay there especially on the pupping season. Baltic Sea hypoxia which is also known as the *dead zones* stands for the areas in the sea bottom where no life activity is to be found as oxygen concentrations remain below 2 mg/l (HELCOM, 2013). Cod is a popular fish on the Baltic Sea cuisine, but it needs deep waters for spawning and the dead zones in the bottom of the sea are minimizing spawning area.

The lack of oxygen has other impacts, for example it causes more phosphorus to be released from the sediments which contributes to the excess of nutrients and algal blooms. Cyanobacteria is bacteria that produces energy for itself by photosynthesis. It blooms with excessive nutrients and changes the quality and conditions of the watercourse by using up the nutrients and producing high amounts of sediments. The bacteria itself poses health risk as it may produce toxins. In that case the swimming in the sea is prohibited which highly affects the surrounding population.

2.1.2 Shared interest and stakeholders

The stakeholders holding an interest in the sea are varied and often with opposing causes. The management of the Baltic Sea involves nine countries with individual politics and a need to cooperate. For example Finland is significant stakeholder in St. Petersburg’s wastewater management system in Russia as the Gulf of Finland connects the countries and is affected by the

wastewater release. The effort in treating wastewater from Finland is ineffectual unless all the surrounding treatment plants are participating.

Cooperation is the key and barrier for the management of the Baltic Sea. *“Baltic Sea area is today a rich mosaic of regions and human networks and has been such for decades if not centuries,”* was described in the introduction to *Media, Interaction and Integration* (Hyvönen et al, 2009; page 10). Europe has number of different regions within itself which tend to overlap. For example Baltic Sea could be one group which can be further divided into Scandinavian or Baltic countries by the sea and so on. Regions are usually based on same interests and have diplomatic, economic and cultural dimensions (Hyvönen et al, 2009). Therefore cooperation between regions often exists as it holds value for all parties. The motivation for cooperation is partly of economical and partly environmental concerns. Baltic Sea region’s economy holds high stakes in the sea as resources pool. Yet if the environmental conditions worsen the effects are seen also on the economy. For example fisheries and environmentalists hold the same interest in the sea- to keep it ecologically healthy, whether for the benefit of the ecosystem or supply of fish stock. In this case environment and economy are dependant on each other and trigger bilateral changes. This over-generalized understanding highlights the co-dependance of countries and need of integration on different sectors in managerial level. Sea is not a commodity that can be divided between countries and managed on local scale only (Elmgren et al, 2015). There can be seaborders but the ecosystem itself cannot be limited to country borders. Hence the need for holistic approach on the management of the Baltic Sea and the involvement of surrounding countries. Finding consensus amongst all countries and interests has been and will continue to be challenging but if the motivation is common it has proved to be achievable. The ecological condition of the Baltic sea has improved since 1960’s largely due to establishment of Helsinki Commission and EU Water Framework Directive and involvement of ICES (Elmgren et al, 2015).

2.1.3 Difficulties of managing the Baltic Sea

Stakeholder theory was originally developed for the organizations, to improve the internal processes and benefit financially. Yet it can be applied in various occasions and is nowadays not limited to organizations as such (Friedman and Miles, 2006).

Baltic Sea is an ecosystem with variety of stakeholders and it cannot have one unified management plan. International cooperation is needed to harmonize the use of its services and create common management policies. The goal is to harmonize the management of the sea as much as possible, but one has to take into consideration the difficulties. As mentioned above, there are number of organizations working on bringing stakeholders together and creating discussion. There are different cooperation levels, whether governmental, organizational or combined, also national or international level. Most of the countries surrounding the Baltic Sea are in the European Union,

except Belarus and Russia, also Ukraine and Norway, when considering the catchment area. Therefore the EU regulations play significant part in the management of the sea. In this paper mostly the area of Gulf of Finland is discussed, as the countries under research are Estonia and Finland. St Petersburg is a city of almost 5 million people in population and is located on the Russian coast of the Gulf of Finland. The city poses significant impact on the gulf, but is not part of the EU. This highlights the complexity of the management of the sea and why it cannot be organized within EU. The different interests and priorities are the known characteristics for the Baltic Sea. The sea has agricultural, industrial and recreational areas in the surroundings making it complex to settle on common attitudes. Conflicting policies between the countries and interest groups are hindering the harmonized management.

Besides the varying governmental interests, also the civil society as such should be taken into account. The public has become more aware of their rights and ability to make a change (Kapaciauskaite, 2011). Especially in the concerns of environment people have a stake as it is often the quality of their living environment that might be affected. Local initiatives and multiple NGOs have emerged to stand for the beliefs and attitudes of civil society. The environmental governance systems need to be adapted to regard the rising awareness of the ecological state of the Baltic Sea by (Kapaciauskaite, 2011). Some adaptations have been made, one good example having the observers participating in HELCOM proceedings.

2.1.4 Baltic Sea institutions

There are a number of institutions that specialize on the management of the Baltic Sea. In this case the environmental protection and its most influential institutions in Estonia and Finland are considered.

From the European Union (EU) perspective the European Union Strategy for the Baltic Sea Region (EUSBSR) is the most significant institution for the management and protection of the Baltic Sea. It was the first pioneer for macro-regional strategy in Europe in 2009 (Bengtsson, 2009). The strategy involves Sweden, Denmark, Estonia, Finland, Germany, Latvia, Lithuania and Poland, also welcomes cooperation with the neighbouring countries of Russia, Iceland, Norway and Belarus. The aim is to promote and develop cooperation, in addition to bringing together initiatives in different sectors. Dubois et al (2009) highlight in their study that the variety of the area is widely recognized in the strategy. It is based on the interdependence of the countries and their common interests (Dubois et al, 2009). There are three objectives that stand for the main challenges: Saving the Sea, Connecting the Region and Increasing Prosperity. Even though the Strategy covers other aspects, the ecological condition of the Baltic Sea is one of the key topics (Bengtsson, 2009). The strategy also takes the EU policies into considerations and contributes to the application.

Baltic Marine Environment Protection Commission (HELCOM) can be considered as the essential part in Baltic Sea environmental management. The

Commission was the results of Helsinki Conventions in 1974 and 1992 where the Baltic Sea countries agreed upon the need to protect the marine environment (www.helcom.com, 2016). Subsequently the Commission entered into force in 2000 and by that time all the surrounding countries had joined. European Union is one of the contracting parties, meaning it is not coordinating the work, but participating. It is an inter-governmental organization where other institutions can participate as observers. The work is conducted by local specialists and researchers and coordinated by the HELCOM Secretariat. The international cooperation and open discussion are underlining the work. HELCOM aims to provide practical solutions and guidelines to improve and harmonize the protection of the Baltic Sea (www.helcom.com, 2016). The work of the organization involves governments, non-governmental organizations (NGOs), scientists and other interested parties, making it often accused of complexity.

Baltic Sea Action Group (BSAG) is a NGO since 2008 based in Helsinki, Finland. Its goal is to restore the ecological balance in the Baltic Sea and coordinate supporting activities by bringing different stakeholders together (www.bsag.fi, 2016). BSAG battles mostly with more specific problems on project-based work, for example nutrient cycling on farm level. The work includes Gulf of Finland activities, therefore the tight connection with both Estonian and Finnish interests.

John Nurminen Foundation was founded in 1992 by the initiative of John Nurminen Oy to safeguard the marine cultural heritage in Finland and in 2004 the Clean Baltic Sea Projects branch was created to add an environmental protection aspect (www.johnnurmisenosaatio.fi, 2016). Projects on improving the ecological condition of the sea are funded in support of the protection of the Baltic Sea, for example minimising eutrophication and reducing risk of oil spills in Gulf of Finland (www.johnnurmisenosaatio.fi, 2016). The projects are conducted by private donations and public fundings.

2.1.5 Estonia and Finland

In this research Estonia and Finland are under observation as one region for shared interests. Euroregions are geographical areas within Europe which share the same interests and can benefit from cooperation (Nauwelaers et al, 2013). For example countries that share borders have mutual interest in the regulations and border traffic, often the binding factor is economy. Euroregions were used as base example, but this research is not directly linked to the Helsinki-Tallinn euroregion because the newspapers that are used as a source are with national coverage, not just region-based. Tallinn-Helsinki euroregion is commonly known by comprising also the southern part of Finland and Northern parts of Estonia besides the two capitals (Nauwelaers et al, 2013). Research is often done on Estonia and Finland together, especially in the case of Baltic Sea, as the two share interest in the conditions of Gulf of Finland. For example throughout 3 years measurements were collected from along Tallinn-

Helsinki ferry route to investigate cyanobacterial bloom and its dependence on weather conditions (Kanoshina et al, 2003). Also the possibilities of building a tunnel under the gulf of Finland connecting two capitals has been discussed (Spiekermann and Wegerer, 2013). The countries of Estonia and Finland do not share only the gulf but also similar languages and long common history. There has been mutual understanding between the two nations throughout history and continuous development of Estonian economy in last 20 years is offering increasingly more opportunities for cooperation (Nauwelaers et al, 2013).

2.2 Three pillars of sustainability

The concept of sustainability came to prominence after the release of *Our Common Future* that is also known as Brundtland Report (1987). The report was outcome of UN World Commission on Environment and Development in 1987 (UN General Assembly, 2005). The commission had been researching the connections and dependencies between countries and their effects to sustainable development. It was noted that cooperation between countries often leads to more successful results in economy and environment-wise (WCED, 1987). The goal of sustainable management is to provide economical success and good living environment for present times and future generations. The underlining for achieving sustainable development was applying holistic approach, including the economical, environmental and social aspects for decision-making (WCED, 1987).

Considering the three dimensions of sustainability became widely accepted by the international community as ethical and in long-term beneficial approach (Scholz, 2011). Combining the aspirations of economical success, environmental protection and social well-being provide a thorough overview of the complexity of nowadays society and development's directions. Baumgartner (2011) has discussed the difficulty of applying sustainability approach because of its wide and contradictory scope. He noted the importance of rigor in sustainability research and need for integration with traditional disciplines (Baumgartner, 2011). Yet the criticism highlights the obstacles of matching the contradicting views of the pillars. It has been argued that finding the ways to benefit all three pillars would need too many compromises which might result in number of trade-offs and time-consuming processes (Schulz, 2011). Another troubling aspect is the variations of interests within a pillar. It cannot be expected that for example all the environmental issues have the same aspirations in a matter.

The three pillars of sustainability can also be seen in the sustainable management of the ecosystems such as Baltic Sea. Therefore the concept of the three pillars is applied in the content analysis of the newspaper articles to highlight the complexity of the case.

2.3 Stakeholder theory

Stakeholder theory started off as means for strategic management, but nowadays the scope of its application has widened. The approach is applied in various scenarios to gain better understanding of the involved people and institutions. The concept of having variety of stakeholders is recognized also in mass media where references to stakeholders are often made (Friedman and Miles, 2006).

Edward Freeman is considered to be the founder of stakeholder theory, based on his book *“Strategic Management: A Stakeholder Approach”* that was published in 1984. The organizational management had grown more complex as the times changed and companies grew larger and became international. There were more sides involved in the management of an organization, from governmental institutions to activist groups in society. The society had become more aware of its rights and interests, also of their power as a stakeholder. The management approach was modified by Freeman, as he introduced the stakeholder approach as sophisticated method (Friedman and Miles, 2006).

The central statement was that an organization should be managed in the interest of all involved people, not only shareholders. Freeman (1984) argued that understanding the stakeholders’ interests and behaviours better will contribute to the performance of the company. The classic definition states that a stakeholder is *“any group or individual who can affect or is affected by the achievement of the organizations’ objectives”* (Freeman, 1984; page 46).

The different interpretations and the theory’s development through two decades have affected its complexity and difficulties in understanding. Critics have claimed the stakeholder approach to be very wide and unlimited, as already the definition of a stakeholder has number of understandings. Different stakeholder definitions were listed in Friedman and Miles (2006) book on stakeholders’ theory and practice on pages 5-8 and below edited version by the author is presented (table 2). The variety of the concept can be seen as its strength and weakness at the same time. Firstly stakeholder was seen as a *“group without whose support the organization would cease to exist”* as stated by the Stanford Research Institute in 1963. Evan and Freeman (1988) highlighted that the organization can pose negative effect on someone, making it a stakeholder. Simply said by Miller and Lewis (1991, page 55) the *“stakeholders are people who can help or hurt the corporation”*. It was agreed upon that corporation and stakeholder can both have negative or positive effect on each other, so Frederick concluded in his paper (1998, page 361) that stakeholder is *“everyone in the community who has a stake in what the company does”*.

The stakeholder’s theory had reached unison that everybody can be affected by an organization, whether negatively or positively, making it a stakeholder. Starik (1994, page 92) took it a step further by stating that a stakeholder can be *“any naturally occurring entity which affects or is affected by*

organizational performance.” This approach could be translated differently as one may say that inanimate objects can be a stakeholder also. In 2003 Phillips released a discussion on the distinction between different stakeholders. He presented the two groups- normative and derivative stakeholders. First one representing the stakeholders for “*whose benefit should the firm be managed*” and second the stakeholders who have “*the potential to affect organization and its normative stakeholders*” (Phillips, 2003). Repeating narrative in the stakeholder definition throughout the years has also been the possession of claim. If one has a strong claim or is connected to the organization with noteworthy contract, it will be considered a stakeholder. Nowadays it is widely recognized that any type of entity can be a stakeholder if holds an interest or poses an impact. Therefore persons, institutions, and also natural environment can be considered as stakeholders (Mitchell et al, 1997). In this situation the future generation can be added to the listing, even though not existent at present. This approach is supported by the concept of sustainability which states that future generations have to be taken into account in decision-making.

Friedman and Miles (2006) elaborated on the theory by suggesting that organizations should be seen as groupings of various stakeholders. Therefore the ultimate goal for the organizations is to work for the interest of stakeholders. The needs and viewpoints of stakeholders should be guiding way for the organization’s management (Friedman and Miles, 2006). The stakeholder approach comprises uncovering the interested parties, but also categorizing and ranking those. For the organization’s perspective it is beneficial to rank the stakeholders to be able to focus on the most influential ones (Paloviita and Luoma-Aho, 2010).

Table 2. List of different stakeholder definitions and management recommendations according to time and based on Friedman and Miles’s table (2006).

Author and year	Stakeholder definition	Recommended approach
Stanford Research Institute, 1963	<i>Stakeholders are a group without whose support the organization would cease to exist</i>	
Edward Freeman, 1984	<i>Stakeholder is any group or individual who can affect or is affected by the achievement of the organizations’ objectives</i>	Organizations should be managed in the interest of all involved people
Evan and Freeman, 1988	<i>An organization can pose negative effect on someone and as a result making it a stakeholder</i>	
Miller and Lewis, 1991	<i>Stakeholders are people who can help or hurt the corporation</i>	
Starik, 1994	<i>Stakeholder can be any naturally occurring entity which affects or is affected by organizational performance</i>	
Mitchell et al, 1997	Persons, institutions and natural environment can all be considered a stakeholder	The MAW-model with relationship attributes of power, urgency and

		legitimacy was developed to get a better insight to the stakeholders and their attributes
Frederick, 1998	<i>Everyone in the community who has a stake in what the company does</i>	
Phillips, 2003	Normative stakeholder- <i>for whose benefits should the firm be managed</i> Derivative stakeholder- <i>has the potential to affect organization and its normative stakeholders</i>	
Friedman and Miles, 2006	The needs and viewpoints of stakeholders should be guiding way for the organization's management	Stakeholders should be seen as various groupings with needs and viewpoints and guiding the way for the organization's management
Paloviita adn Luoma-Aho, 2010		It is beneficial for organization to rank the stakeholders and focus on influential ones

2.3.1 Stakeholder analysis methods

To affect the environment of decision-making one should be able to grasp the political context where strategies for stakeholder management are developed. Stakeholder mapping is a useful tool in these situation for obtaining better understanding of the stakeholders interactions and claims. The *power grid*, *stakeholder influence diagram* and *MAW-model* methods can be used (O'Donovan, 2014).

The power grid is a tool to showcase the relevancy of a stakeholder. As seen on figure 2 on one axis there is *power* and on the other there is *interest* (O'Donovan, 2014). Four groups of stakeholders are created and the most significant one being *players* who hold both interest and power. *Subjects* hold interest but little power and *context setters* have gained power but do not have any major interests (Eden and Ackermann, 2013). The least powerful stakeholder group is *crowd* who indicate no interest nor power. Using this grid an organization can see which stakeholder has more power to aim for their interests. These results can contribute to creating stakeholder management plan as the most influential stakeholders are ranked (Paloviita and Luoma-Aho, 2010).

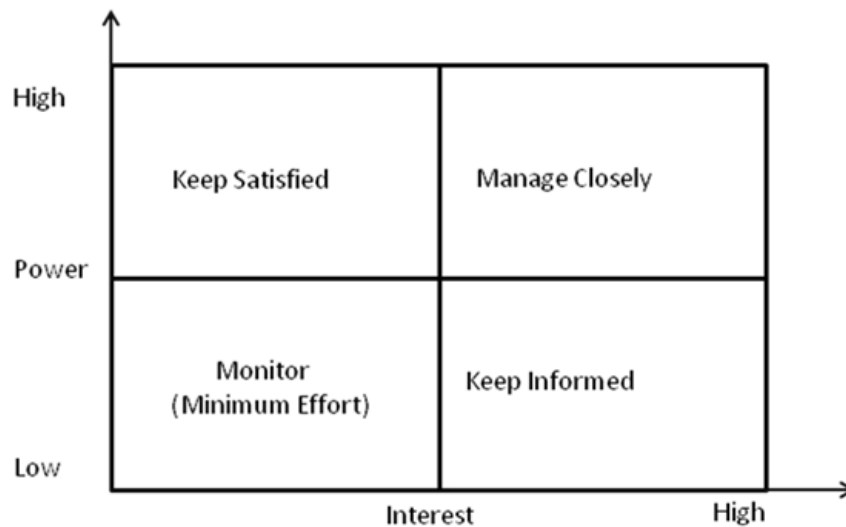


Figure 2 Stakeholder power grid.

The influence diagram can easily be drafted after analysing the power grid as the stakeholders are already known and the next step could be connecting the stakeholders according to relevancy (O'Donovan, 2014). Figure 3 presents the concept of the network between the stakeholders and how they impact each other. Different connections can be presented with varying lines, e.g. arrows and colours.

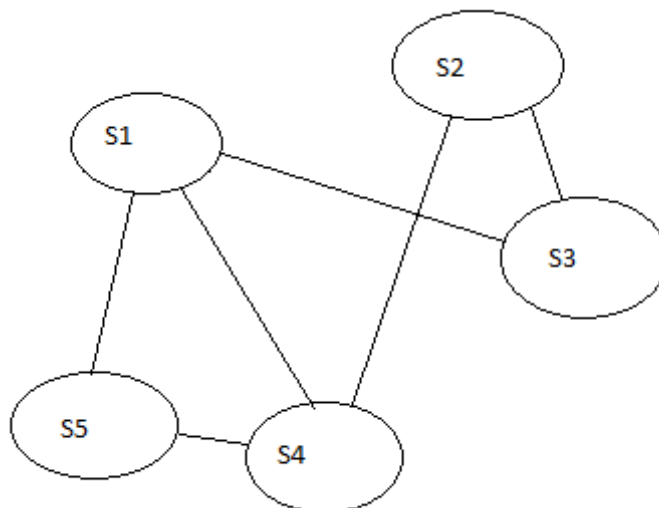


Figure 3. Stakeholder influence diagram.

The relationship attributes of power, urgency and legitimacy were developed by Mitchell et al (1997) to get a better insight to the stakeholders and their attributes. In this context *power* indicates the power one has to influence the organization. Mitchell et al (1997) argued that with power one is able to change things to own favour. The *legitimacy* presents the possession of rightfulness for change and *urgency* stands for being time-related or connected urgent matters.

The so-called MAW-model expresses the connections between the three relationship attributes, creating stakeholder groups according to their attributes (figure 4). Eight stakeholder groups are created by combining the overlappings of the three attributes for more distinguished stakeholder grouping and also non-stakeholders (Mitchell et al, 1997). Categorizing stakeholders with those attribute groups helps to explain their characteristics, significance and also the similarities and connections to other stakeholders. Group of stakeholders can have more than one attribute, therefore the variety of the groups. The significance of stakeholders is said to be higher if they have more than one attribute (Paloviita and Luoma-Aho, 2010). For example if a group of stakeholders possess both legitimacy and power, it can be considered significant stakeholder as it has means to make an impact. The stakeholders can change their attributes according to the current situation. For example one can gain power with raising support or becoming more significant in size. Especially legitimacy and power can be seen as variable attributes, prone to changes in the society (Mitchell et al, 1997).

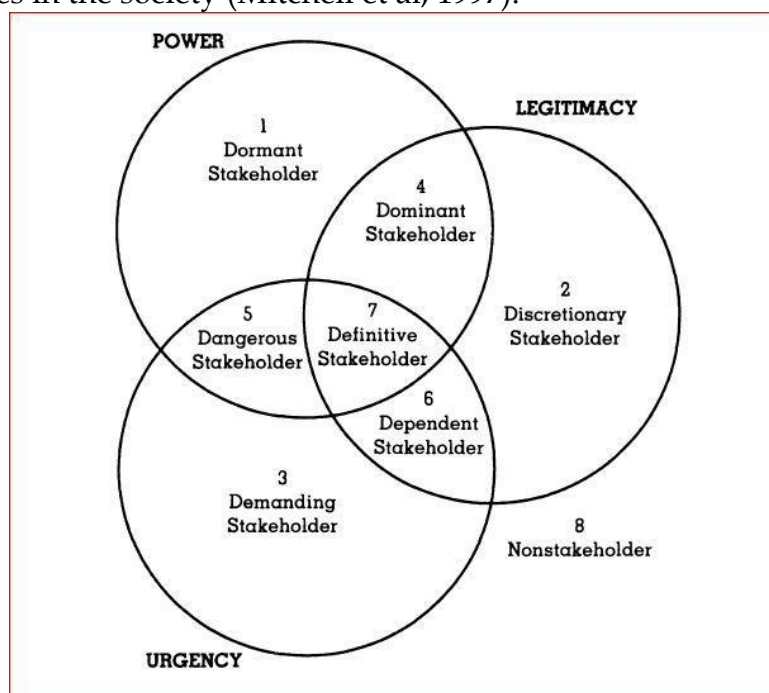


Figure 4. The MAW-model.

The stakeholders who possess all three attributes are called *definitive stakeholders*, as their importance is not deniable. The *expectant stakeholders* have two of the attributes and be divided into *dominant*, *dangerous* and *dependent*, as two attributes combined can create variety of significance. The *latent stakeholders* have only one out of the three and can be whether *dormant*, *discretionary* or *demanding*. The *non-stakeholders* are often taken into account as fourth group of potential stakeholders (Mitchell et al, 1997). In thorough stakeholder analysis all participants should be taken into account, whether they are potential or actual

stakeholders (Mitchell et al, 1997). Potential stakeholders may easily become latent stakeholders if they obtain one of the three attributes.

2.4 Previous research on Baltic Sea, stakeholders and media

So far there has been number of research conducted on the environmental situation of the Baltic Sea and its species. For example research on seals may give a good overview of the species but does not showcase the overall picture including economy and society interests.

Baltic Sea is vastly researched ecosystem in the sense of natural sciences. The pollution and biodiversity of the Baltic Sea have been the main two themes under observation. The raise in the nutrients level in the sea is causing eutrophication, algal blooms and distantly the creation of the dead zones in the bottom and inclined condition of the species (Kanoshina et al, 2003). Agricultural nutrient runoff, wastewater effluent and traffic on the sea are few of the causes of pollution (Ducrotoy and Elliott, 2008). Climate change has been having impact on the condition for the sea habitats and coastline.

The stakeholders of the Baltic Sea have been taken into account in a number of papers, but in that case mostly in more specialised manner, e. g. institutional stakeholders in Sweden (Lundberg, 2012). Media research involved the power of media, one example being the influence of media on environmental concerns in 1970's Finlan (Räsänen, 2009). In various papers it was agreed that media as a communication tool and opinion leader is significant and the opinions needed to be taken into account (Räsänen, 2009; O'Donovan, 2014).

2.4.1 Media and the Baltic Sea

Not much research can be found on media and Baltic Sea, though media is considered a powerful influence and tool to reach wide audience, as it knows no boundaries.

Mass media's role is often underestimated and underanalyzed. Media possesses wide audience and has the possibility for international coverage. It can provide a voice for the weakest and present their interests, but it must be kept in mind that the power which media holds can be supportive or threatening (Räsänen, 2009). It can contribute to one's interest or work against it, depending on which side media stands. Therefore media can be seen as independent stakeholder with marginal power who should be taken into account separately. The "*free press theory*" describes media as the "*fourth state*" describing its influence in the politics and its significance to democracy and it can also be seen as the "*voice of the people*" (Friedman and Miles, 2006).

Besides the governmental politics also the non-governmental actors play a significant role in the management of the Baltic Sea which was discussed in

the Kapaciauskaite's (2011) paper on non-governmental actors and it was concluded that the rising environmental awareness of the society has had an impact on the administration of the Baltic Sea and supported initiatives. The connection between public awareness and media is displayed through this notification. Media is prone to present dramatic perspectives and storylines, which often means public initiatives and NGOs (Räsänen, 2009).

An article "Engendering an Environmental Crisis: The Finnish Mass Media and the Baltic Sea Environment in the Early 1970s" by Tuomas Räsänen (2009) investigated the 1970's media contribution to environmental awareness in the society. Mass media has the power to create attitudes while presenting some story or knowledge. In the 1970's Finnish newspaper had a significant part in creating environmental concerns by portraying the Baltic Sea ecological condition and pollution (Räsänen, 2009). So far the environmental problems were of interest only to the scientific circle, but introducing those to the public had made remarkable difference and reaching wide audience easily is possible only through media sources. Also Piwowarczyk et al (2012) noted that popularized explanations of scientific discoveries and opinions should be incorporated to media discourses.

Often the newspapers' presentation on issues may be dramatic, but the way of presenting can make it more influential. "*Media possesses power in choosing which problems and which side of the particular problem may come into light*" (Lundberg, 2013; page 6). Nevertheless an impact will be made as politicians have to consider that if a topic is widely discussed in the media, it must have an agreeing voters community behind (Tuomas Räsänen, 2009). Therefore by constantly bringing up environmental concerns in the newspapers, the politicians had no other option than to assume public's support and take it into consideration (Räsänen, 2009).

The term "*mediatization*" stands for the role that media has on politics and also how and what side of the issue is presented (Mazzoleni and Schulz, 1999). Media is not in control of the politics, but is highly affecting and shaping the views and opinions. "*Mediatization*" is used to describe the tendencies among media's power on policies decision-making and its opportunities to affect. There have been concerns on political parties losing their link with the society whose interests they represent, as media has come between them (Mazzoleni and Schultz, 1999). Media-driven politics are not welcome as media cannot be considered to be accountable for their actions (Mazzoleni and Schultz, 1999).

2.4.2 Climate change and stakeholders of the Baltic Sea

The climate change is under continuous discussion as the impact on natural environment has been significant. Furthermore it is forecasted that water temperature could rise up to 2-4 degrees by 2010 and ice cover on the Baltic Sea can be reduced by 50-80% (Eisenack et al, 2008). According to Eisenack et al (2008) these changes will lead to decreased salinity, more algal blooms and

endangered species. The water temperature also affects plankton and zoobenthos which will cause reduce in fish stock and economical loss on the fisheries industry (Piwowarczyk et al, 2012). Algal blooms may occur more frequently and extensively, threatening the environment of the sea bottom.

The research on climate change in the Baltic Sea has been mostly done on the mitigation activities. From the stakeholders perspectives it was simpler to face the consequences after the occurrence and not in advance (Eisenack et al, 2008). Adaptation to new habits and change one's own behaviour seemed to be less favoured (Piwowarczyk et al, 2012). Adaptation is considered more complex and needs an effort from the lead figures. The advantage of mitigation is that it can be done on a smaller level and can solve instant needs which results can be seen immediately (Eisenack et al, 2007). The longer term goals to adapt to new solution to prevent the source of the problem may often seem intangible at the present moment.

Piwowarczyk et al (2012) questioned people on climate change issues and most of the respondents were policymakers. 75% of the respondents found that the importance of climate change would increase over time meaning they admit its future importance but avoid it as long as possible (Piwowarczyk et al, 2012). In conclusion it was noted that there is a gap between decision making, public concerns and scientific consensus which inhibits the influence of latest evidence on common opinions of the society (Piwowarczyk et al, 2012). It was suggested by Piwowarczyk et al (2012) that: "*popularized explanations of science should be incorporated into political, social, and media discourses*" to improve the knowledge, remove the gap between different sides and bridge the ideas together.

2.4.3 Baltic Sea stakeholders' perspective on eutrophication in the Baltic Sea

Stakeholder approach started from organization analysis, but it can be applied on various objects that are of interest to many (Friedman and Miles, 2006; O'Donovan, 2014). Cecilia Lundberg (2012) conducted a research on the perceptions of various stakeholders on the eutrophication level in the Baltic Sea. Scientists, authorities, national interest organizations and NGO representatives from the Northern parts of the Baltic Sea were interviewed for their opinions on the management methods and the gravity of the eutrophication in the sea.

The results of the interviews presented an opinion that eutrophication itself is not seen as a problem for the Baltic Sea in the future, but the risk assessment and management are found to be raising concerns (Lundberg, 2012). Eutrophication is well-known issue, but the uncertainties involving the management methods and their impact on the ecosystem are less certain (Lundberg, 2012). Therefore there is a common understanding on the necessity of applying Ecosystem Approach Management for the Baltic Sea region. Ecosystem Approach Management is socio-ecological and political framework that is suited for the certain geographical location (Lundberg, 2013). Balanced

management of the ecosystem should involve natural processes, policies and public opinions in decision-making (Lundberg, 2012). Also Linke et al (2013) highlighted that Baltic Sea drainage area is highly populated region and controlling the pollution is confined. The diverse political arena can have varying attitudes towards managing the nutrient pollution leading to eutrophication (Linke et al, 2013).

Therefore the key to improving the ecological condition of the sea lies in holistic approach and harmonized management, according to the respondents (Lundberg, 2012). Baltic Sea area has all the odds to become the role model for regional cooperation in EU by combining the aspects of economy, environment and society (Lundberg, 2012). This paper was a good example of the complexity of the Baltic Sea interest groups where one issue was in question and different stakeholders were considered.

2.4.4 St Petersburg wastewater treatment plant

St Petersburg has been known to be the pollution hotspot for the Gulf of Finland, as a result of large population, high water consumption and incompliance with the EU regulations (Kiirikki et al, 2003). St Petersburg has history of high water consumption and largest population around the Baltic Sea, being nowadays over 5 million (Kiirikki et al, 2003). During the soviet era water was free of charge, meaning people's consumption habits were not restrained as there was no financial loss. The consumption rate has been decreasing throughout the years starting from 550 l/capita/day in the early 1990's to (Kiirikki et al, 2003). In comparison Danish present average water consumption is 210/capita/day and it has been internationally considered as sustainable volume (UNDP, 2014).

These large quantities of wastewater need proper treatment to avoid polluting the Baltic Sea with high nutrient levels. Still in 1978 the municipal wastewater was all discharged directly to the River Neva and no wastewater treatment was conducted (Ritvala and Salmi, 2012). By early 1990's wastewater treatment was applied for about 67% of all discharge, but not sufficiently enough (www.pöyry.com, 2015). Because of Russia's different regulations, wastewater management practices and small financial support, other countries surrounding the Baltic Sea have become involved in St Petersburg's wastewater treatment. Especially Finland has invested remarkably with knowledge, experience and financial resources. The improvements of wastewater treatment in St. Petersburg began in 2003 when the reconstruction of Southwest wastewater treatment plant (WWTP) took off in cooperation with organizations and countries around the Baltic Sea (Kiirikki et al, 2003). One of the main partners was Finland who invested 4.8 mln euros that was allocated for the sewage tunnel construction (Ritvala and Salmi, 2012). As a result of years of cooperation and international investments, nowadays 98.4 % of the St. Petersburg municipal wastewater is being treated (www.vodokanal.spb.ru, 2016).

John Nurminen Foundation (JNF) from Finland and the wastewater treatment company Vodokanal of St Petersburg joined their forces for a 5-year project to improve the removal of phosphorus from the St. Petersburg WWTPs by the chemical phosphorus removal (Ritvala and Salmi, 2012). Finnish Environment Institute (SYKE) provided assessment for JNF and the Clean Baltic Sea eutrophication project begun in 2005 (Ritvala and Salmi, 2012). The successful project resulted in reduced annual phosphorus load from the three largest WWTPs of Vodokanal. At present the phosphorus content in discharged effluent remains below 0.5 mg/l which is in accordance with the recommendations set by HELCOM (HELCOM, 2015; www.vodokanal.spb.ru, 2015). Meaning St. Petersburg's share of the total phosphorus load has decreased agreeably from 40% to 15% (www.pöyry.com, 2015).

In the case of St. Petersburg wastewater treatment international stakeholders became voluntarily involved because of their interest in the ecological state of the sea. Sea is one unit and even though the pollution is originating from other country it still has an impact on neighbouring ones as pollution is not limited by borders. The St. Petersburg case presents well an holistic approach of environmental management and the necessity of cooperation. As a result the wastewater discharge quality has improved in Russia, as the same wastewater treatment methods were applied in other plants over the country (John Nurminen Foundation, 2011).

3 METHODOLOGY

3.1 Case selection

The combined interests of economy, society and environment prove Baltic Sea to be relevant case and good example for the research on corporate environmental management. The case selection was based on author's personal knowledge and interest in the certain area and topic. Baltic Sea is an ecosystem and geographical region which connects nine countries who see it as means of transportation, stock of resources and recreational spot (Czajkowski et al, 2014). The varying interests of stakeholders make it an interesting case. There has been no research conducted on media's perspective over the Baltic Sea, creating a need for the research to present the public opinion and understanding of Baltic Sea issues.

This study concentrates on two aspects while analyzing the articles- the topics and stakeholders. The categorising of the topics is based on three pillars of sustainability concept (economy, society, environment). This approach was determined as those three pillars represent perfectly the complexity of Baltic Sea as a common good. Sustainability itself is not the most prominent concept in this case but it is base value of managing a common good. Stakeholder analysis is conducted for understanding the interest groups.

In this paper Estonia and Finland are two countries under observation to limit the scope. The area of the Baltic Sea was not limited to Gulf of Finland (as the main interest for Estonia and Finland), but was taken into account as a unity. Yet the data was collected from the two abovementioned countries.

3.2 Research design

In this study newspaper articles were chosen for data source as the interest of this paper lies in the perception of Baltic Sea issues by local people who in this case are readers of Estonian and Finnish daily newspapers. Qualitative research is used for the content analysis as the data source are newspaper articles. According to Oxford Dictionary (2016) qualitative research stands for "*methods of investigating phenomena which do not involve the collection and analysis of numerical data*". Qualitative research is often used in social sciences where the data is not numerical, for example attitudes and well-being. In this study the articles are processed and perceived by the audience by interpreting the texts or other sources (Silverman, 2010). The content analysis in this case is conducted as summative content analysis that involves counting and comparisons on the content (Silverman, 2010). This analysis is performed on the texts in software

program and the qualitative data in this case are newspapers' articles. The articles are secondary data as these articles have been written by other authors and usually report events that have taken place or people's opinions. Oxford Dictionary (2016) explains secondary data as "*a book or other source of information where the writer has taken the information from some other source and not collected it himself or herself*". Using media as a data source needs thorough analysis of the content of the articles and generalizations. In this case textual analysis and text mining software are used to analyze the qualitative data. The textual analysis stands for having texts as data source (Silverman, 2010). Thematic analysis is conducted on texts meaning the content is analyzed based on themes using special software.

QDA Miner 4 Lite is text mining software which means that one can insert text to the program and proceed in working with the text on various scales (Provalis Research, 2004). It is a useful software for textual analysis as it is possible to group, characterize and sort the text data. The core element of this software is a project which is cluster of documents that are called cases. Coding can be used to analyze the cases further, by identifying segments and labelling those with a specific code that is equalling for one theme. The codes are connected and organized by applying thematic network. It provides a structure for themes according to their connections and level- global, organizing or basic theme (Silverman, 2010). As a result of these actions it is possible to analyze qualitative data quantitatively and derive conclusions based on the data. Analyze or filter tools in QDA Miner can be used to further process the data by grouping cases and create illustrative materials. In the following chapters the tools and their applications for the research are explained more thoroughly.

The free edition of the software was used for this project, so only the included analysis tools were used and not the advanced edition. This software was chosen by the author after consideration of people's recommendations and experiences discussed in online forums. QDA Miner 4 Lite was mentioned as the most reliable and easy-to-use free software for text analysis.

The most laborious part of the research was searching for the articles and reading the articles. Afterwards the results and notes were compared and analyzed with the text mining program QDA Miner 4 Lite. Adding data to the software program was also time-consuming, but once done the data analysis was easy to conduct owing to the organized data.

3.3 Data collection

The data was collected by online search on newspapers' web pages and random selection on paper to see if there are any differences. No variations were found in the content while comparing ten articles on paper to the ones on web page. Advanced search was conducted on the web pages by using selected keywords. Only the articles published during year 2014 were considered. The year 2014

was also announced as the Year of Gulf of Finland when attention was paid to support research, co-operation and promote sustainable use of the sea (SYKE, 2015). This contributed to choosing the timespan for research. Estonian and Finnish newspapers were investigated and similar newspapers were chosen. Iltalehti (FIN) and Õhtuleht (EST) both represent tabloid journalism where the sensational topics are emphasized and made interesting for the reader. Helsingin Sanomat (FIN) and Postimees (EST) are widely read newspapers that cover variety of issues but avoiding tabloid topics. Helsingin Sanomat is said to be with liberal views and Postimees has been accused of being politically biased towards Estonian liberal party. The two newspapers from one country have contrasting style and are owned by different media groups, therefore should present more varied opinions as a result.

Table 3. Newspapers' editions average circulation in 2014. Based on data from Estonian Newspaper Association (2015) and Media Audit Finland (2015).

Newspaper	Newspapers circulation (average, 2014)
Helsingin Sanomat	331 551
Iltalehti	73 525
Postimees	49 600
Õhtuleht	49 400

All the newspapers are published nationally, not connected to any specific region of the country. The amount of publishing is varying (table 3) from country to newspaper, but these are most read newspapers in both countries. The numbers present the amount of printed newspapers and do not take into consideration the webpage visits.

The selection of keywords was based on author's judgement and three most spread cases of the keywords were used if necessary. The keywords were chosen by being connected to the Baltic Sea only, meaning geographical area, location and language of the country. The phenomena e.g. eutrophication and cyanobacteria, and certain events or larger corporations, e.g. Tallink ferry company, were not taken into consideration for search keywords. It was decided to conduct opened search, meaning no specific problems or issues were looked for as the keywords suppose to represent Baltic Sea from objective perspective. The keywords were chosen simple and straightforward to narrow the selection of the results. The reason to include HELCOM separately was its significance towards international management and co-operation of the Baltic Sea countries.

Keywords:

1. Läänemeri/Itämeri/Baltic Sea
2. Soome laht/Suomernlahti/Gulf of Finland
3. HELCOM, Helsinki Commission
4. "Baltic Sea" in English

In the beginning of the data collection the list of keywords was longer, but throughout the search it was noted that some keywords can be grouped together and that some keywords proved to be insignificant and not provide results. For example Baltic Sea Action Group did not give any results in Estonian newspapers whereas in Finnish ones it equalled to results given by searching just “Baltic Sea” English keyword. Also all the keywords of HELCOM, Helsinki Commission, Helsinki Convention were grouped together because of not receiving many results. For example Helsinki Convention was mentioned only in one article in *Õhtuleht* and HELCOM once in *Postimees*.

The search for articles about Baltic Sea in 2014 resulted in 126 articles from which number of those were repeating or irrelevant. Altogether 104 articles were chosen to be used as base data for this research (table 4, appendix 1). These articles were found from four different newspapers. As mentioned above, the selection of the articles was limited with keywords.

Table 4. Number of articles found from newspapers.

Newspaper	Articles found
Helsingin Sanomat	45
Iltalehti	14
Postimees	26
Õhtuleht	18

3.4 Data analysis in QDA Miner 4 Lite text analysis software

The data analysis is conducted in the software QDA Miner 4 Lite. The tools and characteristics of the software are described below.

3.4.1 Cases

In the QDA Miner 4 Lite software, articles are added as separate cases. Case is a base component of a project. The articles were copy-pasted to the created case pages which all became part of the bigger project. Following step was attaching all the metadata to cases which is described below. For this research only one project was used and all the data analysis was conducted within it.

3.4.2 Variables

Variables indicate characteristics of the case, but also connect the similarities between cases and help to group those together. Most of all variables provide the possibility to sort the articles by its origin. While inserting the articles to the text mining software the variables of *country*, *newspaper* and *month of publishing* were added (figure 5). *Country* was the most obvious variable as it is able to show the different interests of Estonia and Finland. *Newspaper* indicates

whether some topics are more often discussed in tabloid journalism or mainstream newspapers type, regardless of the country. *Month* can highlight what topics are discussed in certain time of the year, for example algal blooms relevant only in the summer.

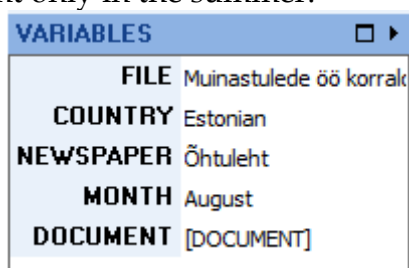


Figure 5. Screenshot of the variables box which is attached to every case (article) in the QDA Miner software.

3.4.3 Coding

Then the coding was used to attach the themes which are described below as sub-topics of the three main topic categories to the paragraphs of the articles. Also the keyword(s) of finding the article and stakeholders were added by coding. The keywords were attached to the headlines of the article, to separate those from the text analysis part.

Coding enables to choose part of the text in the case (article) and attach a value to it. In this situation the value is one theme or stakeholder. The thematic keywords were attached to articles, not paragraphs, therefore every theme is presented only once in the QDA Miner software. The themes are attached to first or most relevant paragraph. Though the topics can be showcased more than once and also all three of them can be present at the same time in the article. As a result article could cover themes from all three main topics highlighting the overlappings of different interests. Same approach applies to stakeholders, as the coding is added to the most-significant paragraphs and once only.

Different coding groups had own colours- search keywords (black), stakeholders (blue), economy topics (yellow), environment (green) and society (red) (figure 6). Coding is visible on the right-side of the article window. Also by clicking on the coding it highlights part of the texts which applies to the code.

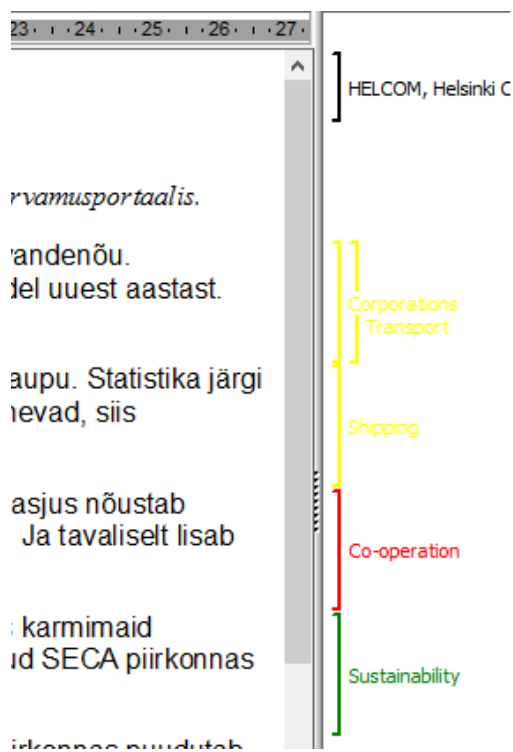


Figure 6 Screenshot of the right-side of the case window where coding is visible.

3.4.4 Analysis

When all data had been inserted to the project in the software, the analysis tools could be used to make comparing spreadsheets, lists and graphs. For example to see how many times one theme was discussed or to see which newspaper had the most articles about Baltic Sea. Tendencies and correlations between different themes, countries and newspapers arose.

Highly used tool for this analysis was simple *filtering* of the cases. The filtered results were shown in the cases window where usually a full list was present. There are variations of filtering options and it is possible to choose more than one limiting factor. For example one could filter all the Finnish articles published in May or view only Postimees and Helsingin Sanomat articles and look for similarities (figure 7). This tool was useful to get the numbers of certain selection as the results were presented in the number of articles found out of total.

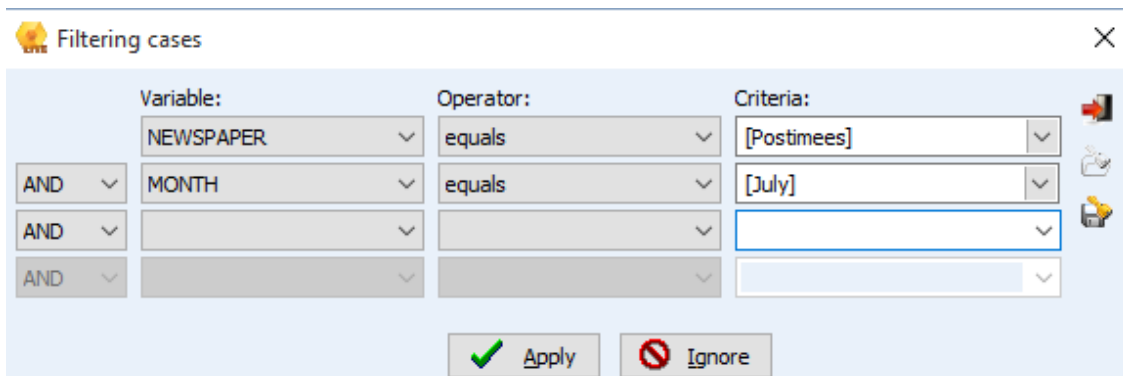


Figure 7 Filtering cases tool. For example to find out the total number of articles found from Postimees the filtering was set to *newspaper variable equals Postimees*.

Variables spreadsheet displayed name of the case, country, newspaper and month of publishing in one table. This list of articles was copied to separate excel file to get full list of the 104 articles presented as cases in the project. It was useful because sometimes it proved to be simpler to create graphs in excel and not within the software.

Coding retrieval tool was used to sort articles according to coding (figure 8). Also a column of indicated variables was attached to the retrieval table if wanted. Owing to this tool one is able to find articles that comply with multiple coding requirements. It contributes to visualizing the results on combined coding.

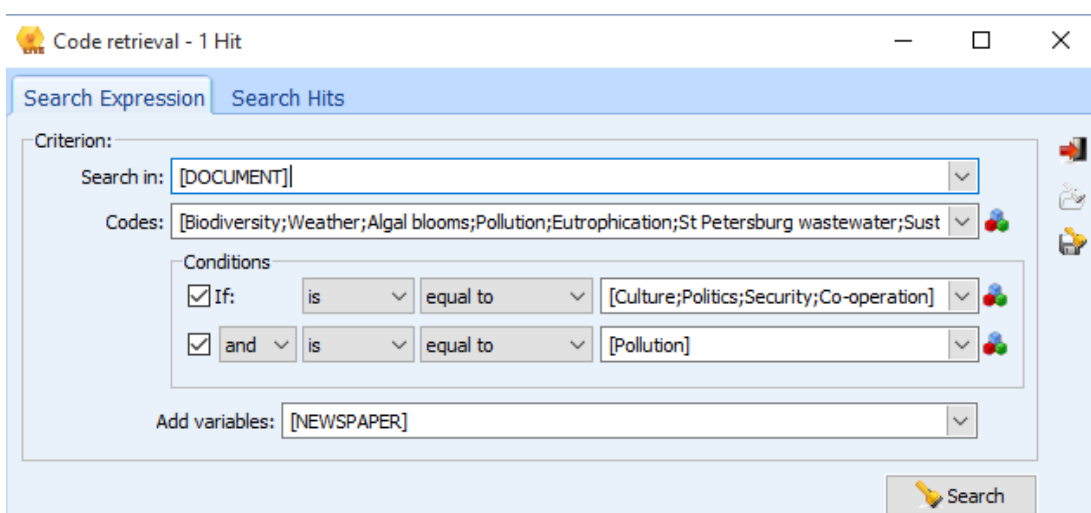


Figure 8 Code retrieval tool and its application.

Coding frequency tool was applied to see which coding was used most often. From the retrieved list it was possible to create graphs. It was possible to choose whole category, or as many themes as wanted and also themes from different categories (figure 9). Also in this case the list of results was copied to MS Office Excel table where it proved to be easier to analyze the results and create graphs.

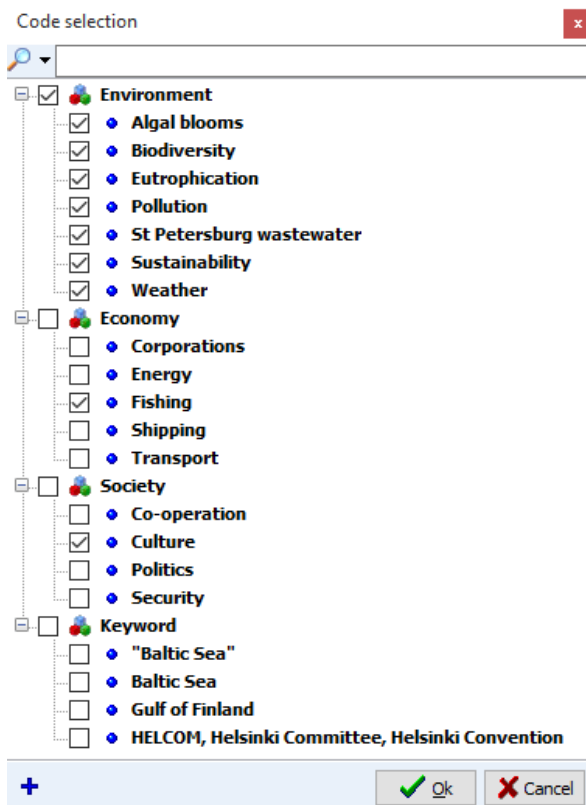


Figure 9 Coding frequency's selection tool. The same list is visible in the left-side bar while cases are opened (see appendix 2).

3.5 Stakeholder mapping

Stakeholder mapping models were used to organize and analyze the listed stakeholders of the Baltic Sea as recognized in the newspapers' articles. First the list was divided according to MAW-model, depending on the power, legitimacy and urgency (Mitchell et al, 1997). As introduced in the literature review chapter there are seven groups of stakeholders in this model. The three attributes of each stakeholder were considered while assigning to relevant groups.

The stakeholders' influence diagram was used next to present the interactions and connections between the stakeholders. In this model all the connections between 22 stakeholders had to be drawn. Creating this model proved to be rather difficult task as to make the interacting network simple and visually pleasant.

After sketching both models on paper, the diagrams were created in MS Office.

4 RESULTS

4.1 Newspaper webpage results

Estonian media was represented by newspapers Postimees and Õhtuleht, from where the number of articles found was respectively 26 and 18. Finnish newspapers Helsingin Sanomat and Iltalehti provided 45 and 14 articles respectively.

There are two different results presented in the table 5 below. Above are the overall results from webpage search and below are the results after dismissing the incompatible articles. The relevancy of the articles to this research was decided by the author, based on the content of the articles and scope of the research. In the beginning of the research the scope was in overall sense known, so it was obvious that for example article of *100 Estonian companies with highest turnover* could be dismissed as it will not benefit the research (connected only to Estonian economy). After removing some articles due to minimal relevancy or reoccurrence (republished edited version of article) 104 articles were left for base data. Some of the articles were found with different keywords, but the article was added one time only to the list of 104 articles. The overlappings of different keywords in one article are not considered, only the keyword occurrences are presented in table 5.

Table 5. In this table the difference in before and after elimination of irrelevant articles is presented.

Keywords		Baltic Sea	HELCOM	"Baltic sea"	Gulf of Finland
In original language		<i>Itämeri (FIN), Läänemeri (EST)</i>	<i>Helsingi Konventsioon (EST), Helsingin komissio (FIN)</i>	<i>Baltic Sea (ENG)</i>	<i>Suomenlahti (FIN), Soome laht (EST)</i>
Helsingin Sanomat	Webpage	38	13	2	7
	After	39	13	2	9
Iltalehti	Webpage	15	0	0	5
	After	12	0	0	5
Postimees	Webpage	21	1	3	4
	After	19	3	2	4
Õhtuleht	Webpage	14	1	0	2
	After	15	2	0	2

It can be noted that the difference was not over three articles. The differences in the articles numbers are caused mostly by:

- noticing other keywords in the articles though webpage search did not provide it
- judging the article to not be relevant for this research

As reading the articles more thoroughly it was in some case applicable to add more keywords to the article, depending on the content. For unknown reasons the simple search on newspapers' webpages did not give complete results as on few occasions the author noticed that the search did not find all the keywords from the articles that it could have.

4.2 Organizing the articles' data

After reading the articles thematic analysis was conducted and followed by categorizing the topics based on the concept of three pillars of sustainability. Further on the themes of each topic were also determined to achieve more detailed analysis of the articles' content. Also stakeholders mentioned in the articles were listed and grouped. It was necessary pre-work for conducting the analysis in QDA Miner software. In the following chapter the basis and results on the thematic analysis are explained.

4.2.1 Topics and themes

Based on the content of the articles, they were appointed to groups for analyzing the vast data. There were three main topics which were divided into sub-topics (figure 10). Topics in this case serve as one of the three- *economy, society, environment*, whereas theme applies for more detailed sub-topic, e.g. biodiversity and transport. As mentioned above this choice of categories was inspired by the sustainability concept which fits the scope of this research.

In the beginning of the research also other categories were considered, before narrowing down to three. Security and transport were considered as categories but were dismissed as proved to be suitable to be part of economy, environment or society. Instead these categories were settled as themes in the data analysis. The themes were divided under suitable topic category which proved to be rather easy as they seemed to fit one topic at the time. For example *energy* suited best for *economy*, not *environment* or *society*. The themes were based on the keywords which were noted to repeat when reading the articles and were further categorized under three above-mentioned topic categories. Some chosen themes are quite outstanding whereas others are similar. Some themes were left out whereas others emerged during the ongoing research process and were too late to be included.

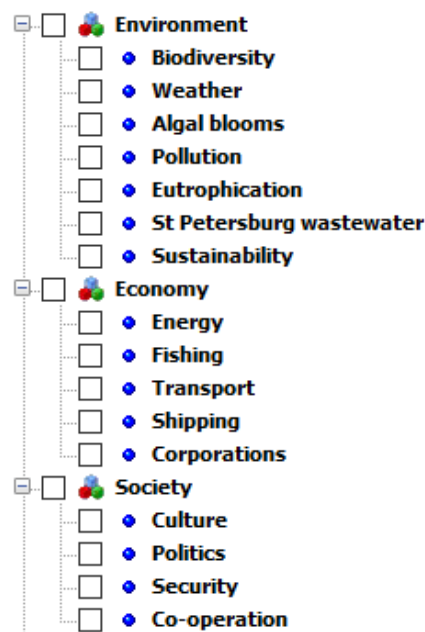


Figure 10 List of topics and themes as categorized in the software.

4.2.1.1 Environment themes

Articles discussing *biodiversity* express the situation of different Baltic Sea species and their condition. Especially habitat changes, dead zones creation and the decreases in communities, such as grey seals.

Weather is mostly about the current weather conditions, storm alerts and degrees. Majority of articles were covering the connection of warm weather and algal blooms.

Algal bloom and *eutrophication* were counted separately as they do not equal the same. They do have similarities as both are affecting the water quality, but one is natural occurrence whereas the other is surplus of nutrients. In the Gulf of Finland algal blooms are typical in the summer time and local people are aware of the impediments it imposes. Eutrophication is caused by variety of reasons, mostly agriculture (Lundberg, 2013). Eutrophication was not counted as *pollution* either due to its connection to nutrients only.

St Petersburg wastewater was taken into account separately as especially in the Finnish media it had a lot of attention. Articles covered city of St Petersburg wastewater pollution to Baltic Sea and its wastewater treatment plants' development projects. As a result it was secluded from *pollution* to be able to present its significance.

Sustainability covers all topics discussing or introducing sustainable and environmental-friendly approaches around the sea and on the sea. For example environmental management systems on the ships or ports and limitations on fuel content and consumption of ships.

4.2.1.2 Economy themes

Energy was discussed in articles as only part of GAZPROM project that is connecting natural gas market from Russia to Europe. The topic is relevant as the pipeline would be going through Baltic Sea.

Fishing topics cover the conditions of fish communities and regulations on fishing.

Also *shipping* and *transport* are rather similar, but displayed individually in the hope of presenting the importance of shipping the goods on this transit route and transportation for people (leisure, work) separately.

Corporations present the large corporations as stakeholders of the Baltic Sea and their interest in it. Local corporations such as Tallink Silja Line, Viking Line, Port of Tallinn and Fosfory are mentioned.

4.2.1.3 Society themes

Culture discusses Baltic Sea as significant cultural value for the society. Here the Gulf of Finland Year was mentioned, together with the Evening of Ancient Lights and recreational values of the sea. *Recreation* was considered first as separate theme but it was not as significant as expected and became part of *culture*.

Security issues and environmental protection policies are most discussed *politics* topics. Politics of reaching consensus and achieving unity in applying management on an international level are characteristic for Baltic Sea politics.

Security proved to be surprisingly popular topics in the newspapers, covering mostly relations with Russia, including the crossing of borders by Russian air force. NATO, political threat from Russia and sea rescue were the keywords for security issues.

Co-operation was one of the most discussed themes as co-operation as such can be seen in variety of activities and issues. For example military co-operation exercises, work of BPO and applying HELCOM recommendations for protection of the Baltic Sea environment.

4.2.2 Stakeholders

Listing the stakeholders was conducted during the second reading of the newspaper articles. Then the focus was on only finding the stakeholders as mentioned in the articles and no attention was paid on the topics or content. This sequence was decided as for provide better quality of the results. It would have been more efficient to simultaneously look at all aspects of the article but it proved to be overwhelming task.

During the second reading of the articles a list of stakeholders was created. Only the directly mentioned and connected stakeholders were considered for this analysis. There could be other stakeholders involved with the topics but unless they were discussed in the articles they were excluded.

Next the stakeholders were grouped and some less significant ones were excluded if covered by other stakeholder subgroup (table 6). For example regional company that was mentioned only once was grouped under *energy companies* to simplify the list and keep it clear. The groups were based on noteworthy references to the difference between people and institutions.

Table 6. List of stakeholders divided into three categories.

PEOPLE	INSTITUTIONS	OTHER
Locals	European Union	Baltic Sea countries
Politicians	Government environmental institutions	Media
Recreational users	International organizations	Natural environment
Specialists	Cities	
Travellers	Security organizations	
Workers	Wastewater treatment plants	
Environmentalists	Rescue	
Farmers	Transport and shipping companies	
	Energy companies	
	Fisheries	
	Ports	

4.2.2.1 People

Stakeholders distributed to *people* subgroup were individual people who hold somewhat personal interest to the sea.

Environmentalists represent both individual environmentalist but also environmental NGOs and associations as these are rooted from the initiative of the people and have no connections to governments.

Similar approach applies for *farmers*. In this case the size of the farm is not considered and the subgroup applies for farming activities.

Locals represent the people who are exposed to variety of issues just because they are living in the affected area. These people might not be specialists nor have hobbies related to the sea. For example algal blooms and ferry routes can heavily affect the everyday life of people living on the coast.

Politicians stand for people who are interested in the management of the sea and are involved with the policies. These people stand out in the articles as separate from institutions and having personal interests and values about the matters of the Baltic Sea.

Recreational users is a very wide subgroup as besides direct use values it also comprises non-use values such as existence and intrinsic values. The sea can be important for people whether it holds cultural values, is just a picturesque view, source of inspiration or means for hobbies, e. g. fishing, sailing, waterskiing. One does not have to be local to be interested in the certain services the ecosystem provides.

Specialists covers also scientists and researchers. Mostly applies for people whose expertise is valuable for a case.

Travellers were counted separately because the sea is often seen as means of transport and it seemed relevant to make a notion of it. *Travellers* could be recreational, transit or work-related people.

One of the widest subgroups was *workers* which includes fishermen, sailors, divers or whatever jobs connected to the sea. The subgroup implies to the significance of the sea as a provider of jobs.

4.2.2.2 Institutions

Institutions indicate any institution, organization or company. Industry companies were presented as grouped together thematically because these were the only presented companies with easily separable interests.

Cities stand for mainly Helsinki, St. Petersburg and Tallinn. In the articles these are considered as city governments and representing the economical, environmental and social concerns posed on Baltic Sea and its effect on city population and management.

European Union (EU) and all its allocations and divisions are united for this subgroup. For example EU Strategy for the Baltic Sea Region (EUSBSR) was mentioned in the articles, stating the EU and member states to be stakeholders.

Governmental environment institutions represent for example SYKE from Finland and Keskkonnaamet from Estonia, basically all environmental institutions that are under the governments' administration. These are included to one subgroup as they often stand for different interests and approaches than non-governmental organizations.

International organizations indicate the interest of international interest in the Baltic Sea. The North Atlantic Treaty Organization (NATO), International Maritime Organization (IMO) and Baltic Ports Organization (BPO) are few examples of the international organizations as stakeholders in the Baltic Sea region.

Security organizations mostly stands for border patrol and defence ministries. During the year 2014 security was often discussed in the media, therefore it is considered here separately and not just part of governmental concerns. International security organizations and military cooperation is partly overlapping with *international organizations* subgroup.

Wastewater treatment plants covers the plants from all Baltic Sea countries. Wastewater management can have significant impact on the pollution and environmental condition of the sea.

Rescue is often mentioned in the articles about Baltic Sea, as cooperation in rescue is constantly under inspection and in development. Rescue comprises both environmental and human crisis situations and rescue groups.

Transport and shipping companies are considered apart from travellers subgroup. Whereas *travellers* mostly stand for people's interest in transport opportunities on the sea, *transport and shipping companies* aims to highlight the corporate and financial interests.

Energy companies are companies with energy-related interests, including electricity, natural gas, oil shale, oil etc and their transport. Hydroenergy and windparks (coastal, offshore) are also counted as energy interests in the Baltic Sea.

Fisheries imply to all sort of fishing practices in the sea and also fish farms near the coast. All fisheries hold a significant stake in the sea, its ecological condition and the rules applying to fishing. Recreational fishing is connected to both fisheries and recreational activities.

Individual subgroup of stakeholders is also *ports* who possess a stake in all the companies and industries of the Baltic Sea as they are directly affected by their activities.

4.2.2.3 Other

Other indicates that it could be both people and institutions or something that does not comply with any of those.

Baltic Sea countries represents mostly the politics and interests of the governments. This very wide range of interest is not limited only to governments, but for the overall political aspirations.

Newspapers, newschannels, radio and independent journalists are all considered as subgroup of *media*. The core of this group stands in providing information and knowledge of topics concerning the Baltic Sea to the public. Media is not one institution nor individual person, nor a group of those, therefore it is assessed as *other*. It can also provide a voice for certain group of stakeholders making it rather substantial stakeholder cause of its power. Reference to other media source in the newspaper articles was also considered in the text analysis as stakeholder.

Natural environment is the ecosystem of the Baltic Sea and its coastal areas. It is in the interest of clean and sustainable environment of the Baltic Sea region to have well-organized management of the sea.

4.3 Articles' content results

In this chapter the results from the QDA Miner software analysis on the content of the articles are presented.

4.3.1 Countries and newspapers

The number of articles found in newspapers was mentioned above, but also the differences between countries can be considered. Out of 104 articles the larger bit of 60 articles was found in Finnish media compared to Estonia's 44 articles (figure 11). Yet it has to be admitted that the difference cannot be seen as too significant, ranging closer to 50-50.



Figure 11. The visual representation of the results according to countries. The bulk is 104 articles and 60 of those are from Finnish media and 44 from Estonian.

Only 16% was the difference between the countries which can be said was as predicted. Finland has a longer history of environmental management and protection and it could be expected that also the Baltic Sea is more often mentioned in the media than in Estonia (Nauwelaers et al, 2013). Yet Estonia's environmental concerns have increased quite rapidly in the last two decades.

It can be stated that the tabloid journalism mentions Baltic Sea on fewer occasions in their articles, referring to tables 4 and 5 where the article numbers of every newspaper are presented. The tabloid newspapers had quite the same number of articles, *Õhtuleht* having 18 and *Iltalehti* 14 (figure 12). It was expected that the difference between types of journalism could be about 50 % but compared to *Helsingin Sanomat* it is rather remarkable. *Helsingin Sanomat* and *Postimees* represent the same readership but articles on the Baltic Sea are 45 to 26 respectively (figure 12). It can only be speculated why there is such a significant difference between these two newspapers. It was noted that the variety of articles content and style varied in *Helsingin Sanomat* the most. For example also columns on seaside memories were published. Being the newspaper which discusses Baltic Sea most, *Helsingin Sanomat* was often quoted by other newspapers both Finnish and Estonian.

The ratio of newspaper articles

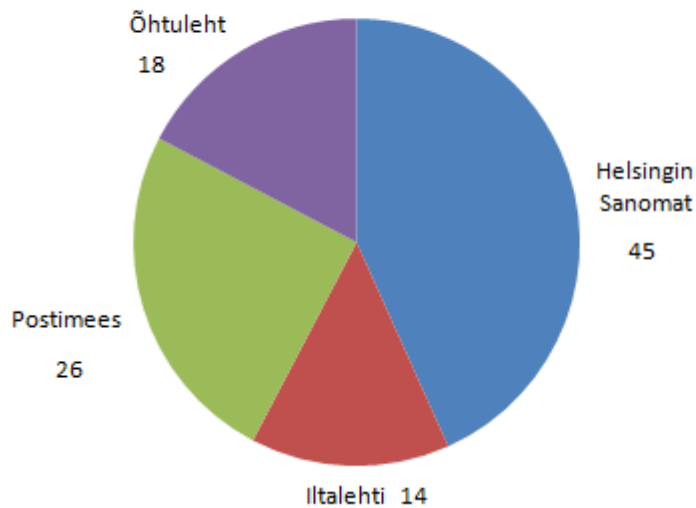


Figure 12. Articles per newspapers.

4.3.2 Topics discussed in articles

From the articles' content analysis it can be seen that Baltic Sea is most often discussed from the environmental perspective. As described before the themes in the articles are categorized under three topics and as it can be seen in figure 13 almost half of the cases were under environmental topic. Altogether the themes' keywords were used in the software for 293 times. Meaning environmental perspective cases accounted for 49,5%, society-concerned ones 31% and economical cases 19,5%.

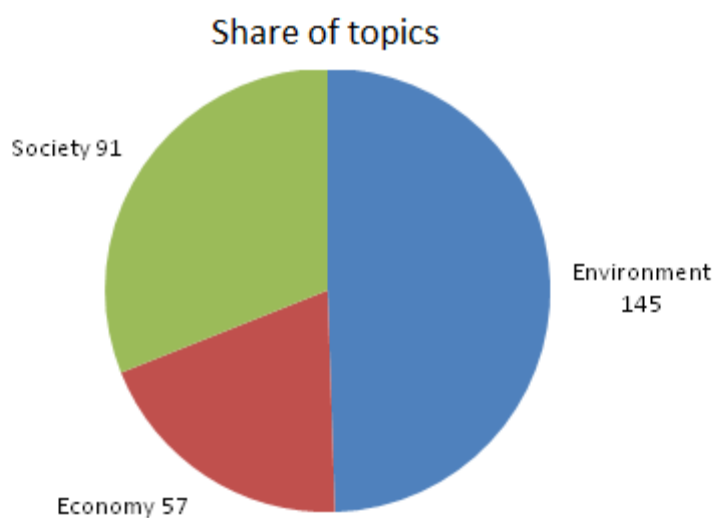


Figure 13 The share of the three topic categories in the articles.

Looking at the themes separately most discussed was overwhelmingly *pollution* 57 times and *co-operation* closely after it with 46 (figure 14). *Politics*, *transport*, *eutrophication* and *algal blooms* all come close together, ranging from 19-22 times. *Security*, *weather* and *shipping* were discussed 15-16 times, *sustainability* and *St Petersburg wastewater* 12-13 times. *Biodiversity*, *corporations* and *fishing* were all present equally 9 times, leaving *culture* and *energy* last, with mentioned occasions of 7 and 3 respectively. The themes cannot be separated clearly according to the frequency. As mentioned above environmental topics are discussed most, but it can be said that the themes are equally distributed. For example society topics of *co-operation* and *culture* and at the both ends of frequency ranges.

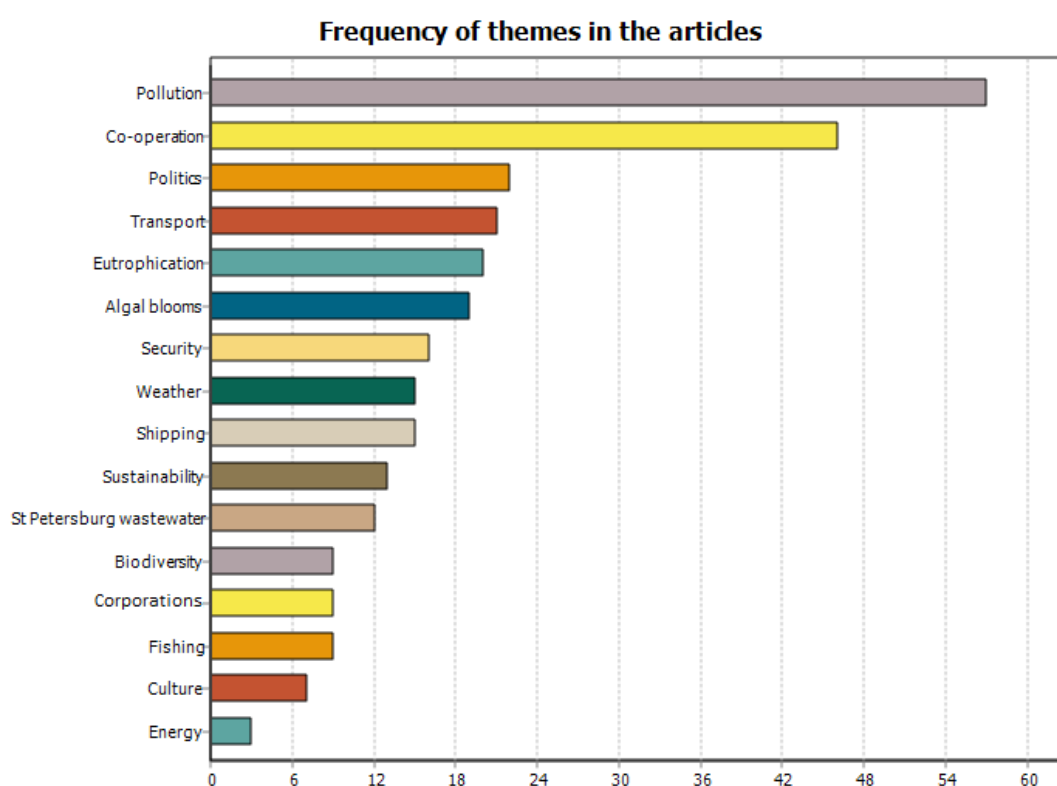


Figure 14. The presence of themes in the articles.

On average the environmental themes were mostly discussed in all newspapers, except in *Õhtuleht* as there the society themes were covering the majority concerning the Baltic Sea issues (table 7, figure 15). But it must be kept in mind that this newspaper prefers thrilling topics and security fits the profile well. Therefore the society is widely discussed as it also includes security and politics. Yet environment takes the second place and economy is the least present theme. *Postimees* and *Iltalehti* have the same pattern as environment is discussed most often, followed by economy and society. *Helsingin Sanomat* covers environmental themes over others by large. Topic of society is also widely covered leaving economy issues last.

Some tendencies could be noted between the countries and themes. For example St Petersburg's wastewater 9 out of 12 times was discussed in Finnish newspapers. Also 15 times out of 19 the published algal bloom stories were in Finnish newspapers. Yet security was more favorable topic for Estonian newspapers counting for 10 out of 16 articles. Other themes were divided more equally between the countries these three being the most extreme differences.

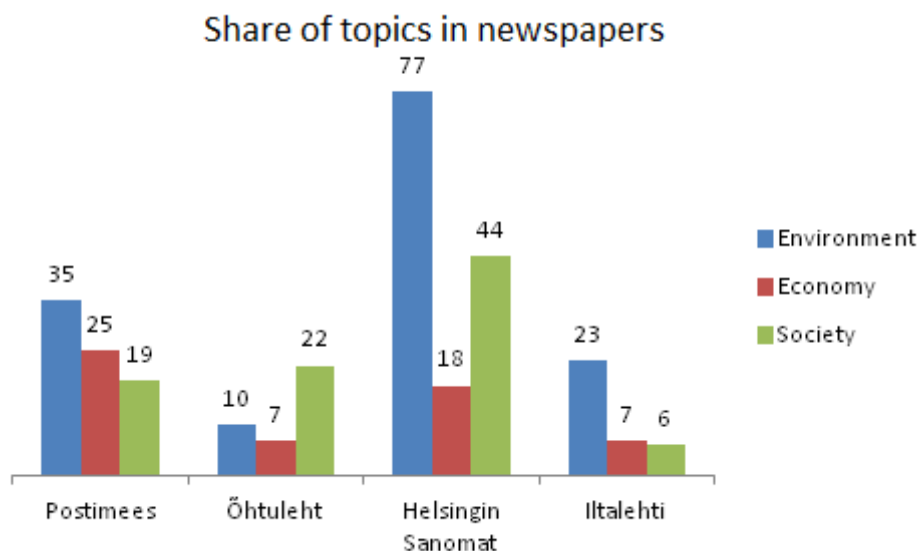


Figure 15. The number of occasions when topics were being discussed in newspapers.

Three most mentioned themes per newspapers are expressed in table 7. It can be seen that pollution, co-operation and politics are most covered themes. Some more specific environmental themes also make headlines, especially eutrophication in Helsingin Sanomat.

Postimees discussed also transport themes, mostly on the transit connections with Russia and ferries between Helsinki and Tallinn. For example in the article "*Tallink toobki Sea Wind'i Eesti-Soome liinile*" ("Tallink is bringing Sea Wind to Estonia-Finland route") it was stated that:

"Laeva liinimuutus seotud kasvunud kaubaveo nõudlusega Eesti-Soome liinil, teatas ettevõtte. Tallinki teatel võimaldab senisest lühema marsruudi abil vähendada kütusekulusid järgmise aasta suurenevate kütusekulude taustal." ("The change in ferry route is connected to growing transit demand on Estonia-Finland route. According to Tallink the new route helps to minimize the growing fuel costs in the coming year") (Postimees, 11.12.2014)

Transport articles usually did not discuss environmental aspects, only sometimes sustainability or pollution was mentioned. As mentioned above Õhtuleht has paid more attention on security and very often these articles discussing overlap with politics themes. Going through Õhtuleht's articles on

security and politics it can be seen that the articles are mostly about military activity over the Baltic Sea and NATO. The activity was mostly airborne, but also included the sighting case of Russian submarine in Swedish waters.

Table 7 Three most discussed themes per newspaper.

Newspaper	Theme most present	Number of articles
Iltaalehti	Pollution	7
	Co-operation	6
	Algal bloom, weather	5
HS	Pollution	29
	Co-operation	20
	Eutrophication	14
Öhtuleht	Co-operation	9
	Politics, security	6
	Pollution	5
Postimees	Pollution	16
	Co-operation	11
	Transport	9

4.3.3 Time of publishing

The publishing of the articles varied throughout the year whereas July, November and December being the most plentiful (figure 16). Low seasons for Baltic Sea topics were January-April and August-October. In March only one article was found to be concerning the sea.

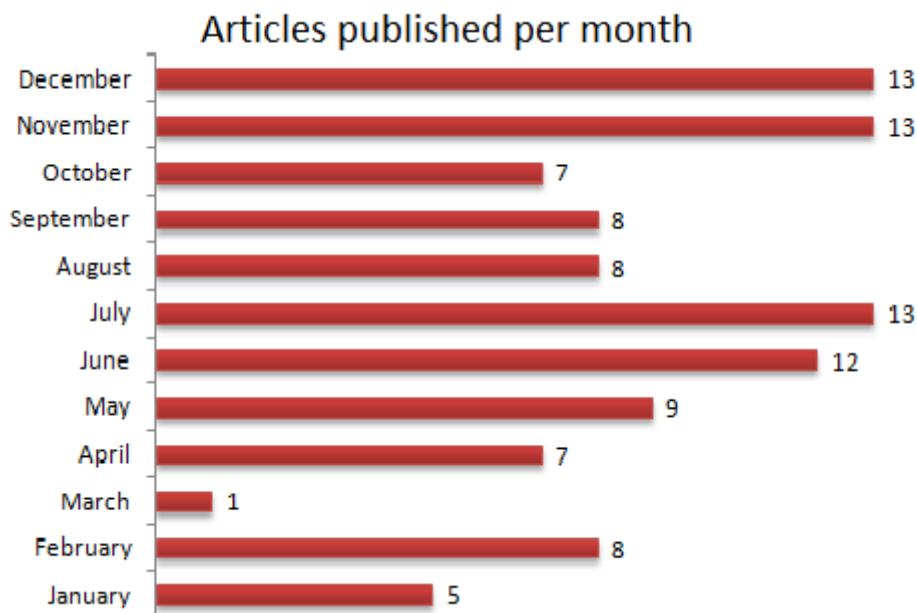


Figure 16. Articles in months This is the overall view of the articles, not considering the content.

It can be generalized that during second half of the year more articles have been discussing Baltic Sea. Looking at the time of publishing it can be seen that the environmental topics were most often talked of in summer months. Although in January variety of environmental themes were discussed the highest numbers of all environmental themes present were summer months of July with 25 environmental themes, and June and August both 20 mentionings. For example pollution, eutrophication and algal bloom themes peaked in summer months. Economical concerns were discussed the most in December, accounting for 11 cases. The beginning of the year was rather quiet on economy themes and the same almost applied to society topics also, apart from the month of February. In February almost all the society-related themes were discussed, except security. The most discussed months for society issues were November and December when in both cases 13 times different themes of society were present. September was a low period for society topics, whereas all other themes had plenty of coverage.

The thematic content results were not that varied (table 8). Based on the results it is visible that the most discussed theme throughout the year was *pollution*. Yet it has to be kept in mind that it is also one of the most general topics as it can be applied in various cases. For example articles "*Aleksander Laane: fosforist teadmistepõhiselt*" ("Aleksander Laane: knowledge-based approach to phosphorus") in Postimees on 22.01.2014 and "*Enää harva laiva laskee Itämereen öljyä*" ("Vessels' oil disposal to the Baltic Sea is becoming more rare") in Helsingin Sanomat on 11.02.2014 both apply to *pollution* theme.

Also *co-operation* ranked as high or higher than *pollution* in February, May, September and November. There is no surprise element in the often discussion on the co-operation in the Baltic Sea as mentioned before there are 9 countries surrounding the sea and being affected by it. The co-operation is an element in all areas- economy, politics, environmental protection etc. *Politics* was the stand-out theme in October, passing security by one more article (appendix 3). The different significant themes in October could be explained with the stacking of political concerns and occurrences (crisis in Crimea, crossing the Baltic airspace by Russian forces) which began to accelerate in the last half of the year. In March there were three themes equally discussed but as seen on figure 16 there was only one article published in March. So in this case the themes express the contents of one article only.

Table 8. The three themes with highest occurrence in every month are presented. If there were themes equally present, all of them are given. For the full view see appendix 3.

Month	January	February	March	April	May	June
Most popular theme(s)	Pollution, St Petersburg wastewater	Pollution, Co-operation	Pollution, Biodiversity, Transport	Pollution	Co-operation	Pollution

Month	July	August	September	October	November	December
Most popular theme(s)	Pollution	Pollution	Pollution, Co-operation	Politics	Co-operation	Pollution

Figure 17 indicates that articles on Baltic Sea were found in Iltalehti only in the months of January-February and April-July. Helsingin Sanomat has been publishing articles on Baltic Sea every month, especially in summertime and November-December. December for Helsingin Sanomat was mostly about wastewater from the ships in the Baltic Sea. HELCOM had been the leader on passing new regulations on wastewater effluents from the ships, but it had been inhibited mostly by Russia. The failure of passing the regulations before deadline was reported by Helsingin Sanomat more than once. Articles "*Käymälävesien lasku Itämereen uhkaa jatkua*" ("Wastewater disposal to the Baltic Sea threatens to continue") in 11.12.2014 and "*Venäjä torppaamassa kiellon tyhjentää alusten jätevedet Itämereen*" ("Russia rejects the ban on wastewater disposal to the Baltic Sea") in 10.12.2014. Helsingin Sanomat also published two related articles of "*Jätevedet ulos keskellä merta*" ("Wastewater in the middle of the sea") and "*Linjalaivat jättävät jätevedet satamaan*" ("Ferries leave their wastewater to harbours"). These articles were published accordingly on 10.12.2014 and 20.12.2014.

Interesting enough Iltalehti nor Õhtuleht did cover the topics. Postimees had one article about the regulations on wastewater from ships. As seen on the figure 17 in Estonia most articles were published in July, September, November and December. Here to be noted that majority of Estonian articles were published during the second half of the year.

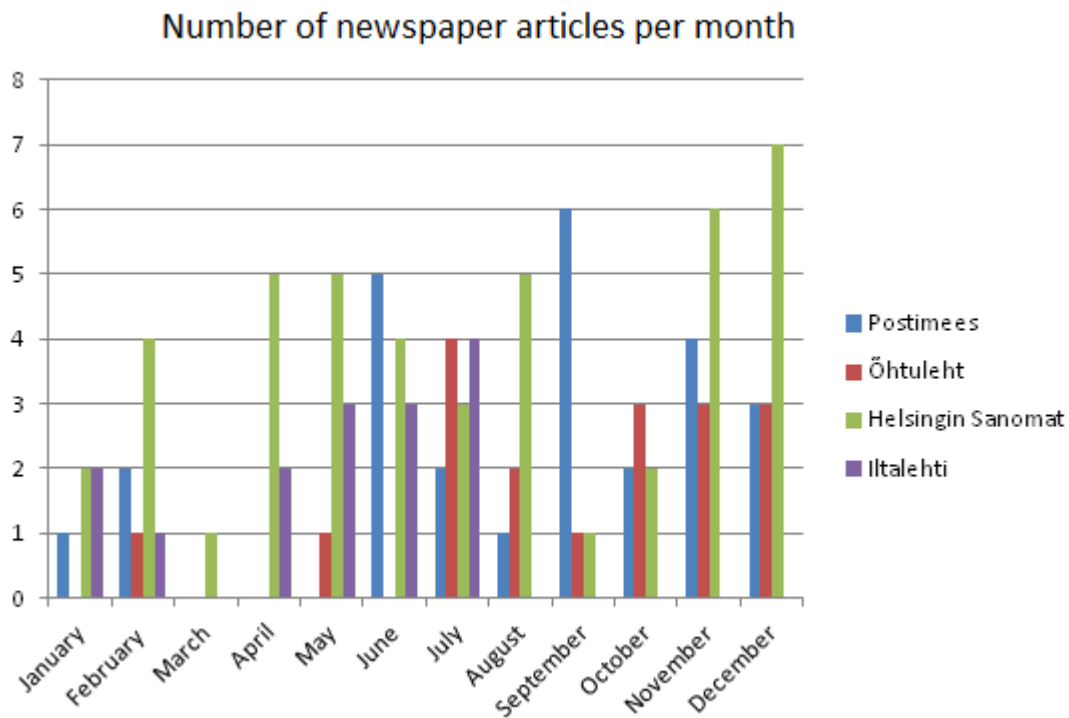


Figure 17 This graph presents the publishing of articles on Baltic Sea according to months per newspapers.

4.4 Stakeholders of the Baltic Sea results

Stakeholders in this paper are recognized as people or institutions that have an interest in the Baltic Sea or are affected by it. Also the stakeholders taken into account are the ones mentioned in the newspaper articles, though there may be others. Based on the results from text mining the graphs were created for illustration.

4.4.1 Frequency of stakeholders

Looking at the figure 18 it can be seen that the wider stakeholder groups are mentioned in the articles more often than the narrow stakeholder groups.

Frequency of stakeholders in articles

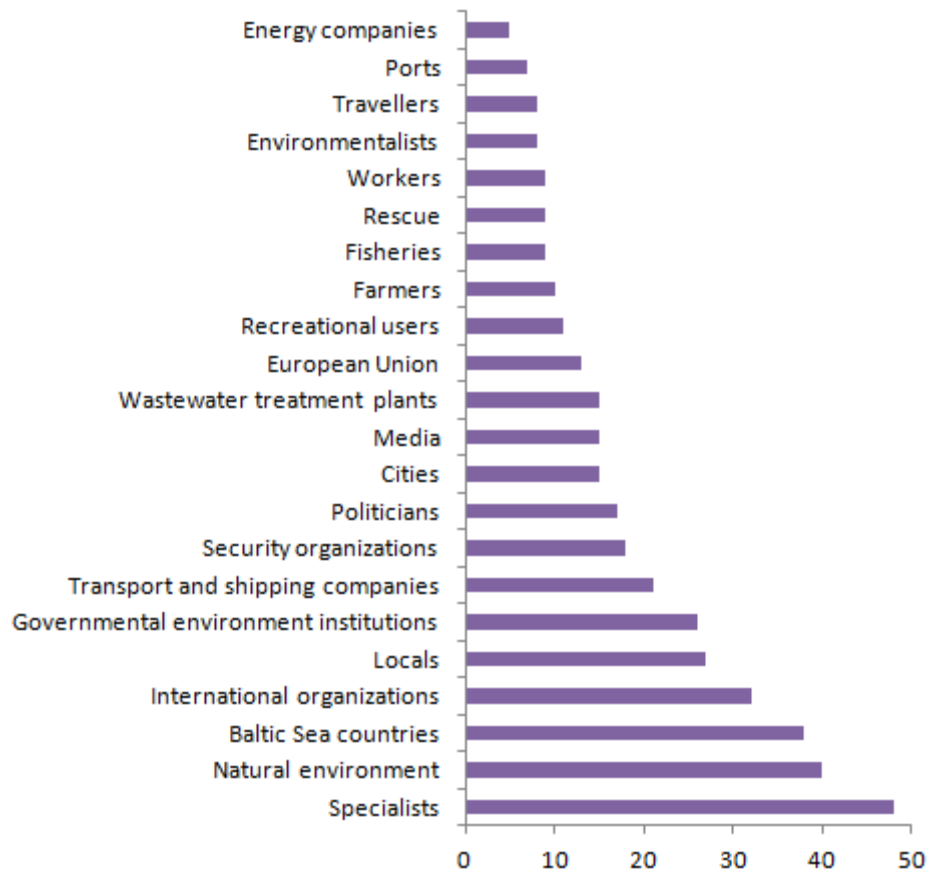


Figure 18 The stakeholders of the Baltic Sea as mentioned in the newspaper articles.

Specialists are most noted group of stakeholders, counting for almost 50 times. The group comprises experts from all areas, including environmental scientists, marine habitat researchers and financial experts. It was decided to limit the scope for the paper by grouping the variety of experts altogether to stand for professional opinions and reliable source. *Natural environment* follows the *specialists* group showcasing the impact on the environment in number of topics. *Natural environment* is usually a stakeholder in articles where pollution or improvement in the condition of the Baltic Sea is indicated. *Natural environment* and *Baltic Sea countries* often occur together for the same article which may indicate that every country has an impact on the environment. *Baltic Sea countries* stakeholder group was applied when more than one country was involved in the article. The high frequency of the group in the articles indicates the need for co-operation in Baltic Sea issues. It can be concluded that Baltic Sea issues should be perceived as international and rarely be seen just as national concerns. *International organizations* and *governmental environment institutions* are also on the top of the frequency list. This showcases the international and complex nature of the Baltic Sea. The industries, organizations, citizens and media are mentioned 1-20 times, which is remarkably less comparing to

specialists and *natural environment*. Therefore it must be highlighted that these last groups of stakeholders have confined scope as they are more specialized. It can be seen that *ports*, *travellers* and *workers* have in common the rare presence in the articles as they count below 10 times. Yet those three groups are similar as their main interest lays in travelling on the sea, including the port institutions, travellers and workers on and offshore. Keeping the stakeholder groups separately highlights the different perspective of the interest groups. The *workers* also indicate how much work the sea can provide for the society and highlight the economical dependance on it.

4.4.2 MAW-Model on Baltic Sea stakeholders

The MAW-Model that was introduced in chapter 2.3 was created for the listed stakeholders of the Baltic Sea which were found in newspaper articles. Figure 19 illustrates the attributes of the stakeholders and group them according to their claims. The non-stakeholders were not considered in this analysis and dormant stakeholders were not noted.

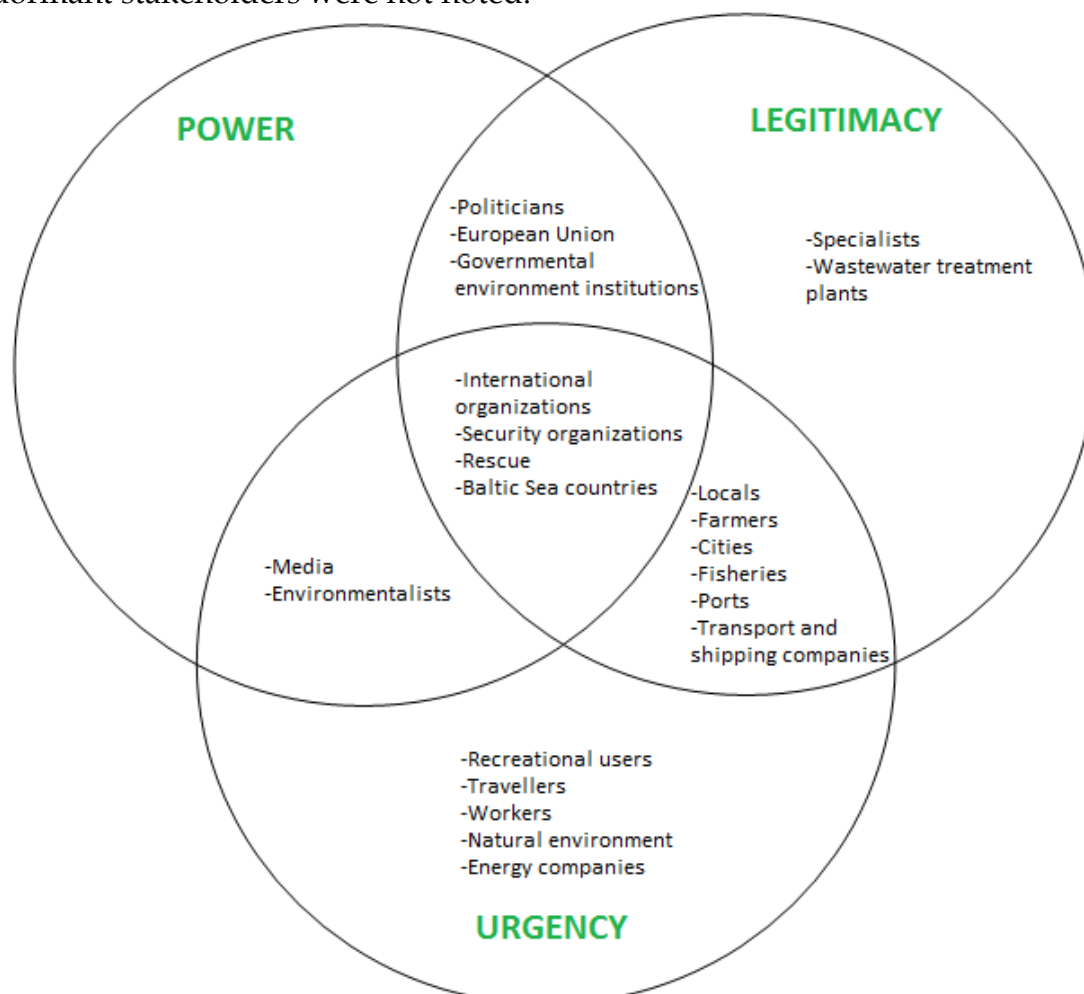


Figure 19 The MAW-Model on the Baltic Sea stakeholders as listed in the articles.

In the case of private citizens such as *recreational users, travellers, workers* on the sea and *locals*, only the last is considered to have legitimacy to their claims. *Locals* live on the coastal areas and are immediately affected by for example pollution, heavy traffic on the sea or regulations on their living area (environmental protection, construction requirements) therefore they hold also legitimacy. Another difference lies in the attributes of industries. *Energy companies* are separated from the other industries by the absence of legitimacy. *Fisheries, farms, ports, transport and shipping companies* have direct contact with the waterbody whereas *energy companies* only transport their goods via the sea. No hydroenergy companies were mentioned in the articles otherwise this case would have been exclusion.

4.4.2.1 Dormant and discretionary stakeholders

Dormant stakeholders were not found, as all the listed stakeholders with power had at least one other attribute. The discretionary stakeholders such as *specialists* and *wastewater treatment plants* possess the legitimacy to their claims. *Specialists* are experts on their fields making their opinions valued and *wastewater treatment plants* are directly connected to water management. Demanding stakeholders have urgency in their pursuits, such as *travellers, workers, recreational users, natural environment* and *energy companies*. They are dependant on the environmental conditions but do not have the opportunity to make direct impact on management of the sea. *Travellers* and *workers* are both interested in the sea as means for transport, but do not have the power nor legitimacy to affect the transportation companies' management. For example only difference that *travellers* can make is whether to use the transportation services or not and in this case it is not considered as direct power. Same applies to *workers* and *recreational users* as they only consume the services offered by the ecosystem and/or sea transport. One could say that the most significant stakeholder in the Baltic Sea is *natural environment* itself. It is a unique stakeholders who has all the claims for affecting its own condition but not being a person nor stakeholder does not own a voice and capability to make an impact. *Energy companies* are dependant on the sea as source of transportation or pond of resources. Yet it is an industry meaning it cannot possess legitimacy and power over the insitutions organizing the management.

4.4.2.2 Dependant stakeholders

Dependant stakeholders are in a similar position as demanding ones but they possess legitimacy for their claims. For example *locals* and *cities'* managements are intertwined with the Baltic Sea but do not hold direct power to make an impact for their own gain. *Locals* are the people who live in the affected region permanently and therefore are significant stakeholders. *Cities* are strongly connected to *locals*, as they are also representing their interests but in a more legitimate manner. *Cities* are not considered to have power over the sea's

management as one city alone can affect only local management and the bureaucratic processes are time-consuming and connected to number of other factors. *Farmers* and *fisheries* are economically and environmentally dependant on the sea. They are interested in the healthy state of the sea as it is provider of resources but their own activities may be causing pollution also. So they have both legitimate reasons to have a say in the management and urgency as their activities are dependant on the ecosystem. In this paper companies and industries are not considered to have the power to influence the management of the sea. The impact comes via market and is not directly applied. Same applies for *transport and shipping companies* as they are not the decision-makers but the business is directly based on the Baltic Sea making them dependant stakeholders.

4.4.2.3 Dangerous stakeholders

Dangerous stakeholders in this case are *media* and *environmentalists* as they both hold urgency and power, making it possible for them to make an impact although they do not have the legitimacy for it. Environmentalists in this case are considered to be activists and people from NGOs therefore official environmental specialists who hold legitimacy are not included here.

4.4.2.4 Dominant stakeholders

Dominant stakeholders lack the urgency in their issues, though they are powerful stakeholders by possessing legitimacy and power. *European Union*, *politicians* and *governmental environment institutions* are all governing decision-makers but listed to not have urgency in their causes. Those stakeholders are not considered to have critical urgency as bureaucratic processes take time and they are not directly dependant on the Baltic Sea.

4.4.2.5 Definitive stakeholders

The definitive stakeholders can pose the most notable impact on the sea as they hold power, legitimacy and urgency all combined. *Baltic Sea countries* could be seen as the most significant stakeholders of the Baltic Sea together with *natural environment* but they remarkable difference lays in the power and voice. *Baltic Sea countries* hold all three attributes as they also present the legislative power. The same applies for *international organizations* who represent co-operation of countries and institutions. For example IMO has the power to develop abiding regulations that protect the environment and take into consideration the interests of countries and maritime organizations (ports, shipping companies etc). *Security organizations* and *rescue* are important in their cause possessing urgency, power and legitimacy in their actions and regulations. These organizations such as NATO create the regulations together with action plans

and see through the executions. These activities considered contribute to becoming significant stakeholder.

4.4.3 Influence diagram of the Baltic Sea stakeholders

In the influence diagram in figure 20 the connections of different stakeholders of the Baltic Sea are drawn to get better understanding of the stakeholders' relations and relevancy. Direct influences are considered as connections here, for example locals power to elect politicians is not taken into account as it is a long-term commitment and indirect. Also only both ways influential connections were considered. The connections are mostly based on how the stakeholders were presented in the newspapers.

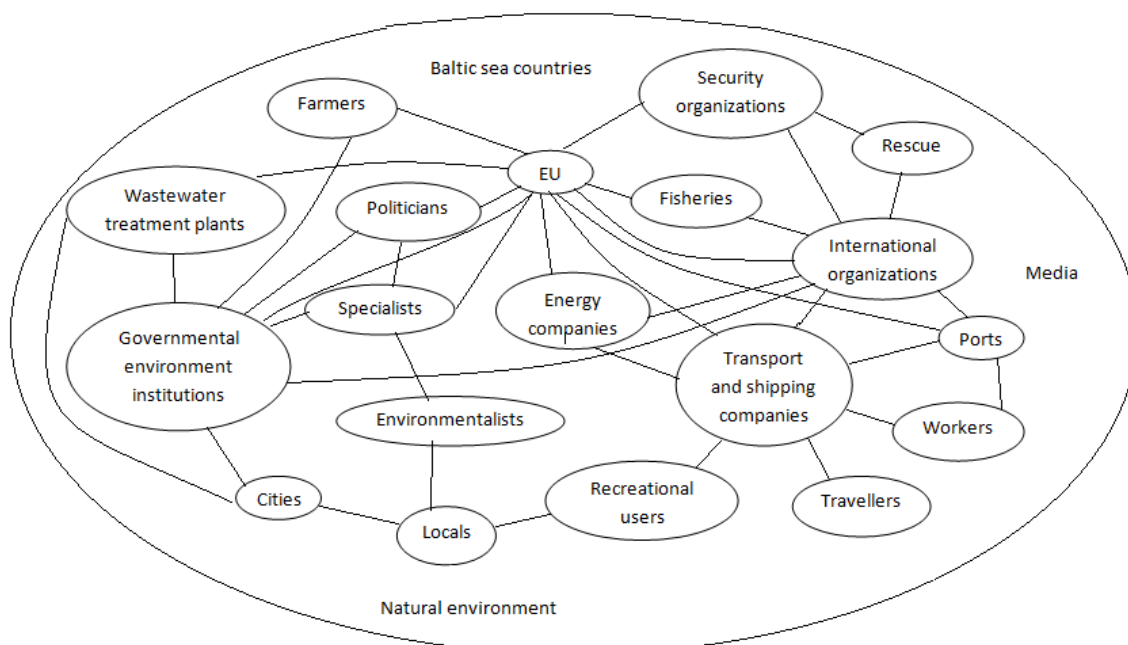


Figure 20. Stakeholder influence diagram for the Baltic Sea according to newspaper articles

Baltic Sea counties, *media* and *natural environment* have connections to all of the other stakeholders therefore they are located within the comprising oval. *Baltic Sea counties* and *natural environment* are always present and affected in any situation whereas *media* can reach to all the stakeholders in case of interest. In the following paragraphs they are not mentioned as being a connection, because they apply to all cases in the same way.

EU proved to be the stakeholder with 11 and most connections as it is the legislative institution for majority of the Baltic Sea countries and poses significant impact on the common management of the sea. *EU* has connections to all the institutions and also farmers who are directly affected by the legislations.

The same applies for the *international organizations* who have three connections less. One could expect the *international organizations* to have more connections than *EU* but it must be noted that *EU's* role comprises different areas of subject and therefore its relevancy is higher. *International organizations* hold connections with industries and cooperation partners, e.g. *fisheries* and *rescue*. All the transport activities together with ports are highly dependant on *international organizations*, mostly to apply common regulations and practices in the field. In this case *farmers* do not have connection to international organizations as the *EU* seemed to be most significant connection that makes impact on farming policies in the area. It can be noted that no people stakeholder groups are mentioned to have connections.

Governmental environment institutions are specific to one Baltic Sea country but are connected on an international cooperation level. Therefore they have connections with *EU* and *international organizations*. At the same time they have direct impact on local activities stakeholder groups such as *wastewater treatment plants*, *farmers* and *cities* management. Also *politicians* and *specialists* have connections as executers of politics or providers of expertise respectively.

Transport and shipping companies have also 7 connections, including the legislative institutions, companies and individual people as *workers*, *travellers* and *recreational users*. This stakeholder group has direct connection to all other stakeholders who are using or are affected by transport on the sea.

Most of the specialized stakeholder groups have 2-4 connections which are the cooperation partners or legislative institutions. For example *ports* have connections to *EU*, *international organizations*, *transport and shipping companies* and *workers*. *Security organizations* and *rescue* have connections with each other and *international organizations*. These organizations are based on cooperation with institutions from same field therefore not many connections are present. Security organizations and *EU* are often intertwined in politics and stand for the common interest of safety of the area.

Wastewater treatment plants and *farmers* both have two connections as they have to follow the standards and regulations provided by *EU* and *governmental environment institutions*. Same applies to *fisheries* and *energy companies* who both have connections to *EU* and also *governmental environment institutions* and *international organizations* respectively. The connections are to the institutions that most affect their management and practices.

The stakeholder groups of people have less connections than institutions. *Workers* are tied to the employers *ports* and *transport and shipping companies*. *Travellers* and *recreational users* are also connected to the *transport and shipping companies* which is important means for their interests. *Recreational users* can also be associated with *locals* who are living in the nearby area as sometimes it might be difficult to make difference between locals having recreational activities or someone who does not live nearby.

Environmentalists are considered not to be involved with governmental or legislative institutions. They are representatives of local environmental

concerns therefore the connections to locals and specialists. *Environmentalists* might include or cooperate with specialists for research on issues. *Specialists* are stakeholder group who has connections to institutions such as *EU* and *governmental environment institutions*, and people such as *politicians* and *environmentalists*. *Specialists* are considered to be objective group of people who share their expertise on variety of issues and with different stakeholders. As for *politicians*, they have direct connections with legislative power (*EU* and *governmental environment institutions*) and specialists as they are representatives of politics and also need advice on certain matters.

Cities are location-oriented stakeholder who are employer for nearby *wastewater treatment plants*, partly governed by *governmental environment institutions* and managing the living conditions for *locals*. *Cities* do not have direct connections to other institutions or people who might not be living in the area.

In the stakeholder influence diagram (figure 20) the connections affect in both ways meaning the indicator of relevancy can also be not the number of connections but with whom the connections are. For example *farmers'* connections are *EU* and *governmental environment institutions* which implies that farmers can pose pressure on the legislative power.

5 DISCUSSION

The results present what topics are most widely discussed in media concerning the Baltic Sea and who are the stakeholders. Number of tendencies were noted amongst the articles' content and often different issues overlapped and highlighted the contrasting nature of the case.

5.1 Tendencies between newspapers and their webpages

The media analysis was proved significant by Kapaciauskaite (2011) as the results expressed the impact that rising environmental awareness in the society has had on the Baltic Sea administration. Media channels have their own impact on news' topics and how these are perceived, therefore the need for individual analysis on newspapers.

Firstly it can be mentioned that the search of keywords from webpages was varied from newspaper to newspaper. Some webpages can be evaluated to have more customer friendly webpage search whereas others were distinguished by more detailed results. For example in Helsingin Sanomat keyword "itämeri" provided all the articles without the need to use different cases of the keyword. Also in the same newspaper most of the resulted articles proved to be relevant for this research whereas Õhtuleht listed together also a number of irrelevant articles, e.g. new cruise theme on a ferry. It was noted on few occasions that also other newspapers from both Estonia and Finland referred to Helsingin Sanomat in their articles. As a result Helsingin Sanomat established itself as most reliable and easy to use source for data.

Helsingin Sanomat and Postimees had similarities in the content of the published articles on Baltic Sea and so did Iltalehti and Õhtuleht. Yet it was expected to find more tendencies between newspapers from the similar style of journalism. In reality the themes in all of the newspapers were rather mutual, most outstanding difference being that tabloid journalism covered thrilling topics such as vessel accidents. It can also be concluded that Helsingin Sanomat is the pioneer on news stories connected to Baltic Sea. It covers the widest variety of topics and is often quoted by other newspapers.

5.2 Recurrences in themes

The variation of themes in the newspapers can be seen as providing more perspective to the sea issues. Usually group of readers are devoted to one newspaper meaning there are different perspectives laid upon different groups

in the society. In this case different target audiences receive moderately similar ratio of topics connected to the Baltic Sea.

Yet tendencies were noted to exist between countries. For example Estonian newspapers covered widely security issues whereas Finnish newspapers were writing about algal blooms and St Peterburg wastewater treatment. In fact 10 out of 16 articles on security were Estonian; 15 out of 19 articles on algal bloom and 9 out of 12 St Petersburg wastewater treatment articles were Finnish. Finland was one of the funders of renewing St Petersburg wastewater treatment plant as the pollution ended up in the Gulf of Finland and was directly affecting the Finnish coastal ecosystems and algal blooms. Estonia on the other hand is cautious on the political and security level as a result of historical events with Russia. Even the war activities in Ukraine were discussed in an article stating to have impact on the security level on the Baltic Sea. These interests of countries are highlighted to be individual.

Based on the articles from 2014 not many economical topics connected to Baltic Sea were discussed. The transport and shipping industry and GAZPROM natural gas pipeline were mentioned few times but not in connection with problems caused by conflict of interests with environmental concerns. It was an interesting notion that environmental and transportation topics were usually not mentioned in the same articles. It can be speculated that the environmental aspects are not considered sufficiently when it comes to economy, especially transport. Transport possibility on the Baltic sea can also be seen as its ecosystem service. Sea provides the means for transport, therefore supporting financial gain. But changes in the environment can inflict financial losses. So all three pillars of sustainability should be taken into account to achieve sustainable living conditions and remain financially beneficial.

From articles' content the significance of pollution and cooperation stands out as these are discussed in articles respectively 57 and 46 times. It could be stated that the most severe problem of the sea is often discussed together with the solution to it- cooperation. Cooperation is a characteristic to the sea as sea must be managed in unison on international level. The countries of the Baltic Sea were constantly mentioned in the articles, as were international organizations and agreements. The topic of Baltic Sea itself is international and in all four newspapers the international stakeholders were considered.

Pollution of the sea has various forms but characteristic in common is that it knows no borders. For example the case of Finland and St Petersburg wastewater from Russia showcases the need for cooperation to reach one's needs. The extent of pollution in the sea can be described by cases of point source pollution and overall worsened condition of the habitats. Both are introduced and analysed in the media to provide a comprehensive grasp on the extent of environmental condition of the sea to the readers. As mentioned above some newspapers tend to publish these extreme events or wake-up-call articles to agitate the readers. As a result more dramatic view is created to intrigue the topic.

5.3 Tendencies in relation to time

Based on the newspapers there was no specific rule how often some themes were present but tendencies were noted in the time of publishing in relation to themes.

The environmental topics were present mostly in summer months which was expected as warmer weather leads to algal blooms and changes in environmental conditions. Also spring and summertime tend to be the seasons when people enjoy the sea most and therefore care for the connected topics.

Winter months November and December also had rather wide coverage on the sea but their topics were mostly concerning security, politics and co-operations which can be seen as a reflection on the political situations with intrudances of the Russian air force. The changes in political environment have to be considered in the case of the Baltic Sea where the surrounding governments have their differences and varying interests, as discussed in chapter 2.1.

5.4 Submerged themes

Some themes were left out from the analysis whereas others emerged during the ongoing research process and were too late to be included. For example transport and shipping could have been united under one theme and the results suggested that also agriculture, rescue and health could have been included as separate themes.

Agriculture could have covered farming industry, regulations and also pollution sourced from agricultural activities. Rescue was included in this research as a stakeholder which rose a question whether it would have been also insightful theme as in the case of Baltic Sea, rescue is a relevant topic. Rescue could have comprised all safety concerns and rescue activities discussed in the newspapers. Another theme that appeared while analysing the articles was health. Health could have covered truly wide variety of articles, as it may include health concerns raised from algal bloom, the quality of fish, pollution of beaches etc. Also it is a topic that is very relatable to every reader on a personal level.

5.5 Complexity of stakeholders

It proved to be a difficult task to map the stakeholders, especially the influence diagram as there are several connections between all stakeholders.

As seen from the influence diagram (figure 20) the definitive stakeholders who possess all three stakeholder attributes are *international organizations, security organizations, rescue and Baltic Sea countries* as such. The common ground for these stakeholder groups is the international aspect. Also none of these is from the *people* stakeholder group. This indicates that most valuable and powerful stakeholders are predominantly international institutions, such as HELCOM and EU.

The Baltic Sea stakeholders' analysis suggests that the stakeholder group *people* had fewer connections than the *institutions*. *Other* is not mentioned in this case as they had connections with all stakeholders. *People* had 1-4 connections with other stakeholders whereas *institutions* hold up to 11 connections. The number of connections does not exactly showcase the importance of the stakeholder but the power and relevancy it can hold. If a stakeholder has more connections it also means it has power and legitimacy to impact the management processes of the Baltic Sea. It is supported by the influence diagram (figure 20) where it is visible that *EU* and *international institutions* hold most connections. Baltic Sea is very international matter therefore these two stakeholders prove to be most significant ones also in reality.

The key to successful and beneficial management of the common sea is cooperation on every level. Yet tendency was showcased that *people* and *institutions* stakeholder groups usually do not have direct connections. The *people* group has fewer connections and mostly within the same group. This raises a question whether individual stakeholders hold smaller stake in the Baltic Sea affairs or are just less able to make a difference for their own cause. It can only be speculated that by creating and strengthening the connections to institutions and industries, more voice can be acclaimed by the *people* stakeholder group.

The *locals* are living in the area and are highly affected by the activities and changes in the Baltic Sea surroundings but nonetheless the collaboration with other stakeholders seems to be rather limited. Freeman (1984) defined the stakeholders to be any group or individual who is affected or can affect the organization "*any group or individual who can affect or is affected by the achievement of the organizations' objectives*" which clearly states *locals'* legitimacy and urgency. The problem remains in their lack of power that could be improved by taking locals more into consideration in decision-making.

Thematical connections were visible from stakeholder influence diagram (figure 20) where sea transport activities had tight connections amongst each other and also local environmental management, including *governmental environment institutions, politicians, specialists, cities and locals*. Yet there were some connections that were not visible from the articles, for example *wastewater treatment plants, fisheries and farmers* should have connections as they all are the source of nutrient release to the sea. Also other thematical connections should be considered such as importance of *rescue and security organizations* both to individual stakeholders and industries.

6 CONCLUSIONS

The aim of this research was to present how Baltic Sea is perceived by the public as an ecosystem and economical resource and who are the mentioned stakeholders. On daily newspapers the topics are not limited to any niche and present the variety of concerns and interests directed at the Baltic Sea. The chosen data source was media as it represents the topics that reach highest number of people on a widest scale.

On a daily basis people value the Sea as a beautiful view, vacation and fishing spot etc. If any of those values is hindered, more attention will be paid on the environmental condition and sustainability of the Baltic Sea (Ducrotoy and Elliott, 2008). The environmental condition of the Baltic Sea is the most discussed concern in the Estonian and Finnish media by covering half of the articles (figure 13). Society and economy follow respectively. It can be considered surprising that economy topics were least presented, although the sea itself is connected to large corporations and variety of industries. It could be concluded that the concerns of these stakeholders are just not discussed so openly in the media.

The complexity of the Baltic Sea was best presented by the difficult task of attaching themes to articles as it cannot be seen as just ecosystem etc, but other interests must be considered. The underlying theme was harmonizing the three aspects- environment, economy, society. Mostly discussed were pollution and cooperation indicating the internationality of the matter and necessity of cooperation to overcome the environmental problems. The pollution is often caused by individual polluters but the involvement of other stakeholder is expected for the revival.

The history and specific interests make a difference in the articles' content by countries. These tendencies indicate that owing to political situation and history Estonia is highly concerned on the Russian relations and security, and Finland takes a lot of responsibility of environmental protection of the area (table 7). Interestingly enough, not many discussions on conflicting topics were published. The variety of topics was indeed discussed, but separately and not in comparison. Hereby conclusions can be made that the audience does not receive directly the essence of the complexity of interests in the Baltic Sea.

Most influential stakeholders appeared to be institutions where also NGOs and other associations were included. It suggests that organizing the groups of stakeholders could benefit the cause as individuals and attitudes as such do not get much coverage. From the influence diagram (figure 20) it was visible that *natural environment* can affect and is affected by every stakeholder of the Baltic Sea. The significance of the natural environment in the sea's management and activities highlights the need for consideration of all three pillars of sustainability and ecosystem approach in the area (WCED, 1987).

Media is another significant stakeholder that holds a connection with all stakeholders, justifying also the approach of this research.

Looking at the articles from two different countries it can be seen that regardless of few differences in highlighted affairs the variation of topics is insignificant and core concerns on the issue remained the same. Therefore cooperation of the surrounding countries is in the interest of all participants as their intentions match and will contribute to successful management of the common good.

6.1 Limitations and future research

This paper's approach to stakeholders is rather wide as the goal was to get an overview, so for more detailed analysis the amount of articles and span of time should be reconsidered. Stakeholders' connections to certain topics and time of publishing were not discussed in detail. It proved to be highly intertwined and complicated network of stakeholders where not all connections were openly presented. Controversies between stakeholder groups such as conflicting interests of opponent stakeholders were not analyzed in this case.

It must also be remembered that media does not present the objective perspective and reality. Media is a channel to lead information and can have an impact on the content (source). Depending on the location and target group the topics in the newspapers can be hindered. It should be considered that countries of publishing posed some tendencies on articles whereas the type of journalism seemed to have more significant impact. For example the readers of tabloid newspapers have somewhat of a limited access to topics that are not dramatically engaging.

Another aspect to be remembered is that the articles for this research were collected from year 2014. So no long-term and extensive conclusions can be derived from analyzing the articles content from one year only.

In the future larger research could be considered to analyze which stakeholders of the Baltic Sea are connected to certain topics and more significantly the power of these stakeholders in the course of these matters. In this paper the complexity of Baltic Sea issues was partly presented, so the most influential factors and actors for these topics could be found.

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APPENDIX 1.

List of articles used as data in this research.

	Country	Newspaper	Month	Article
1	Finnish	Helsingin Sanomat	December	Käymälävesien lasku Itämereen uhkaa jatkoa
2	Finnish	Helsingin Sanomat	December	Ympäristöministeriö säästää neljänneksen
3	Finnish	Helsingin Sanomat	December	Linjalaivat jättävät jätevedet satamaan
4	Finnish	Helsingin Sanomat	August	Vihdoin hyviä uutisia Itämereltä
5	Finnish	Helsingin Sanomat	August	Itämerellä on pitkä muisti
6	Finnish	Helsingin Sanomat	August	Itämerä pelastaa toimijoiden vyyhti
7	Finnish	Helsingin Sanomat	December	Venäjä torppaamassa kiellon tyhjentää alusten jätevedet Itämereen
8	Finnish	Helsingin Sanomat	November	Itämeren pyydyksiin hukkuu vuosittain 2000 harmaahyljettä
9	Finnish	Helsingin Sanomat	December	Meren katselu on perustarve
10	Finnish	Helsingin Sanomat	December	Tutkijat: Venäjä ottaa Itämerä haltuun
11	Finnish	Helsingin Sanomat	December	Jätevedet ulos keskellä merta
12	Finnish	Helsingin Sanomat	November	Pietarilaiset aktivistit huuhtoivat lähettämiä vessasta: jätevedet valuvat suoraan Suomenlahteen
13	Finnish	Helsingin Sanomat	November	Pietarin ympäristön wc-vesiä valuu mereen
14	Finnish	Helsingin Sanomat	November	Suomelta puuttuu kansallinen meristrategia
15	Finnish	Helsingin Sanomat	November	Venäjän laivasto vahvistanut harjoitteluaan Itämerellä- "aktiiviteetti on lisääntynyt"
16	Finnish	Helsingin Sanomat	November	Kalataloustieteen professori: Itämeri on ollut lohienkalastuksen villi länsi
17	Finnish	Helsingin Sanomat	October	Ympäristöministeri Grahn-Laasonen: Maatalouden päästöt Itämeren suurin ongelma
18	Finnish	Helsingin Sanomat	September	Sinilevät piinaavat edelleen Varsinais-Suomea
19	Finnish	Helsingin Sanomat	August	Ministerit vähentäisivät Itämeren ravinnepäästöjä eri keinoin
20	Finnish	Helsingin Sanomat	August	Ministeri Niinistö: Menneisyyden synnit tulevat näkyviin Itämerellä
21	Finnish	Helsingin Sanomat	June	Laivahylt houkuttelevat rosvoja Itämerelle – varkaat jäävät harvoin kiinni

22	Finnish	Helsingin Sanomat	June	Helsingin yliopisto: Mikroroska uhkaa Itämerta
23	Finnish	Helsingin Sanomat	June	Vanha hylky vuotaa öljyä Itämereen – Suomelle ei vaaraa
24	Finnish	Helsingin Sanomat	July	Jätevedenpuhdistamon rakentaminen Kaliningradissa viivästyy taas
25	Finnish	Helsingin Sanomat	July	Suomenlahden tila on edelleen heikko
26	Finnish	Helsingin Sanomat	July	Jätevesifarssi Itämerellä
27	Finnish	Helsingin Sanomat	May	Mikään Itämeren maista ei selviäisi suuresta meriturmasta yksin
28	Finnish	Helsingin Sanomat	May	Puolan fosforivuodon käsittelystä tuli farssi
29	Finnish	Helsingin Sanomat	May	Mikään Itämeren maa ei selviä yksin suururmasta
30	Finnish	Helsingin Sanomat	May	Puola: Fosforia vuotanut kipsivuori on turvallinen
31	Finnish	Helsingin Sanomat	May	Gdanskin kipsivuoren fosforia kulkeutuu merelle päin
32	Finnish	Helsingin Sanomat	April	Gdanskin kipsivuoresta vuotaa edelleen fosforia lähivesiin
33	Finnish	Helsingin Sanomat	April	Ukrainan kriisi ulottuu Suomenlahdelle
34	Finnish	Helsingin Sanomat	April	Suomi johtamaan Itämeri-politiikkaa
35	Finnish	Helsingin Sanomat	March	TS: Laivojen vedenalaiselle melulle ehkä rajoituksia
36	Finnish	Helsingin Sanomat	February	Enää harva laiva laskee Itämereen öljyä
37	Finnish	Helsingin Sanomat	February	Suomen rannat ovat Itämeren sottaissimpia
38	Finnish	Helsingin Sanomat	February	Suomen rannat vertailun roskaisimmat
39	Finnish	Helsingin Sanomat	January	Itämeri lähes kaksi astetta keskiarvoa lämpimämpi
40	Finnish	Helsingin Sanomat	June	Puola aikoo vähentää päästöjä
41	Finnish	Helsingin Sanomat	April	Itämereen valuu rehevöittäviä ravinteita kaukaa sisämaasta
42	Finnish	Helsingin Sanomat	April	HS:n näytteet osoittivat vuodon
43	Finnish	Helsingin Sanomat	February	Pro bono -vapaaehtoistyö yleistyy myös suomalaisilla työpaikoilla
44	Finnish	Helsingin Sanomat	October	Suuret, siniset, suolaiset
45	Finnish	Helsingin Sanomat	January	Tuulinen talvi paransi Suomenlahden tilaa

46	Finnish	Iltalehti	January	Leuto sää vaikuttaa: Itämeri lähes kaksi astetta keskiarvoa lämpimämpi
47	Finnish	Iltalehti	May	Silakka on kutistunut: tässä syy
48	Finnish	Iltalehti	May	Raportin karu totuus: Itämeren maat eivät selviäisi yksin suuresta meriturmasta
49	Finnish	Iltalehti	July	Ympäristökeskus neuvoo: Näin testaat, onko se sinilevää
50	Finnish	Iltalehti	July	Sinilevää ruunsasti merealueilla
51	Finnish	Iltalehti	July	Tämän takia sinilevä on vaarallista- aiheuttanut jopa lemmikkien kuolema
52	Finnish	Iltalehti	July	Vältä merivettä rannikoilla- suurimmat sinilevälautat 10 vuoteen!
53	Finnish	Iltalehti	June	SYKE: Suomi varautunut paljon suurempaan öljyvahinkoon
54	Finnish	Iltalehti	June	Sinilevä kukkinee merellä viime vuotta enemmän
55	Finnish	Iltalehti	April	HS: Gdanskin kipsivuoresta vuotaa yhä fosforia
56	Finnish	Iltalehti	February	Suomessako puhdasta? Rannat kuuluvat itämeren roskaisimpiin
57	Finnish	Iltalehti	May	WWF haluaa perustaa Porkkalaan kansallispuisto
58	Finnish	Iltalehti	April	Helsingin ja Tallinnan välille puuhataan tunnelia
59	Finnish	Iltalehti	June	Hurja arvio: Suomenlahden vesi nousee 30 cm alle vuosisadassa
60	Finnish	Iltalehti	January	Suomalaisten puuttuminen tuomassa tulosta: Hatsinan ja Viipurin fosforipäästöt kevenevät
61	Estonian	Õhtuleht	August	Muinastulede öö korraldaja- prügi ärge endast maha jätke
62	Estonian	Õhtuleht	November	Eesti, Läti ja USA miinituukrid lõhkavad Tallinna lahes lõhkekehasid
63	Estonian	Õhtuleht	December	Prognoos: nädala teine pool tuleb tormine
64	Estonian	Õhtuleht	October	Olime Rootsile nii lähedal, et paljaste rindadega suvitajad tulid mei uudistama
65	Estonian	Õhtuleht	December	Venemaa õhuväe lennukid liiguvad Läänemere kohal
66	Estonian	Õhtuleht	November	Läänemerel Läti piiri lähedal tuvastati jälle vene lennuk
67	Estonian	Õhtuleht	November	Vene sõjalennukite aktiivsus balti õhuruumis on kordades kasvanud
68	Estonian	Õhtuleht	October	Meretuuleenergia osas soovitatakse Läänemeres olla julgemad
69	Estonian	Õhtuleht	October	Eesti ja Rootsi valitsusjuhid peavad olukorda Läänemerel murettekitavaks
70	Estonian	Õhtuleht	August	Läänemeres märgati vaala
71	Estonian	Õhtuleht	July	Ilmaprognoos- suvesooja jätkudes on eesti vetesse oodata sinivetikaid
72	Estonian	Õhtuleht	July	Tallinki suurim laev Austraaliasse, firma koondab kuni 90 töötajat

73	Estonian	Õhtuleht	July	NATO viib eesti vetes läbi miinitõrjeoperatsiooni
74	Estonian	Õhtuleht	December	Soome lahel tõrjutaks laevapõleng sinsete rannariikide koostöös
75	Estonian	Õhtuleht	May	Läänemere põhjast proovitakse välja tuua keemiarelvi
76	Estonian	Õhtuleht	September	Estonia päästetööde juht: samas mastaabis katastroof on Soome lahel pidevalt võimalik
77	Estonian	Õhtuleht	February	LNG: Eesti ja Soome otsivad üksmeelt
78	Estonian	Õhtuleht	July	Kantsler arvustab lennusalga valvendude lõpetamist
79	Estonian	Postimees	November	Kostub plahvatusi: miinituukrid lõhkavad Tallinna lahes
80	Estonian	Postimees	September	Läänemere põhjas olevad uppunud sõjalaevad võivad ajalookäsitlust muuta
81	Estonian	Postimees	September	Mattias Turovski: merede poolt, ülepüügi vastu
82	Estonian	Postimees	September	Silvia Lotman: miks sinivetikas meie vetes vohab?
83	Estonian	Postimees	June	Juhtkiri: Läänemere seisund- kas nutta või rõõmustada?
84	Estonian	Postimees	February	Rolls Royce hakkab Läänemerel katsetama meeskonnata kaubalaeva
85	Estonian	Postimees	January	Aleksander Laane: fosforist teadmistepõhiselt
86	Estonian	Postimees	December	Ministeerium: heitvesi peab olema ohtlikest ainetest sama puhas kui merevesi
87	Estonian	Postimees	December	Paldiski lõunasadam süvendati 25 miljoniga suurtele tankeritele sobivaks
88	Estonian	Postimees	November	Läänemere laevafirmad vaatavad tulevikku läbi mustade prillide
89	Estonian	Postimees	November	Prognoos: Soomel ja Rootsil on ühine merekaitsesüsteem aastal 2023
90	Estonian	Postimees	October	Erik Laidvee: merevaigutee taastamine
91	Estonian	Postimees	September	Tallinna ja Helsingi vahelise püsiühenduse tasuvust hakatakse uurima
92	Estonian	Postimees	September	Allan Kiil valiti Läänemere sadamate organisatsiooni aseesimeheks
93	Estonian	Postimees	September	Läänemerre jõudnud tapjabakter nõudis inimelu
94	Estonian	Postimees	August	Pentus-Rosimannus sõidab Soome mere puhastamist õppima
95	Estonian	Postimees	July	Osapooled leppisid kokku Läänemere gaasitoru ajakavas
96	Estonian	Postimees	June	Soome kardab Läänemere naftareostuse lähenemist
97	Estonian	Postimees	June	Eutrofeerumine- kole sõna, jubedad tagajärjed
98	Estonian	Postimees	July	Enn Kreem: need neetud hinnatõstjad
99	Estonian	Postimees	October	Laevafirma: Stockholmi kandis karile sõitnud Kertu oli regulaarsõidul

100	Estonian	Postimees	December	Tallink toobki Sea Wind'i Eesti-Soome liinile
101	Estonian	Postimees	June	Marian Manni: tavaline olukord
102	Estonian	Postimees	February	Ilvese hinnangul ei tähenda Soome lahe kaitse inimtegevuse piiramist
103	Estonian	Postimees	June	Soome laht saab veel ühe turvasüsteemi
104	Estonian	Postimees	November	Peterburi keskkonnakaitsjad tõendasid reovee jõudmist Soome lahte

APPENDIX 2

Full screenshot from QDA Miner software. On the leftside bar boxes on list of cases, case variables and list of coding (keywords, themes and stakeholders) can be seen. The coding highlights the paragraph it applies to on the right side.

The screenshot displays the QDA Miner interface. The main window shows a document titled "Muinastulede õõ korraldaja: prügi ärge endast maha jätke" dated 30. august 2014, 08:00. The document text is as follows:

Muinastulede õõ korraldaja: prügi ärge endast maha jätke
 30. august 2014, 08:00

Täna õhtul stüdatakse Eesti randades sadu lõkkeid, tähistamaks muinastulede ööd. Korraldajad kutsuvad seoses Soome lahe aastaga kõiki mõtlema sellele, kui ohustatud on meie Läänemeri, selle rannad ja lashed.

"Paneme kõikidele lõkete süütajatele südamele, et põletataks vaid puitu, ei jäetaks prahti randadesse vedelema ja pärast üritust võetaks endaga kaasa kõik loodusele mittekuuluv. Enist tähelepanu palume üritusel osalejatel pöörata küünaldele ja tõvikutele, et tuletõrjega seotud prügi ei jääks randa. Taevakalderaid, õhupalle ja ilutulestikku palume mitte kasutada," ütleb mere äärde kutsuja Mairoid Vaik.

Loodetavasti koristabki mõistlik rahvas enda järelt kõik rannale laotatud teeküünalakestad, joogitaarast ja muust prahist rääkimata, ning araldi "Teeme ära!" talguid Läänemere puhastamiseks pole vaja. Seda enami, et see kampaania on pilgu suunanud hoopis Vahemerele.

"Teeme ära!" üks eestvedajaid Agni Kaldma meenutab, et malkuus toimus kümnes Vahemere ääres riigis suur koristusaktioon. "Korrasitati rannikujoon, sukelidujad tõid merest sodi välja. Hästi aktiivset tegeldi sellega Kreekas ja Horvaatias. Turistidena oleme muidugi harjunud, et Vahemere ääres on kõik ilus, aga see on petlik. Prahti on rannas palju, rääkimata rikutud merepõhjast," selgitab Kaldma. Vahemere maade talgupaev toimub ka tuleval kevadel. Kaldma loodab, et taolised üritused on innuastuseks ka eestlastele.

The sidebar on the left contains the following sections:

- CASES:** A list of cases including "Muinastulede õõ korraldaja: prügi", "Terve, 1. akt, 1. lüü, minna kindlalt", "Prognosis: näidata, teeme pool tuleb", "Olene Rontela ni lühikell", "El'nyak Venemaa õhuväe lennuväljad liiguvad", "Läänemeri Lääri piiri lähedal tuvast", "Vene sõjajätku: aldivaas baatid", "Mereuueenergia osas soovitatud", "Eesti ja Rootsi valitsused peavai", "Läänemeres märgab vaala", "Ilmaorust-suveosaja jätkudes", "Tallinn saarim laev Austraaliasse, 1", "NATO võib eesti väes läbi minnõõ", "Sõnne-lehti kirj. jaks. lae-ep'berg", "Läänemere põhjast proovitakse va".
- VARIABLES:** A list of variables including "FILE", "COUNTRY", "NEWSPAPER", "MONTH", "August".
- CODES:** A list of codes including "Environment", "Economy", "Society", "Culture", "Politics", "Security", "Co-operation", "Keyword", "Baltic Sea", "Baltic Sea", "Gulf of Finland", "HELCOM, Helsinki Comm".

The main window also shows a toolbar with various editing and navigation tools, and a status bar at the bottom indicating the current page is 1 of 72.

