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THE ENVIRONMENTAL REPORT ON THE DRAFT SOUTH BALTIC CROSS-BORDER COOPERATION PROGRAMME 2014–2020

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TABLE OF CONTENTS

LIST OF TERMS AND ABBREVIATIONS USED IN THE REPORT

B(a)P – Benzo(a)pyrene

BSPA - Baltic Sea Protected Areas

CO_2 - carbon dioxide

CAFE Directive - Directive 2008/50/EC on ambient air quality and cleaner air for Europe

Waste Framework Directive - Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

Floods Directive - Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood

Birds Directive - Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

SEA Directive - Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programs on the environment

Habitats Directive - Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

Environmental Liability Directive - Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage

Urban Waste Water Directive - Council Directive 91/271/EEC of 21 May 1991 on Urban Waste Water Treatment

EEA - European Environment Agency

GDOŚ - General Directorate for Environmental Protection (GDEP) (Poland)

GIOŚ - Chief Inspectorate for Environmental Protection (Poland)

GUS - Central Statistical Office (Poland)

JCWPd – Groundwater bodies

SME - small and medium-sized enterprises

NO_x - nitrogen oxides

NUTS - Nomenclature of Territorial Units for Statistics

RES - renewable energy sources

PI - Priority Investment of the Programme

PLB - Special Protection Areas

PLH – Special areas of conservation

$PM_{2.5}$ - particulate matter with an aerodynamic diameter of up to 2.5 µm

PM_{10} - particulate matter with an aerodynamic diameter of up to 10 µm

The Programme - the South Baltic Cross-Border Cooperation Programme 2014-2020

Project that always have significant effects on the environment - these are projects listed in Annex I of Directive 2011/92/EU of 13.12.2011 on the assessment of the effects of certain public and private projects on the environment[1]. Such types of projects are subject to environmental impact assessment procedure.

Project likely to have significant effects on the environment - these are projects listed in Annex II of Directive 2011/92/EU of 13.12.2011 on the assessment of the effects of certain public and private projects on the environment [2]. Such types of projects may (but not have to) be subject to environmental impact assessment procedure.

SO_x - sulfur oxides

SO_2 - sulfur dioxide

SOPO – Landslide Protection System (Poland)

EU - The European Union

EIA Act - the Act of 3 October 2008 on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment (Journal of Laws No. 199, item 1227, as amended.) (Poland)

[1] In Poland, listed in § 2 of the regulation of the Council of Ministers of 9 November 2010 on projects likely to have significant effects on the environment (Journal of Laws No. 2013, item 1397, as amended).

[2] In Poland, listed in § 3 of the regulation of the Council of Ministers of 9 November 2010 on projects likely to have significant effects on the environment (Journal of Laws No. 2013, item 1397, as amended).

SUMMARY[3]

1. INTRODUCTION

The aim of the Environmental Report on the draft South Baltic Cross-Border Cooperation Programme 2014–2020, in accordance with the applicable rules and arrangements, is a comprehensive analysis of the potential impact on specific elements of the environment (as provided for in the Action Programme), assessment of the occurrence of cumulative impacts, as well as the analysis of the applicability of alternative solutions, and the need to introduce compensatory measures.

The South Baltic Cross-Border Cooperation Programme 2014-2020 (hereinafter referred to as the Programme) is one of the European Territorial Cooperation (ETC) programmes implemented in the 2014-2020 perspective. The Programme will cover areas with a total area of 118.5 thousand km^2, that are presented in the table below.

Table 1 Geographical scope of the South Baltic Cross-Border Cooperation Programme 2014-2020

Country	NUTS III
Denmark	Bornholm
	Østsjælland
	Vest- og Sydsjælland
Germany	Rostock, Kreisfreie Stadt
	Landkreis Rostock
	Vorpommern-Rügen
	Nordwestmecklenburg
	Vorpommern-Greifswald
Lithuania	Klaipedos
	Telšiai
	Tauragė
Poland	Koszaliński
	Stargardzki
	Miasto Szczecin
	Szczeciński
	Elbląski
	Słupski
	Trójmiejski
	Gdański
	Starogardzki
Sweden	Kalmar län
	Blekinge län
	Skåne län
	Kronoberg län

[3] In order to facilitate reference to the Report, its summary is presented in the structure of the particular chapters.

The objective of the Programme is to increase the 'blue' and 'green 'growth potential of the South Baltic area through cross-border cooperation.

The Programme will implement thematic objectives and investment priorities set out in relevant European regulations on the European Regional Development Fund [4].

The Programme provides support of activities in the following priority axes and investment priorities:

PRIORITY AXIS 1: Strengthening international activeness and innovation capacity of the South Baltic blue and green economy

1. Investment Priority 3 (b) - developing and implementing new business models for SMEs, in particular with regards to internationalisation
2. Investment Priority 3 (d) - supporting the capacity of SMEs to grow in regional, national and international markets, and to engage in innovation processes

PRIORITY AXIS 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth[5]

1. Investment priority 6 (c) – conserving, protecting, promoting and developing natural and cultural heritage
2. Investment priority 6 (f) - promoting innovative technologies to improve environmental protection and resource efficiency in waste sector, water sector and with regard to soil, or to reduce air pollution

PRIORITY AXIS 3: Improving cross-border connectivity for a functional blue and green transport area

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[4] 1. Regulation (EU) 1299/2013 of the European Parliament and of the Council of 17 December 2013 on specific provisions for the support from the European Regional Development Fund to the European territorial cooperation goal

2. Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006

[5] The terms:

- **'Green Growth'** shall describe a path of economic growth, which utilises natural resources in a sustainable manner. It means fostering economic development while ensuring preservation of natural resources and environmental services on which the well-being of the future generations relies.
- **"Blue Growth"** shall mean "the economic development based on the use of the economic potential of the oceans, seas and coasts for sustainable growth and jobs, to be developed in harmony with the marine environment.

Investment priority 7 (c) - developing and improving environment-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility

PRIORITY AXIS 4: Boosting human resource capacities for the area's blue and green economy

Investment Priority 8 - promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training

PRIORITY AXIS 5: Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth

Investment Priority 11 – enhancing institutional capacity of public authorities and stakeholders and efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions

The Report has been prepared in line with the methodology agreed with the Ministry of Infrastructure and Development of the Republic of Poland. A detailed description of the Report methodology is presented in Annex 1 to the Report. The key elements of this methodology are presented in the description of particular sections of the Report.

2. LEGAL BASIS AND SCOPE

Draft Scoping Report was evaluated in accordance with the Polish legislation i.e. in compliance with the Act of 3 October 2008 *on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment*[6], which contains a transposition into Polish legislation of the Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 *on the assessment of the effects of certain plans and programmes on the environment* [7]. Then, under arrangements with the competent authorities of countries participating in the Programme, the Scoping Report developed in this way has been complemented by other essential elements resulting from legal provisions in force in those countries. In compliance with legislation and agreements, impact on all elements of the environment was analysed in the course of the Report, including among others impact on: humans, fauna, flora, water, air, soil, landscape, climate, natural resources, historical heritage objects, material goods, including

[6] Journal of Laws no. 199, item 1227, as amended.
[7] Official Journal of the European Communities L197/30 of 21.07.2001 .

the interrelationship between the above mentioned elements of the environment by identifying the degree and type of interactions. In particular, the Report analyses impact of the Programme on protected areas, including Natura 2000 sites.

3. Analysis of the South Baltic Cross-Border Cooperation Programme 2014-2020

Programme Analysis was the starting point for the study. It covered the basic structure of the Programme, and based on this information from broad formulation of the support areas conclusions were drawn on specific activities that can be supported by this document, in order to clarify their possible impact on the environment.

The Programme analysis also examines the internal cohesion of the Programme. This analysis showed overall cohesion of the Programme with a varying degree of compliance.

From the analysis of the basic EU documents related to the Programme it can be concluded that the Programme meets objectives of these documents to the extent its financial scope allows.

Similarly, on the basis of the analysis it was found that the objectives and actions expected to be implemented under the Programme are consistent with the basic strategic papers of all countries participating in the Programme.

4. Analysis of the state of the environment in the Programme eligible area

The key issues and environmental hazards in the Programme eligible area were identified based on the available materials (mainly at the international level including the European Environment Agency, the Secretariat of the Helsinki Commission etc.).

Their current state was also identified. On the one hand, it should serve such a formation of the Programme to maximise its use in order to improve state of the environment. On the other hand, it should serve such a formation of the Programme to enable environmental impact assessment and identification of any significant negative impacts, and to propose measures that will minimise this impact, indicate alternative and possible compensating actions. This analysis was also used to determine criteria for selecting projects to be funded under the Programme.

The analysis of the environment covered all its elements, in particular: nature and biodiversity, climate change, resources, waste and soil, quality of air, water and soil, impact on human health, flood and drought prevention issues and historical heritage objects.

Generally, it can be concluded that in terms of natural and landscape values the Programme eligible area belongs to the most valuable regions of the countries participating in the Programme, with a

large share of Natura 2000 sites, BSPAs, national and landscape parks, and biosphere reserves by UNESCO. It is also rich in terms of the number of historical heritage objects.

However, there are serious problems for the environment such as: loss, fragmentation and change of habitats, degradation of landscape features, increasing influence of weather events associated with climate change, waste management problems, air pollution (especially in areas of some cities), problems with exposure of population to noise, pollution of surface, sea and inland waters, threats to groundwater, water management problems (floods and droughts), landslide risk. Negative events occur at different scales in different countries.

5. THE ENVIRONMENTAL REPORT

The analyses included detailed assessment of possible impact that all support areas envisaged within the Programme may have on particular elements of the environment, including: humans, fauna, flora, water, air, soil, landscape, climate, natural resources, historical heritage objects and material goods. The assessment was based on previously developed evaluation criteria that take into account condition of the environment and its major problems, the possible negative impact and description of projects that can be supported by the Programme, as well as the goals of the strategic documents of the EU and the countries participating in the Programme.

Detailed analyses have been performed for each project type that was identified as potential that is likely to be implemented under the Programme. They are presented in Appendix 4, and the summary is shown in the main part of the Report.

It should be emphasised that, given the general nature of the Programme, the presented hypothetical impacts can be showed only in a general way, and the specific impacts will depend on the location and characteristics of projects proposed for funding under the Programme.

The analyses showed, that the Programme's negative impact on the environment may occur during the implementation of projects related to renewable energy sources. Because, as noted in the Programme, they will be implemented on a small scale, their impact on the environment may be small as well. They can relate to impacts on the marine and terrestrial environment, and especially on biodiversity, fauna, flora and may affect the integrity of the protected areas. In terms of effects on air quality, climate, and human health, such type of projects will mainly have a positive impact. It will be linked to the replacement of the conventional energy based on fossil fuels, which involves the reduction of emissions, including emission of greenhouse gases. Negative impacts may be particularly associated with effects on marine and terrestrial ecosystems.

Positive impacts will characterise projects aiming at transport efficiency improvement, which will primarily serve the people. However, by improving and increasing the attractiveness of public

transport the projects are likely to have impact on fuel consumption and thereby reduce adverse emissions of air pollutants and greenhouse gases. Increasing mobility in the region and (as a consequence) developing tourism may lead to increased pressures on the environment.

Although a number of projects under Axis 1, 4 and 5 will be related to the environment only to a small extent, it generally will have an impact on raising the environmental awareness of business, public administration and society, and that will be positive. However, attention should be paid to this element when selecting projects to maximise their use for the good of the region.

Another group of projects implemented under the Programme will be related to the protection and promotion of natural and cultural heritage. They will have a positive impact associated with an increase in environmental awareness, management of protected and cultural heritage areas, and increase in activity of the region's population. On the other hand, tourism development, which is the result of the mentioned activities, can increase pressure on the environment.

ASSESSMENT OF THE CUMULATIVE IMPACTS

Cumulative effects of the analysed Programme are defined as changes in the environment caused by the influence of actions proposed in the Programme in conjunction with other existing effects and impacts of projects to be implemented in the future.

The analysis of the impacts that the Programme is likely to have on the environment, and that can be combined with other effects is presented in the sheets of the in-depth analysis constituting Appendix 4 to the Report.

The Programme has a general nature and does not clarify location of projects for support. In this situation we can only assume the accumulation of interactions is possible if projects are located within the existing or planned in the future cumulative impact areas of the existing and/or planned infrastructure.

GIS software was used to identify possible areas of cumulative impacts. By applying maps of varying content, it is possible to identify sites of potential accumulation of effects.

ANALYSIS OF THE POTENTIAL CROSS-BORDER IMPACT

As part of works on the Report, the possibility of cross-border environmental impacts was analysed both between countries participating in the Programme, as well as cross-border impact of the Programme on the neighbouring countries. Identification of nature and scale of potential transboundary impacts is extremely difficult due to a general wording of most areas of support, and lack of indication of location of individual projects that can receive financial support for implementation. All types of projects included in the Programme have been analysed during the

Report's development, and it was concluded from the analysis that at this stage it is not possible to determine or exclude such impacts.

Given the above, it is not possible to make final evaluation of the potential cross-border impacts at the stage of Programme's strategic impact assessment. However it may be required during environmental impact assessment carried out for individual projects, but taking into account the exemplary projects presented in the Programme it is very unlikely to happen. However, it can be assessed that their occurrence is unlikely.

THE RESULTS OF ANALYSES OF RESEARCH ISSUES

In order to determine the impact of the Programme on the individual elements of the environment, and its overall impact on the realisation of a sustainable development policy, a wide range of specific tests was carried out.

These related primarily to evaluation the Programme from the perspective of: complementarity, compatibility with the principles of sustainable development, adequacy with regard to the needs (especially environmental), minimisation of negative impacts, relevant criteria for project selection, compliance with the objectives of national and EU policies, effectiveness of the proposed actions, synergies, etc.

6. ASSESSMENT OF THE EFFECTS IN THE ABSENCE OF IMPLEMENTATION OF THE PROGRAMME AND THE BENEFITS OF ITS IMPLEMENTATION

Assessment of the lack of implementation of the Programme included analysis of share of funds allocated to environmental protection in relation to the total funds planned for each priority axis in the Programme. It was estimated that about EUR 23.8 million have been allocated to environmental protection. This represents about 30% of all funds allocated to the Programme (without technical assistance).

Although some programming activities may have negative impact on the environment, especially in the use of renewable energy resources (wind energy onshore and offshore, geothermal energy), the general impact of the Programme on the environment will be positive.

It is important to keep in mind that the Programme (given its objectives, nature and scope of financing) cannot solve all environmental problems in the region and can only be complementary to other regional, national or local programmes.

In the absence of implementation of the Programme, the activities covered by the Programme will not be performed, or will be implemented in a much smaller scale with the support of other funds.

In particular, it may have impact on the following:

- slower rate of improvement of nature conservation status in the region;
- limitation of progress of the rate of the Baltic Sea water quality improvement;
- improvement of local air quality in terms of pollution in areas of intensive residential development;
- slower rate of greenhouse gas emissions reduction;
- pace of investment in green and blue infrastructure;
- public access to the infrastructure of the leisure industry;
- less progress in the protection of natural and cultural heritage.

Analysis of the effects of non-implementation of the Programme may lead to conclusion that the failure to execute investments supported in the document may induce primarily negative effects, despite the fact that some activities, as shown in the analysis, can simultaneously have a negative impact on some elements of the environment.

In conclusion, it can be said, that achieving goals described in the Programme is favourable to natural, social and economic environment, when preserving the principle of sustainable development at the same time, and using environmental criteria for project selection that are proposed in this Report.

7. PRESENTATION OF ALTERNATIVES

Given the general nature of the Programme and the lack of project specification as to their location, the Report presents both protected areas and possible locations of cumulative impacts. This creates the possibility of an approximate evaluation of the use of alternatives in order to eliminate or reduce negative impacts in given areas of projects to be proposed for implementation. It could be used in the selection of projects or their variants at the stage of Programme implementation.

Currently, the following options can be considered an alternative to the currently proposed version of the Programme:

- Lack of implementation of the Programme, analysed in Section 6. The analyses show that it is definitely detrimental to the environment and nature protection.
- Change of Programme in order to increase allocation of funds (within this document) for protection of the environment and nature, however, it should be taken into account that the main objective of the Programme is not only to protect the environment.

8. PROPOSED METHODS OF EVALUATING THE EFFECTS OF THE PROGRAMME IMPLEMENTATION

During the implementation of the Programme the most important are the process control, and impact assessment of the tasks covered by the financial support. Therefore, it is necessary to develop proposals of the analysis methods that will allow to evaluate implementation process and control realisation of the objectives established under the Programme, i.a. through monitoring of the environmental effects and changes in the environment. However, the Programme is developed on a high level of generality, and it does not specify projects that will be funded, nor their exact location. Moreover, it should be noted that it has limited impact on solving environmental problems, due to its limited financial scope. In this situation, it is proposed that the Programme's impact on the environment was monitored at the level of individual projects implementation.

9. PROPOSED ENVIRONMENTAL CRITERIA FOR THE EVALUATION OF PROJECTS PROPOSED TO IMPLEMENTATION

Based on environmental analyses, the environmental criteria can be determined which should be met by projects selected for implementation under the Programme.

Meeting the criteria should ensure that the projects conducted under the Programme will be ecological, oriented to minimise burdensome impact on the environment and human health, or directly favourable to the environment.

When defining environmental criteria for projects implemented under the Programme, the general principles of "green public procurement" are applicable, which have been identified in recent years at the European level. It is also important to maintain compliance with existing or projected strategies and national programmes in the area of environmental protection.

When determining the selection criteria for projects the following two groups were distinguished:

general - criteria applicable to all projects, such as formal and legal (e.g. compliance with standards), planning and strategic (e.g. compliance with the relevant plans, strategies), technical and technological (e.g. use of best available techniques), social and health, natural and those related to environmental management;

specific - for particular groups of projects e.g. in the scope of construction of roads and car parks, optimisation of energy management of buildings, inclusion of environmental issues into educational projects, etc.

10. CONCLUSIONS AND RECOMMENDATIONS

The following general conclusions can be drawn on the basis of analyses performed in the course of works on the Environmental Report on the South Baltic Cross-Border Cooperation Programme 2014-2020:

- It is estimated, that the Programme as a whole will have a positive impact on the environment and will help to solve some problems related to improvement of the environment, however, some areas of support can have also a negative impact on particular elements of the environment. Specific conclusions in this regard are presented in relevant chapters of the Report.
- General formulation of the Programme and lack no list of specific projects that will be funded under the Programme, do not allow a more detailed assessment of the possible environmental impacts. Therefore, the Report has been developed at a similar level of generality as the Programme.
- Due to the limited funds of the Programme and its main goal to *improve an economic, social and territorial cohesion of the area and – at the same time – to contribute to the European Union's 2020 Strategy for smart, sustainable and inclusive growth,* no significant impact shall be expected on solving all environmental issues in the Programme eligible area. Actions in this area should be seen as complementary to other projects. Nevertheless, it seems that the Programme should stronger emphasise those measures from the scope of environmental protection which from the point of view of its status and problems would be most desirable in the region.
- The analysis of internal consistency showed overall internal compliance of the Programme. A large part of the investment priorities of individual axes is complementary and/or enhances one another, however, it would be advisable to coordinate the exemplary measures listed for each priority in section 2.A.6.1 with the categories of intervention from section 2.A.8 which includes allocation of resources to particular fields of intervention.
- Based on the analysis of the objectives of the EU strategic documents, it can be stated that the Programme achieves these goals.
- Similarly, analysis of the objectives of the strategic papers of Denmark, Lithuania, Germany, Poland and Sweden showed that the Programme generally achieves their goals.
- In order to reduce negative impact that the Programme may have on the environment, the following were proposed: rules for monitoring effects of the Programme implementation (Chapter 8), a set of recommendations for negative impact reduction or possible alternatives (for in-depth analyses of individual measures) as well as project selection criteria (Chapter 9). Given the generality of the Programme and the overwhelming number of so-called 'soft' actions, recommending compensatory measures at this stage was not considered reasonable.

- The analysis of the potential transboundary environmental impact of the Programme found no such effects. However, it should be taken into account that the Programme has a general nature and thus it is not possible to make final evaluation of the potential cross-border impacts at the stage of Programme's strategic impact assessment. However, it may turn out that, at the stage of the environmental impact assessment carried out for a specific project, such impacts will occur.

The summary of the specific conclusions and recommendations is presented in the table in section 10. They arise from the various studies described in more detail in the individual sections of the Report.

Moreover, the full version of the Report presents a number of recommendations relating to the Programme and to the process of selecting projects for implementation.

1. INTRODUCTION

1.1 THE PURPOSE OF THE REPORT

The aim of the Environmental Report on the draft South Baltic Cross-Border Cooperation Programme 2014–2020, in accordance with the applicable rules and arrangements, is a comprehensive analysis of the potential impact on specific elements of the environment (as provided for in the Action Programme), assessment of the occurrence of cumulative impacts, as well as the analysis of the applicability of alternative solutions, and the need to introduce compensatory measures.

1.2 CONTEXT

The South Baltic Cross-Border Cooperation Programme 2014-2020 (hereinafter referred to as the Programme) is one of the European Territorial Cooperation (ETC) programmes implemented in the 2014-2020 perspective. The programme will cover areas presented in the table below and presented on the map, a total area of 118,5 thousand km^2 .

Table 1 Geographical scope of the South Baltic Cross-Border Cooperation Programme 2014-2020

Country	NUTS III
Denmark	Bornholm
	Østsjælland
	Vest- og Sydsjælland
Germany	Rostock, Kreisfreie Stadt
	Landkreis Rostock
	Vorpommern-Rügen
	Nordwestmecklenburg
	Vorpommern-Greifswald
Lithuania	Klaipedos
	Telšiai
	Tauragė
Poland	Koszaliński
	Stargardzki
	Miasto Szczecin
	Szczeciński
	Elbląski
	Słupski
	Trójmiejski
	Gdański
	Starogardzki
Sweden	Kalmar län
	Blekinge län
	Skåne län
	Kronoberg län

Figure 1 Eligible area of the South Baltic Cross-Border Cooperation Programme 2014-2020 [Own work based on data from GUS, http://geoportal/gov.pl, http://epp.eurostat.ec.europa.eu]

The Programme objective is to increase the blue and green growth potential of the South Baltic area through cross-border cooperation.

The Programme will implement thematic objectives and investment priorities set out in relevant European regulations on the European Regional Development Fund [8].

The Programme provides support of activities in the following priority axes and investment priorities:

[8] 1. Regulation (EU) 1299/2013 of the European Parliament and of the Council of 17 December 2013 on specific provisions for the support from the European Regional Development Fund to the European territorial cooperation goal

2. Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006

PRIORITY AXIS 1: Strengthening international activeness and innovation capacity of the South Baltic blue and green economy

3. Investment Priority 3 (b) - developing and implementing new business models for SMEs, in particular with regards to internationalisation
4. Investment Priority 3 (d) - supporting the capacity of SMEs to grow in regional, national and international markets, and to engage in innovation processes

PRIORITY AXIS 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth[9]

3. Investment priority 6 (c) – conserving, protecting, promoting and developing natural and cultural heritage
4. Investment priority 6 (f) - promoting innovative technologies to improve environmental protection and resource efficiency in waste sector, water sector and with regard to soil, or to reduce air pollution

PRIORITY AXIS 3: Improving cross-border connectivity for a functional blue and green transport area

Investment priority 7 (c) - developing and improving environment-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility

PRIORITY AXIS 4: Boosting human resource capacities for the area's blue and green economy

Investment Priority 8 promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training

PRIORITY AXIS 5: Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth

[9] The terms:

- **"Green Growth"** shall describe a path of economic growth, which uses natural resources in a sustainable manner. It means fostering economic development while ensuring preservation of natural resources and environmental services on which the well-being of the future generations relies.
- **"Blue Growth"** shall mean "the economic development based on the use of the economic potential of the oceans, seas and coasts for sustainable growth and jobs, to be developed in harmony with the marine environment.

Investment Priority 11 – enhancing institutional capacity of public authorities and stakeholders and efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions

1.3 PROBLEMS, UNCERTAINTIES AND LACK OF INFORMATION

The development of this Report encountered difficulties in obtaining some information showing in a comprehensive and equivalent manner the current state of the environment in all parts of the area belonging to different countries participating in the Programme. Therefore, analysis of the current state of the environment seeks to rely on the international materials such as information of the European Environment Agency, the Secretariat of the Helsinki Convention, etc. The issue also related to the objectives, priorities and activities implemented in particular countries.

Another area of uncertainty appearing in the course of the Report is the generality of the Programme and the lack of specification of the support areas. Because it is impossible to assess the environmental impact if the project types and location are unknown, for the purpose of the Report an attempt was dome to hypothetically determine the types of projects that can be supported by the Programme. It was done with consideration of lessons learned from the previous Programme, and other various programmes developed at the regional level.

The Report takes into account the above conditions, and the presented assessment relates to areas of support proposed under the Programme. It should be emphasised that more detailed analysis and assessment of the impact on individual components of the environment can be made only after the determination of final location, method of implementation and technology of objects' performance. It can be made at the stage of obtaining decision on environmental condition and permit for project implementation.

A particular problem in this regard is the assessment of the impact of projects on the use of renewable energy sources (wind energy offshore and onshore, and geothermal energy) that can be implemented under axis 2 due to the lack of characteristics and location of potential projects.

in the absence of specified type and location of projects, similar problems are caused by the assessment of possible cross-border impacts on the environment.

Detailed risk analysis was conducted when drafting the Methodological Report, and this is where risk elimination solutions are described.

1.4 METHODOLOGY

A detailed description of the Report methodology (agreed with the Ministry of Infrastructure and Development) is presented in Appendix 1 to the Report.

2. LEGAL BASIS AND AGREEMENTS RELATED TO THE SCOPE OF THE REPORT

According to the minutes of the Joint Programming Committee meeting held in Ostróda on the 18th of June 2013 the strategic environmental assessment of the South Baltic Cross-Border Cooperation Programme will be carried out by the Ministry of Infrastructure and Development - the Programme Managing Authority.

Draft Scoping Report was evaluated in accordance with the Polish legislation i.e. in compliance with the Act of 3 October 2008 *on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment*[10], which contains a transposition into Polish legislation of the Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 *on the assessment of the effects of certain plans and programmes on the environment*.[11] Then, under arrangements with the competent authorities of countries participating in the Programme, the Scoping Report developed in this way will be complemented by other essential elements resulting from legal provisions in force in those countries. In accordance with the aforementioned law, strategic environmental assessment is required for policies, strategies, plans or programs in the field of industry, energy, transport, telecommunications, water management, waste management, forestry, agriculture, fisheries, tourism and land use, developed or adopted by the authorities, set framework for future implementation of projects that are likely to have significant environmental effects. The Programme belongs to such documents, and therefore the authority drafting such a document, is required to draw up a corresponding Environmental Report.

The Report will include:

- an outline of the contents, main objectives of the draft document, and its relationship with other relevant documents,
- information on the methods applied in the Report,
- proposals related to the anticipated methods of analysing effects of the implementation of the draft document, and the frequency of analysis performance,
- information about the possible cross-border impact on the environment,
- a non-technical summary.

Moreover, the Report will determine, analyse and evaluate:

[10] Journal of Laws no. 199, item 1227, as amended.
[11] Official Journal of the European Communities L197/30 of 21.07.2001 .

- the current state of the environment and the likely evolution thereof without implementation of the draft document,
- the environmental characteristics of areas likely to be significantly affected;
- the existing environmental problems which are relevant to the draft document including, in particular, those relating to any areas protected under the Act of 16 April 2004 *on the conservation of nature*[12],
- the environmental protection objectives, established at international, Community or domestic level, which are relevant to the draft document, and the way those objectives and any environmental considerations have been taken into account during its preparation,
- the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long-term permanent and temporary, positive and negative effects) on the purposes and the subject of protection of Natura 2000 sites and the integrity of this area, as well as the effects on the environment, in particular on:
  - biodiversity,
  - humans,
  - fauna,
  - flora,
  - water,
  - air,
  - soil,
  - landscape,
  - climate,
  - natural resources,
  - historical heritage objects,
  - material goods,

  considering the interrelationship between the above-mentioned elements of environment, and interactions between these elements.

The Report will also present:

[12] Journal of Laws of 2013, item 627, as amended.

- solutions envisaged to prevent, reduce or offset any significant adverse effects on the environment resulting from implementing the draft document, in particular on the purposes and the subject of protection of Natura 2000 sites and the integrity of this area,
- alternatives to the solutions from the draft document, together with the reasons for selecting the alternatives dealt with, and a description of evaluation methods leading to this choice or explanation for the absence of alternative solutions, including any difficulties encountered due to technical deficiencies or gaps in modern knowledge.

In Poland, according to the aforementioned law, the scope and the level of detail was agreed with the General Director of Environmental Protection, Chief Sanitary Inspector and the directors of maritime offices in Szczecin, Gdynia and Słupsk.

In addition, arrangements were made on the scope and the level of detail of the Report:

In Denmark with:

- Legal Unit, Danish Nature Agency, Ministry of Environment
- South Baltic programme National Coordinator, Regional Municipality of Bornholm

In Germany with:

- Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern
  Landesarchäologie

In Lithuania with:

- Ministry of the Interior of the Republic of Lithuania

In Sweden with:

- The County Administrative Board in Blekinge,
- The Regional Council in Kalmar County,
- No input has been delivered from the County Administrative Board in Kalmar, Kronoberg or Skåne,

The Swedish Environmental Protection Agency has decided not to provide any opinion.

Comments received from the competent authorities on the agreed scope of the Report are presented in the table below.

Table 2 Indications and comments of the competent authorities of the countries participating in the Programme.

Name of the Institution	No.	The content of the comments
POLAND - GENERAL DIRECTOR FOR ENVIRONMENTAL PROTECTION (30.01.2014)	1.1	According to the presented assumptions, the activities covered by the draft Programme, especially in the field of new technological developments, tourism development, environmental protection as well as waste management and transport development, may have form of actions or activities that are likely to have significant environmental effects within the meaning of the Act on EIA.
	1.2	Given the framework nature of the presented assumptions, the lack of a list of projects and project selection criteria, and the lack of spatial indications, the following recommendations are presented for the development of the environmental report.
	1.3	The Environmental Report, prepared in the course of the strategic environmental assessment, should fully comply with the requirements deriving from Article 51 paragraph 2 of the Act on EIA, under the conditions referred to in Article 52 paragraphs 1 and 2 of the above-mentioned law. It should be emphasized that the Report should refer to the full version of the proposed Programme and cover all the planned activities that are likely to have significant environmental effects. In accordance with Article 52 paragraph 1 of the EIA Act, the level of detail in analyses and recommendations carried out in the Report should be adjusted to the level of detail of the provisions of the draft document.
	1.4	During the preparation of the Report, the analysis should include other provisions related to this area of strategic, national and transnational documents, as well as provisions of their environmental reports (as far as strategic assessment was conducted).
	1.5	In view of the spatial range of the draft Programme, it is recommended to pay special attention to interactions that may occur in the border area of the project area, and to the potential cross-border effects on the territories of countries not covered by the draft Programme.
	1.6	The presentation of the spatial phenomena and interactions between them should

Name of the Institution	No.	The content of the comments
		be made in a graphic (maps) form.
	1.7	Development of the Report should take into account the guidelines of the European Commission on strategic environmental assessment in terms of integrating climate change and biodiversity.
POLAND - CHIEF SANITARY INSPECTOR (16.01.2014)	2.1	The Scoping Report shall consider Article 3 paragraph 2 of the Act of 3 October 2008 on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment (Journal of Laws of 2013, item 1235, as amended), which states that whenever the Act refers to the impact on the environment it shall also mean the impact on human health.
POLAND - MARITIME OFFICE IN SŁUPSK (22.01.2014)	3.1	The Environmental Report shall meet the requirements deriving from Article 51 paragraph 2 of the Act of 3 October 2010 on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment (Journal of Laws of 2008 No. 199, item 1227, as amended), considering the requirements set out in Article 52 of the Act.
	3.2	The Report shall, in particular: a) identify, analyse and assess the anticipated significant environmental effects resulting from the proposed use of the land, including impact on biodiversity, humans, water, soil, landscape, natural resources, historical heritage objects, material goods, and considering the interrelationship between the above mentioned elements of environment and interactions between these elements; b) present solutions envisaged to prevent, reduce or offset any significant adverse effects on the environment resulting from implementing the draft plan.
	3.3	In accordance with the requirements of Article 57 paragraph 2 of the EIA Act,

Name of the Institution	No.	The content of the comments
		where the planned execution of a document relates to marine areas, the authority competent to make opinions and agreements within the strategic environmental impact assessments shall also be the director of maritime office.
	3.4	Therefore, the local Authority reports that in addition to the information referred to in Article 51 paragraph 2 of the EIA Act, in relation to issues affecting Polish maritime areas referred to in the Act of 21 March 1991 on the Polish maritime areas and the maritime administration (Journal of Laws of 2013 item 934), the environmental Report shall include and refer to the following comments: • identify the impact of the provisions of the document on the marine environment, including natural features and designation purposes of marine Natura 2000 sites, as well as the integrity and cohesion of these areas; • provide solutions envisaged to prevent, reduce or offset any significant adverse effects on the environment resulting from implementing the document; • take into account existing and planned or proposed protected areas referred to in Article 6 of the Act of 16 April 2004 on Nature Conservation (Journal of Laws of 2013 item 627) located in marine areas and coastal zone; • take into account the effects of the implementation of the document on the coastal zone and the processes of sea-land interaction (the integrity of the marine and terrestrial ecosystems).
	3.5	The Report should refer to the full version of the proposed Programme and cover all the planned activities that are likely to have significant environmental effects, and not just the actions provided for financing.
	3.6	In addition, the analysis should take into account the impact (and the accumulation of impacts) associated with the existing, implemented or planned activities and projects in the area covered by the document, including activities and projects not covered by the draft document.

Name of the Institution	No.	The content of the comments
	3.7	In addition, the local Authority in accordance with Article 27a paragraph 2 of the Act of 16 April 2004 on Nature Conservation (Journal of Laws of 2013 item 627) supervises the marine Natura 2000 sites: • Pomeranian Bay PLB 990003 - partially, • Słupsk Bank PLC 990001 - in full, • Coastal Waters of the Baltic Sea PLB 990002 - partially. It is advisable to take into account in the Environmental Report - data and conclusions, worked out at the stage of preparing environmental documentation and draft conservation plans for the above mentioned Natura 2000 sites.
POLAND - MARITIME OFFICE IN GDYNIA (29.01.2014)	4.1	The Report shall be prepared in line with the requirements defined in Article 51 paragraph 2 of the Act of 3 October 2008 on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment, considering the impact of the Programme on the marine environment of the Gdańsk Bay and the Vistula Lagoon (including - the impact on Natura 2000 sites).
	4.2	Information included in the Report, in accordance with Article 52 paragraph 1 of the above mentioned Act, should be adjusted to the content and level of detail of the South Baltic Cross-Border Cooperation Programme 2014-2020. The Report should determine the cumulative impact of activities (planned to be implemented under the Programme) on the marine environment of the Vistula Lagoon and the Gdańsk Bay.

Name of the Institution	No.	The content of the comments
	4.3	Implementation of the Programme, i.a. through the promotion of underwater cultural and natural features as well as the development of tourism and port infrastructure, can contribute to the growth of tourism flows and transport traffic in the Gdańsk Bay and the Vistula Lagoon, which potentially will be associated with an increased pressure on maritime areas. Therefore, the Report must consider the impact of the Programme implementation on the marine environment, including the Natura 2000 sites.
POLAND - MARITIME OFFICE IN SZCZECIN (20.01.2014)	5.1	At the same time the local Authority reports that in addition to the information referred to in Article 51 paragraph 2 of the EIA Act, in relation to issues affecting Polish maritime areas referred to in the Act of 21 March 1991 on the Polish maritime areas and the maritime administration (Journal of Laws of 2013 item 934), the environmental Report shall include and refer to the following comments: Take into account existing and planned or proposed protected areas referred to in Article 6 of the Act of 16 April 2004 on Nature Conservation (Journal of Laws of 2013 item 627) located in marine areas and coastal zone.
	5.2	Cover all the planned activities that are likely to have significant environmental effects. In addition, the analysis should take into account the impact (and the accumulation of impacts) associated with the existing, implemented or planned activities and projects in the area covered by the document.
	5.3	Identify the impact of the draft document on the marine environment, including natural habitats, plant and animal species and their habitats, for which marine Natura 2000 sites were designated, as well as the impact on integrity and cohesion of these areas.

Name of the Institution	No.	The content of the comments
	5.4	In addition, the local Authority in accordance with Article 27a paragraph 2 of the Act of 16 April 2004 on Nature Conservation (Journal of Laws of 2013 item 627) supervises the marine Natura 2000 sites, Therefore, in view of Article 29 paragraph 1 of the above mentioned Act, preparation of the environmental documentation and draft conservation plans was started for the following Natura 2000 sites: • special protection areas - 'Pomeranian Bay' (area code PLB990003), 'Szczecin Lagoon' (PLB320009), and 'Kamieński and Dziwna Lagoon' (PLB320011); • areas of Community importance / special areas of conservation - 'refuge in the Pomeranian Bay' (area code PLH990002) and 'Mouth of the Oder River and the Szczecin Lagoon' (PLH320018). It is advisable to take into account in the Environmental Report - data and conclusions, worked out at the stage of preparing environmental documentation and draft conservation plans for the above mentioned Natura 2000 sites.
DENMARK - SOUTH BALTIC PROGRAMME NATIONAL COORDINATOR IN DENMARK (26.03.2014)	6.1	Scoping of the strategic environmental assessment in Denmark have to be in line with Statuary Act No. 939 of 03/07/2013 on environmental assessment of plans and programmes. The proposed content and analyses for this environmental assessment report are in line with the Danish legislation, and only one issue needs to be stressed, namely to include 'human health' in the list of areas to be assessed.
	6.2	The consultation process in Denmark of an environmental assessment report of a cross-border programme will be driven by the national coordinator appointed in the related programme, South Baltic programme. Besides the Danish Nature Agency the direct consultations will also address the Danish Environment Agency, Ministry of Transport, Danish Business Authority and the Danish Maritime Agency.
LITHUANIA	7.1	No specific comments

Name of the Institution	No.	The content of the comments
GERMANY – LANDESAMT FÜR KULTUR UND DENKMALPFLEG MECKLENBURG-VORPOMMERN LANDESARCHÄOLOGIE (02.04.2014)	8.1	In general, the expression ‘‘historical heritage objects’’ does not necessarily include the archaeological heritage; therefore it is essential either to give a detailed explanation of the term ‘‘historical heritage objects’’, so that it becomes clear the archaeological heritage is included, or to add the term ‘‘archaeological heritage’’ to the list
	8.2	Concerning the sea basin, the coastal zone and the underwater habitats, it is absolutely essential to refer to the Code of good practice for the management of the Underwater Cultural Heritage in the Baltic Sea Region (COPUCH, http://www.nba.fi/fi/File/701/copuch-ohjeistus.pdf), which defines common standards and aims for the Baltic Sea States
	8.3	Scope and level of detail will be subject to an individual definition in accordance with the level of planning; in general, it is to distinguish between archaeological heritage sites, that may not be altered because of their outstanding scientific and historical significance, and such archaeological heritage sites, that may be altered after obtaining a permission
	8.4	The possible impact on the archaeological heritage has to be determined, analysed and evaluated in accordance with the Gesetz über die Umweltverträglichkeitsprüfung (UVPG, http://www.gesetze-im-internet.de/bundesrecht/uvpg/gesamt.pdf)
	8.5	Information about archaeological heritage sites in Mecklenburg-Vorpommern and the appropriate measures for their protection is obtainable from the Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern, Domhof 4/5, 19055 Schwerin, www.kulturerbe-mv.de.

Name of the Institution	No.	The content of the comments
SWEDEN	9.1	No specific comments

In the development of the Environmental Report guidelines were used for strategic environmental assessments[13] and guidance on integrating climate change and biodiversity into strategic environmental assessment[14].

The Report has covered analysis of the EU strategic documents in terms of the Programme's compliance with these documents, particularly in the scope of implementation of environmental goals. and analysis of more important strategic documents of countries participating in the Programme (provided by those countries).

[13] Handbook on SEA for Cohesion Policy 2007 – 2013, GRDP, 2006 http://ec.europa.eu/regional_policy/sources/docoffic/working/doc/sea_handbook_final_foreword.pdf

[14] Guidance on Integrating Climate Change and Biodiversity into Strategic Impact Assessment, EU, 2013 http://ec.europa.eu/environment/eia/pdf/SEA%20Guidance.pdf,

3. ANALYSIS OF THE PROGRAMME

3.1 THE VISION, OBJECTIVES AND MEASURES PROPOSED IN THE PROGRAMME

The South Baltic Cross-Border Cooperation Programme 2014-2020 is one of the European Territorial Cooperation programmes that will be implemented in the 2014-2020 perspective.

The objective of this Programme is:

To increase the 'blue' and 'green 'growth potential of the South Baltic area through cross-border cooperation'

The Programme will be implemented within the six priority axes that include thematic objectives and investment priorities set out below:

PRIORITY AXIS 1: Strengthening international activeness and innovation capacity of the South Baltic blue and green economy

Investment Priority 3 (b) - developing and implementing new business models for SMEs,[15], in particular with regard to internationalisation

Investment Priority 3 (d) - supporting the capacity of SMEs to grow in regional, national and international markets, and to engage in growth and innovation processes

PRIORITY AXIS 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth[16]

Investment Priority 6 (c) – conserving, protecting, promoting and developing natural and cultural heritage

Investment priority 6 (f) promoting innovative technologies in to improve environmental protection and resource efficiency in the waste sector, water sector and with regard to soil, or to reduce air pollution

PRIORITY AXIS 3: Improving cross-border connectivity for a functional blue and green transport area

[15] SME - small and medium-sized enterprises

[16] The terms:

- **'Green Growth'** shall describe a path of economic growth, which utilises natural resources in a sustainable manner. It means fostering economic development while ensuring preservation of natural resources and environmental services on which the well-being and prosperity of the future generations rely,
- **'Blue Growth'** shall mean "the economic development based on the use of the economic potential of the oceans, seas and coasts for sustainable growth and jobs, to be developed in harmony with the marine environment.

Investment Priority 7 (c) - developing and improving environment-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, river and sea transport, ports, and multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility

PRIORITY AXIS 4: Boosting human resource capacities for the area's blue and green economy

Investment Priority 8 (ETC) - promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training

PRIORITY AXIS 5: Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth

Investment Priority 11 (EWT) - enhancing institutional capacity of public authorities and stakeholders and efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions

PRIORITY AXIS 6: Technical assistance

In view of the general nature of the Programme, from the point of view of assessing its potential impact on the environment, the problem was to clarify the examples (that would fulfill actions specified in the specific priorities), that would be subject to evaluation, because it would be difficult to approach this issue only from the point of view of the objectives and priorities. To solve this problem and create a basis for the evaluation, the characteristics of the Programme were presented in the form of a table that determines priority axes and investment priorities and all the areas set out for implementation under the Programme. Appropriate codes were assigned to them, which identify them in relation to the above mentioned elements of the Programme.

This tool was used for the following purposes:

- preliminary assessment ('screening') of measures to be supported under the South Baltic Cross-Border Cooperation Programme 2014-2020; through a preliminary analysis of the impact area, type of effects and territorial scope. On this basis areas of support have been identified that undoubtedly will have a positive impact on the environment, and their approximate scope of interactions has been defined. Due to the positive assessment, these areas will be taken into account in further analyses in a limited way;
- grouping relevant support areas with common characteristics, which for simplicity could be jointly considered in terms of their potential impact on the environment and assignment of specific types of concrete projects to them. The results are shown in Table 2. All the grouped activities to be funded under the Programme have relevant references to the individual

elements of the Programme. All analyses conducted in the Report will refer to the scheme presented in this table;

- classification of the areas of support with respect to the types of projects depending on whether they will require procedure of environmental impact assessment.

According to the adopted methodology for the preparation of the Programme's environmental impact assessment, all potential areas of support have been analysed in order to qualify them to one of the following groups of activities. The table below highlights them by corresponding colours:

- green colour shows areas of support that have a positive impact on the environment and will be examined in less detail in further analysis,
- yellow colour shows areas of support that may have a negative impact on the environment, however the impact is insignificant (such investments will not require environmental impact assessment procedure). The impact will depend on the type of projects and their location,
- orange colour shows areas of support likely to have significant effects on the environment[17]. Such types of projects may (but not have to) be subject to environmental impact assessment procedure,
- red colour shows areas of support that always have significant effects on the environment[18]. Such types of projects are subject to a mandatory environmental impact assessment procedure.
- no colour shows areas of support that have a neutral or an indirect positive impact on the environment.

[17] Listed in Annex II of Directive 2011/92/EU of 13.12.2011 on the assessment of the effects of certain public and private projects on the environment.
[18] Listed in Annex I of the above mentioned Directive.

Table 3 Description of the Programme and the potential fields of intervention in the environment.

Code (priority axis/ investment priority/ measure)	Investment Priority	The field of intervention, typical projects	Possible territorial coverage of impacts	Potential impacts on the environment
Priority Axis 1 Strengthening international activeness and innovation capacity of the South Baltic blue and green economy				
1.3b.1	Developing and implementing new business models for SMEs, in particular for internationalisation	Joint development and pilot implementation of innovative business models for internationalisation of blue and green sector SMEs	Depending on the range of activity	Generally no impact on the environment, but it will depend on the type of activity
1.3b.2		Market research for blue and green sector SMEs, their clusters and business support institutions in relation to the introduction of new services and products on international markets	International Markets	Actions may have an indirect positive impact, depending on the project under implementation.
1.3b.3		Activities (e.g. fairs, exhibitions, marketing and joint branding campaigns etc.) promoting products and services of blue and green sector SMEs from the Programme eligible area and on international markets.	Programme eligible area and international markets	Actions may have an indirect positive impact.
1.3b.4		Provision of products and services (e.g. cross-border	The entire	No impact on the

		training programmes, counselling, language courses, investment strategies etc.) to improve the capacity of blue and green sector SMEs to operate on international markets	Programme eligible area	environment, unless the activity concerns the environment.
1.3b.5		Development of internet-based tools to provide targeted information (e.g. through databases and information catalogues) and to facilitate regulatory procedures for activities of blue and green sector SMEs on international markets	The entire Programme eligible area	No impact on the environment.
1.3b.6		Awareness raising campaigns and general promotion actions encouraging international trade and business activities of blue and green sector SMEs from the South Baltic area - as an alternative/amendment to national operations.	Programme eligible area and international markets	Indirect positive impact may occur.
1.3d.1	Supporting the capacity of SMEs to grow in regional, national and international markets, and to engage in growth and innovation processes	Provision and testing of cross-border training and capacity-building services for blue and green sector SMEs in order to improve their innovation capacity.	Programme eligible area	Indirect positive impact may occur.
1.3d.2		Provision of business advisory services (e.g. training, market research, counselling etc.) to blue and green sector SMEs in introducing new services and products.	Programme eligible area	Indirect positive impact may occur.

2.3d.3		Arrangement of cross-border events to enable exchange of experience and stimulate innovation transfer between blue and green sector SMEs.	Programme eligible area	Indirect positive impact may occur.
2.3d.4		Development and testing of cross-border smart specialisation strategies and joint branding concepts for new products and services in the blue and green sectors of the South Baltic economy.	Programme eligible area	Indirect positive impact may occur.
2.3d.5		Development and testing of cross-border triple-helix cooperation models, platforms and networks with the participation of enterprises, research institutions, universities and public administration, dedicated to a better transfer and absorption of innovation by blue and green sector SMEs from the South Baltic area.	Programme eligible area	Indirect positive impact may occur.
Priority Axis 2 Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth				
2.6c.1	Conserving, protecting, promoting and developing natural and cultural heritage	Preparation and implementation of small-scale pilot investments enhancing blue and green tourism infrastructure and services (e.g. cross-border thematic routes, underwater nature trails, chains of marinas and small ports, etc.).	Depending on project type and location	Generally, it should have a positive impact on the environment as it will cause development of green and blue infrastructure.

2.6c.2		Joint events (e.g. events, fairs, marketing campaigns), publications, studies, and creation of cross-border strategies and products promoting the South Baltic area as a blue and green tourism destination.	Programme eligible area	Indirectly, this may have a positive impact on the environment.
2.6c.3		Inclusion of natural and cultural heritage sites in the networks and chains of blue and green tourism in the South Baltic area.	Programme eligible area	Indirectly, this may have a positive impact on the environment.
2.6c.4		Joint marketing in the South Baltic area as a blue and green tourism destination. Promoting cultural and natural assets of the South Baltic area, including land and underwater sites under formal protection.	Programme eligible area	Indirectly, this may have a positive impact on the environment.
2.6c.5		Capacity-building actions and joint campaigns enhancing management of natural and cultural heritage sites in the cross-border scale (including exchange of experience, transfer of knowledge and creation of network cooperation among authorities and administrations responsible for the management of natural and cultural heritage sites) in the South Baltic area.	Programme eligible area	Positive impact on all elements of the environment.
2.6c.6		Development of joint cross-border ICT tools on blue	Programme eligible	Indirectly, this may have a

		and green tourism attractions and accommodation facilities in the programme area.	area	positive impact on the environment.
2.6c.7		Exchanging know-how and promotion of Eco-Management and Audit Scheme as well as joint eco-labelling actions for environmentally friendly products.	Programme eligible area	Positive impact on all elements of the environment.
2.6f.1.a	Promoting innovative technologies in environmental protection and resource efficiency	Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in waste management (e.g. re-use, recycling, recovery), water management, heating, air protection)	Depending on project type and location	Positive impact on the elements of the environment, depending on the type of project and its location
2.6f.1.b		Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in production of energy from renewable sources (e.g. onshore wave and wind energy)[19]).	Depending on project type and location	Positive impact on the elements of the environment depending on the type of project. Negative impact on some elements of the

[19] According to the regulation of the Council of Ministers of 09.11.2010 (as amended) on projects likely to have significant effects on the environment, such installations located in marine areas of the Republic of Poland are one of the projects that are likely to always have a significant impact on the environment.

				environment is also possible.
2.6f.1c		Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in production of energy from renewable sources (e.g. offshore wind energy).	Depending on project type and location	Positive impact on the elements of the environment depending on the type of project. Negative impact on some elements of the environment is also possible.
2.6f.1d		Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in production of energy from renewable sources (e.g. solar energy) and renewable energy storage.	Depending on project type and location	Positive impact on the elements of the environment, depending on the type of project and its location
2.6f.1e		Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in production of energy from renewable sources (e.g. biomass).	Depending on project type and location	Positive impact on the elements of the environment depending on the type of project. Negative impact on some

				elements of the environment is also possible.
2.6f.1.f		Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in production of energy from renewable sources (e.g. geothermal energy).	Depending on project type and location	Positive impact on the elements of the environment depending on the type of project. Negative impact on some elements of the environment is also possible.
2.6f.2		Improving and coordinating sustainable energy networks (e.g. development and reorganisation of smart grids, virtual power plants, heating supply, integration of storage).	Depending on project type and location	Positive impact on the elements of the environment depending on the type of project. Negative impact on some elements of the environment is also possible.

2.6f.3		Joint cross-border studies, strategies and action plans to mitigate water and air pollution nuisance in the South Baltic area through the application of innovative green technologies.	Programme eligible area	Positive impact on the elements of the environment, depending on the type of project and its location
2.6f.4		Elaboration and testing of common cross-border standards in waste and water management, heating and air protection by public entities, in cooperation with universities, research centres, companies and cooperatives of farmers and residents.	Programme eligible area	Positive impact on the elements of the environment, depending on the type of project and its location
2.6f.5		Development and testing of innovative cross-border solutions aiming at decreasing the outflows of nutrients from small and diffuse sources in the catchment areas (basins).	The area of the Baltic Sea and inland waters	Positive impact on the marine and inland waters environment and biodiversity
2.6f.6		Elaboration of green policy strategies and patterns to overcome challenges and to mobilise regional opportunities for renewable energies and energy efficiency, including models for cooperation with energy service companies on comprehensive energy solutions.	Programme eligible area	Positive impact on all elements of the environment.

2.6f.7		Capacity building actions, transfer of knowledge and exchange of experience on innovative green technology solutions to improve efforts of different actors in protecting the water and air environment, contingency planning and promoting the resource efficiency.	Programme eligible area	Positive impact on all elements of the environment.
Priority Axis 3 Improving cross-border connectivity for a functional blue and green transport area				
3.7c.1	Developing environment-friendly low-carbon transport systems, including river and sea transport, ports, and multimodal links.	Preparation and deployment of cross-border transport greening measures, including small-scale (pilot) investments, to lower the environmental impact (footprint) of transport services and to increase their quality and interoperability.	Depending on project type and location	Positive impact on all elements of the environment.
3.7c.2a		Provision of solutions to enhance sustainability, density and quality of sea transport services (ferries) in the South Baltic area, including facilitation of new links between the Programme regions.	Depending on project type and location	Negative impact on the marine environment is possible.
3.7c.2b		Provision of solutions to improve density and quality of sustainable air transport services in the South Baltic area, including facilitation of new links between the Programme regions.	Depending on project type and location	Negative impact is possible, mainly on the noise.

3.7c.3		Preparation of studies addressing deficiencies in intermodal passenger and cargo services across the borders of the programme regions.	Programme eligible area	No impact.
3.7c.4		Joint development of smart mobility concepts decreasing the reliance on cars and trucks and better utilisation of public transport services (e.g. through mobility management schemes for less accessible areas and for areas suffering from negative demographic changes).	Programme eligible area	Positive impact on all elements of the environment.
3.7c.5		Joint development of solutions aiming at the use of more environmentally friendly means of transport.	Programme eligible area	Positive impact on all elements of the environment.
Priority Axis 4 Boosting human resource capacities for the area's blue and green economy				
4.8.1	Integrating cross-border labour markets, including focus on cross-border mobility, joint local employment initiatives and joint training.	Development, modification and testing of joint cross-border services connecting vocational and tertiary education graduates as well as employers in the blue and green economy sectors (e.g. cross-border job search platforms, multi-lingual job applications, cross-border employment fairs, employment advice centres, dedicated study profiles for blue and green sector companies).	Programme eligible area	No impact.

4.8.2		Provision of cross-border training programmes (e.g. in language and cross-cultural skills) and qualification courses for the labour force, including tertiary and vocational education graduates, to suit employment needs in blue and green economy sectors.	Programme eligible area	Indirect positive impact is possible.
4.8.3		Provision of tools or schemes for harmonisation and international recognition of professional or vocational qualifications in the blue and green economy sectors.	Programme eligible area	No impact.
4.8.4		Preparation and deployment of cross-border internships, apprenticeships and different forms of exchanges for the labour force aimed at acquiring qualifications necessary for blue and green sector professions in the Programme regions.	Programme eligible area	Indirect positive impact on the environment is possible.
4.8.5		Joint development of models and solutions supporting self-employment of university and college graduates in blue and green economy sectors.	Programme eligible area	Indirect positive impact on the environment is possible.

4.8.6		Transfer of knowledge and exchange of experience to improve efforts of labour market stakeholders in stimulating employment in the blue and green economy sectors of the South Baltic area.	Programme eligible area	Indirect positive impact on the environment is possible.
4.8.7		Information services for potential cross-border workers on legal requirements and working conditions in other countries of the South Baltic region.	Programme eligible area	No impact.
Priority Axis 5 Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth				
5.11.1	Promoting legal and administrative cooperation and cooperation between citizens and institutions.	Actions aiming at cross-border transfer of knowledge and exchange of experience regarding cooperation between citizens and institutions and local development challenges.	Depending on project type and location	Indirect positive impact on the environment is possible, if measures will be related to sustainable development.
5.11.2		Joint activities of local self-government administration/agencies and other institutions (e.g. NGOs) contributing to influencing regional, national and EU level policies and decisions affecting the local development.	Depending on project type and location	Indirect positive impact on the environment is possible, if measures will be related to sustainable development.

5.11.3		Joint awareness-raising actions among local actor groups to promote the cooperation in the field of culture, heritage and common identity of the South Baltic area.	Depending on project type and location	Positive impact on all elements of the environment.
5.11.4		Preparation and implementation of joint initiatives (cross-border programmes, trainings, workshops etc.), aimed at strengthening the networking and cooperation capacity of local actors.	Depending on project type and location	Indirect positive impact on the environment is possible, if measures will be related to sustainable development.
5.11.6		Preparation and deployment of measures increasing the involvement of local actors (e.g. small municipalities, NGOs, schools, cultural institutions etc.) in project development and intercultural dialogue.	Depending on project type and location	No impact.

The conducted analyses, the results of which are given in the above table, show the following:

- Some (marked in orange) areas of support may have a significant negative impact on the environment, but the scale of this impact will depend on the type, characteristics and location of the project.
- A number of measures of the Programme may not have a significant negative impact on the environment (marked in yellow), but its scope does not indicate that they may be classified as always or have a potentially significant impact on the environment. Some of them may also have a positive impact on it.
- It is assumed that many of the Programme activities will have a positive impact on the environment (direct or indirect), or will be neutral with respect to the environment.
- The provision (in the Programme) saying that 'beyond regular and small-scale cross-border cooperation projects, the Monitoring Committee may decide to co-finance strategic projects under this measure, i.e. projects having a tangible impact on a significant part of the Programme area' makes it difficult to assess the environmental impact due to permitting implementation of both pilot projects and strategic projects. At this stage, type and location of strategic projects (to be implemented) have not been specified yet. Their impact on the environment occur to be negative and significant for the functioning of the environment, and therefore it is necessary to analyse the projects' impact on the environment after they are specified.

3.2 ANALYSIS OF THE PROGRAMME'S COMPLIANCE WITH THE EUROPEAN, REGIONAL AND GLOBAL STRATEGIC DOCUMENTS

The aim of the analysis is to present basic global strategic papers and European strategic papers relating to the scope of the Programme, particularly from the point of view of the development of the Environmental Report. The analysis of the basic strategic documents relating to the environment or containing elements of the environment from the point of view of coherence of the Programme's objectives with objectives of these documents.

The starting point for the analysis of strategic documents are the arrangements adopted at the global level, which in relation to particular documents are presented below.

United Nations Conference on Sustainable Development Rio+20 adopted the **outcome document**[20] **entitled *The future we want.*** This document contains declaration of the countries participating in the Conference to:

- continue the process of achieving the objectives of sustainable development, initiated at previous conferences, use the concept of green economy as a tool to achieve sustainable development, strengthen the UNEP and establish a new forum for sustainable development, take actions beyond the application of the gross domestic product (GDP) as the sole criterion for assessing the development of the country,
- develop a funding strategy for sustainable development,
- establish structures to meet the challenges of sustainable consumption and production, apply gender equality, stress the need of engaging civil society and including science in policy, take into account the importance of voluntary commitments in the area of sustainable development.

United Nations Framework Convention on Climate Change[21]. In the framework of the Convention, all parties, including Poland and the European Community (now European Union), commit (taking into account their common but differentiated responsibilities and their specific priorities for national and regional development, objectives and circumstances) to meet the main objective of the Convention, which is to achieve, in accordance with the relevant provisions of the Convention, stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

The Convention on Biological Diversity[22]. The objectives of this Convention include: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic

[20] Report of the United Nations Conference on Sustainable Development (A/CONF.216/16), 2012 http://www.uncsd2012.org/content/documents/814UNCSD%20REPORT%20final%20revs.pdf

[21] United Nations Framework Convention on Climate Change http://isap.sejm.gov.pl/DetailsServlet?id=WDU19960530238

[22] The Convention on Biological Diversity http://isap.sejm.gov.pl/DetailsServlet?id=WDU20021841532

resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

In accordance with the provisions of the Convention, each Party committed, in accordance with its particular conditions and capabilities to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in the Convention, as well as to integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. The Convention provides for measures from the scope of cooperation, monitoring, protection of species, use of biodiversity.

The Ramsar Convention[23]. The Convention's mission is the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world. Parties to the Convention are obliged, inter alia: to designate suitable wetlands for inclusion in a List of Wetlands of International Importance, to formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible to wisely use wetlands and to cooperate at the international level in the scope of implementation of the Convention. The Convention is the only international environmental treaty relating to a particular type of ecosystem - wetlands.

The European Landscape Convention[24]. The aims of this Convention are to promote landscape protection, management and planning, and to organise European cooperation on landscape issues. Parties to the Convention committed themselves to implement its provisions in conformity with its constitutional principles and administrative arrangements, and respecting the principle of subsidiarity, taking into account the European Charter of Local Self-government. The Parties also committed to harmonise the implementation of this Convention with their own policies. The Convention lays down rules for the protection of the landscape, gives guidelines for education in the field of nature conservation and outlines a framework for international cooperation for its implementation.

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[23] Convention on Wetlands of International Importance especially as Waterfowl Habitat (http://www.gdos.gov.pl/files/Konwencje/Konwencja-Ramsarska.pdf)

[24] The European Landscape Convention http://isap.sejm.gov.pl/DetailsServlet?id=WDU20060140098

Convention on Long-range Transboundary Air Pollution (LRTAP)[25]**.** Parties to the Convention agreed to protect man and his environment against air pollution and shall endeavour to limit and, as far as possible, gradually reduce and prevent air pollution including long-range transboundary air pollution. It will be supported by the exchange of information, consultation, research and monitoring. Moreover, the Parties develop policies and strategies which shall serve as a means of combating the discharge of air pollutants, taking into account efforts already made at national and international levels. The priorities of the Convention until 2020 include: reduction of air pollutants emissions with relation to their adverse effects on health (especially in the range of particulate matter $_{2.5}$), increase of the importance of monitoring in the assessment of implementation of the Parties' commitments to reduce emissions and improve air quality, and increase of the importance of integrated assessments in the view of the impact on ecosystems. The Convention has been extended by a number of protocols:

- Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP),
- Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent,
- Protocol concerning the Control of Nitrogen Oxides or their Transboundary Fluxes,
- Protocol on Further Reduction of Sulphur Emissions,
- Protocol on Heavy Metals,
- Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (a so-called Gothenburg Protocol).

Convention on the Protection of the Marine Environment of the Baltic Sea Area - a so-called New Helsinki Convention [26] establishes a common objective for Parties to the Convention, which is the comprehensive protection of the marine environment of the Baltic Sea through the prevention of pollution from ships, land and air, together with pollution resulting from exploitation of the seabed. The Convention applies not only to the Baltic Sea, but also its catchment area.

The Parties to the Convention committed to promote ecological restoration of the Baltic Sea Area and the conservation of its ecological balance. The specific objectives of the Convention include:

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[25] Convention on Long-range Transboundary Air Pollution (LRTAP) http://isap.sejm.gov.pl/DetailsServlet?id=WDU19850600311

[26] http://isap.sejm.gov.pl/DetailsServlet?id=WDU20000280346

- preventing and eliminating pollution of the Baltic Sea,
- promoting Best Environmental Practices (BEP) and Best Available Technologies (BAT),
- measurement and analysis of emissions and discharges of pollutants from point and diffuse sources into water and air. The results will be used to assess the state of the marine environment,
- reduction of transboundary pollution in areas located outside the Baltic Sea area,
- conservation of natural habitats and biodiversity, and protection of ecological processes,
- ensuring a sustainable use of natural resources in the Baltic Sea region,

Marine conservation issues have been emphasised mostly in the context of reducing threats associated with eutrophication, and minimising risk of pollution runoffs to the Baltic Sea via the surface water.

As a result of activities within the framework of the Helsinki Convention, the **Baltic Sea Action Plan 2021** was established[27] establishing the objective to: **'radically reduce pollution of the Baltic Sea and restore its good ecological status by 2021', and in particular:**

- combating eutrophication, or excessive growth of nutrient concentrations, leading to unnatural algae blooms and hence the formation of anaerobic zones;
- preventing discharges of hazardous substances, including carcinogenic and toxic substances (e.g. mercury);
- ensuring environmentally-friendly maritime transport;
- protecting biodiversity (security of evolution and durability of life support systems of the biosphere).

The basic strategic papers of the European Union

Links between basic strategic documents of the EU are shown in the diagram below.

[27] http://www.bsap.pl

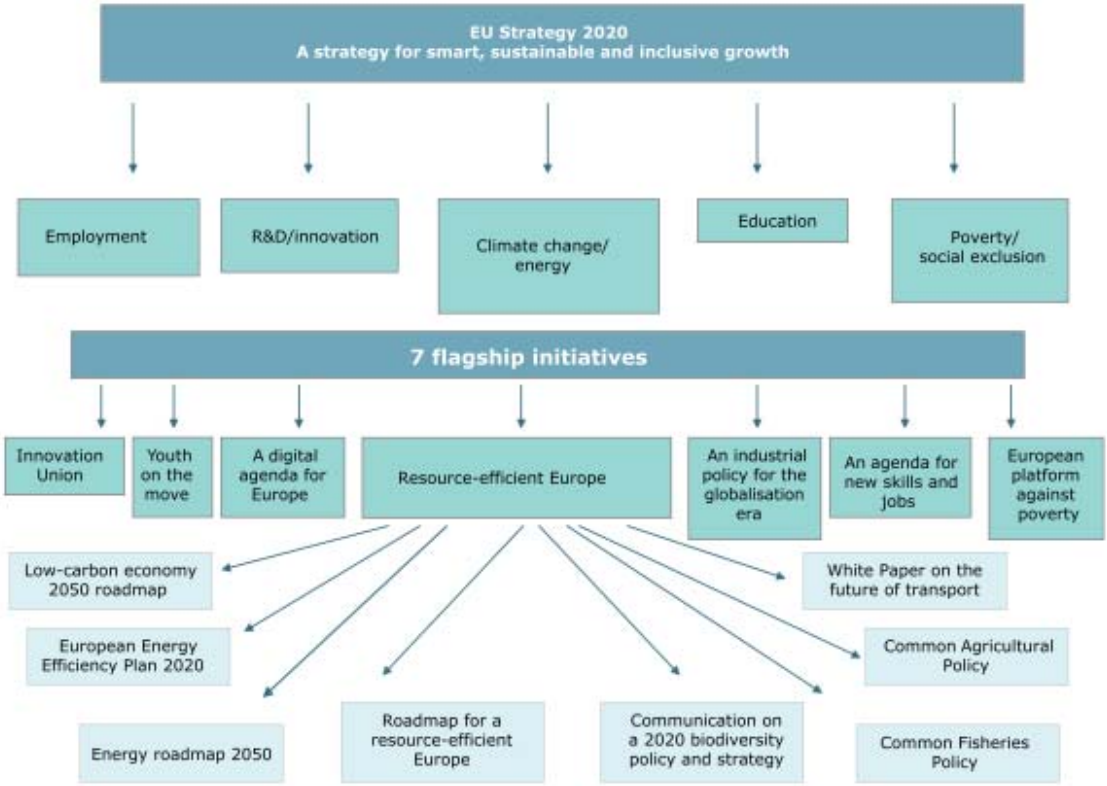

Figure 2 Relation of the Europe 2020 Strategy to other documents [Source: EEA, Environment and human health 2012 after Rappolder, 2012]

Analysis of the EU documents relating to matters covered by the Programme has been carried out mainly from the point of view of the need to perform Impact Assessment of the Programme's activities on the environment and assess the extent to which the objectives of these documents are considered, and to identify possible discrepancies.

It has covered 11 documents about the direction of the EU development in relation to the scope of the Programme, and the environment. The analysis particularly covered:

1. The Europe 2020 - A Strategy for Smart, Sustainable, and Inclusive Growth.
2. White Paper. Adapting to climate change: Towards a European framework for action.
3. The EU strategy for adaptation to climate change.
4. General Union Environment Action Programme to 2020. 'Living well, within the limits of our planet' (7. EAP).
5. Territorial Agenda of the European Union. Towards a More Competitive and Sustainable Europe of Diverse Regions.
6. Our life insurance, our natural capital - an EU biodiversity strategy to 2020.
7. Blueprint to Safeguard Europe's Waters (Water Blueprint).

8. ‘Horizon 2020’ - The Framework Programme for Research and Innovation.
9. A Sustainable Europe for a Better World: EU Sustainable Development Strategy.
10. The EU Strategy for the Baltic Sea Region.
11. Programme to support the further development of an Integrated Maritime Policy.

For the purpose of the Report, the analyses were performed in accordance with the following schematic diagram..

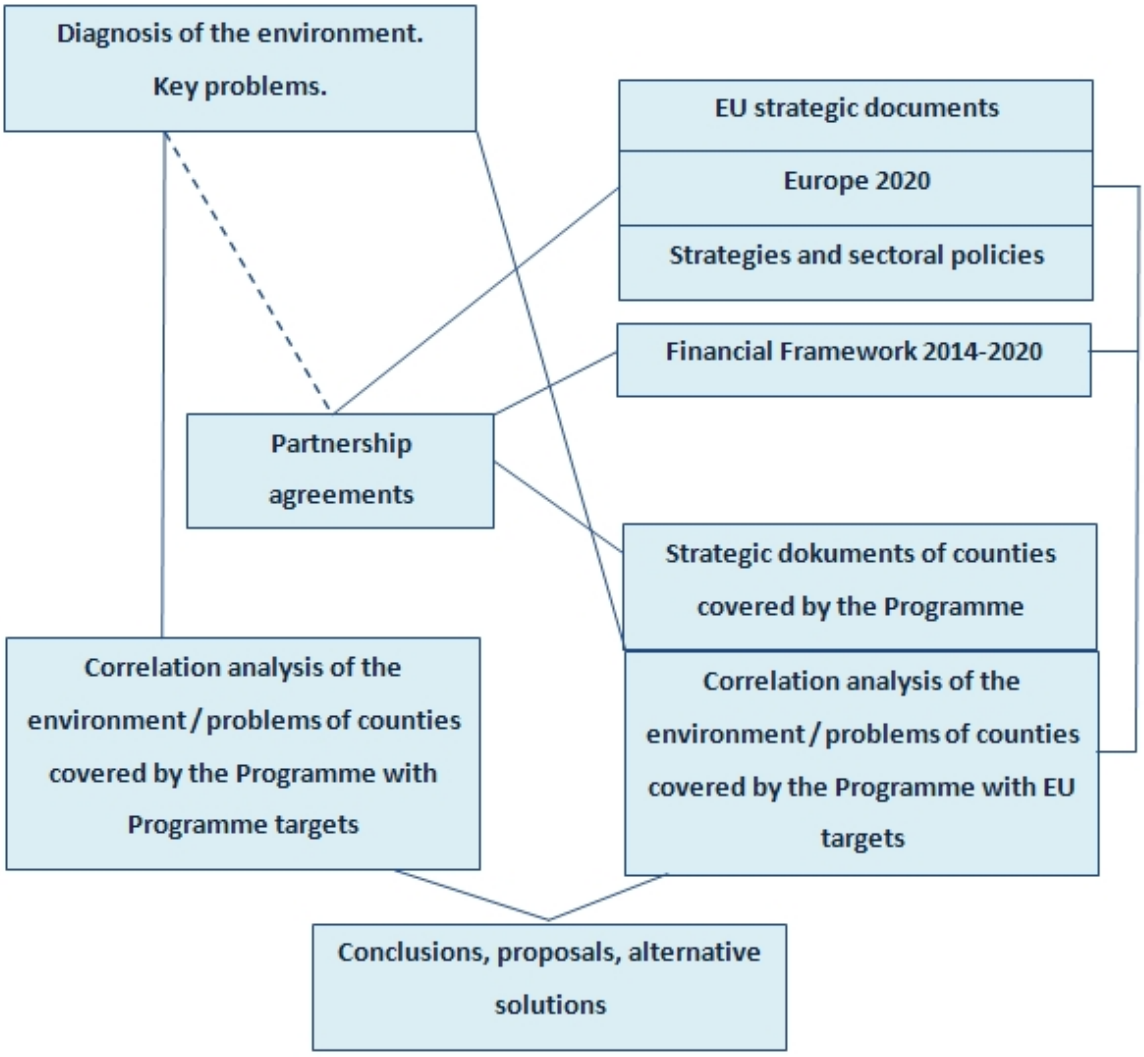

Figure 3 Schematic diagram of analyses of research issues [Source: Own work].

Based on the analyses, conclusions were drawn with regard to the assessment of the extent to which the objectives of the EU are implemented in the Programme, and whether particular elements of the Programme should be clarified or supplemented, so that the EU's objectives were considered to a larger extent. In addition, the analytical results were used to propose criteria for selection of projects

supported under the Programme in order to fully meet the objectives of the EU. It should be noted that the analysed documents have different levels of detail. In some cases, documents specify indicators of the achievement of the objectives, while other documents set out only general trends. Results of the analyses are presented in appendix 2 *Analysis of the Programme's compliance with strategic documents of the EU*.

Summary

The following conclusions can be drawn from the analysis of the basic EU documents related to the Programme:

- It is concluded that the Programme generally supports objectives of the analysed documents.
- No conflict was identified between the Programme objectives, and goals specified in the EU and international papers.
- Some of the objectives of the above-mentioned documents are not fully reflected in the Programme. This is due to the limited scope (including financial) of the Programme and its complementarity with other programmes.
- No correlation was identified between objectives set out in the White Paper. Adapting to climate change: Towards a European framework for action and The EU strategy for adaptation to climate change with the objectives set out in the Programme.

3.3 Analysis of the Programme's compliance with strategic documents of countries covered by the Programme

The aim of the analysis is to present the basic strategic documents of countries covered by the South Baltic Cross-Border Cooperation Programme 2014-2020, and in particular from the point of view of assessing the impact of this Programme on the environment. The analysis of the basic strategic documents relating to the environment or containing elements of the environment from the point of view of coherence of the Programme's objectives with objectives of the mentioned documents.

The analysis covered the most important strategic papers, as indicated by the countries covered by the Programme:

1. Denmark:

a) Energy Strategy 2050 - 'From coal, oil and gas to green energy'[28]

b) Danish Strategy for Sustainable Development 'A shared future - balanced development'[29]

2. Lithuania:

a) Lithuania's Progress Strategy 'Lithuania 2030'[30],

b) National Strategy for Sustainable Development,[31]

c) Lithuanian Innovation Strategy for 2010-2020,[32]

3. Germany:

a) Perspectives for Germany - Our strategy for sustainable development,[33]

b) German Resource Efficiency Programme,[34]

4. Poland:

a) Maritime Policy of the Republic of Poland until 2020[35],

b) Energy Policy of Poland until 2030[36],

c) The National Water and Environmental Programme, the draft National Water Policy until 2030, the National Programme for Municipal Wastewater Treatment, and other relevant documents in the field of water management[37],

d) The National Waste Management Plan 2014[38],

5. Sweden[39]:

a) Sweden's sixteen environmental quality objectives[40],

b) Regional environmental objectives in the region of Blekinge and Kalmar[41]*,*

c) South Baltic Sea Action Plan 2009 - 2015[42],

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[28] http://www.kebmin.dk/sites/kebmin.dk/files/news/from-coal-oil-and-gas-to-green-energy/Energy%20Strategy%202050%20web.pdf

[29] http://www2.mst.dk/udgiv/publications/2002/87-7972-279-2/pdf/87-7972-259-8.pdf

[30] http://www.lrv.lt/bylos/veikla/lithuania2030.pdf

[31] http://www.am.lt/VI/index.php#r/916

[32] http://www.mita.lt/uploads/documents/innovation_en/strategy_20102020.pdf

[33] http://www.bundesregierung.de/Webs/Breg/DE/Themen/Nachhaltigkeitsstrategie/1-die-nationale-nachhaltigkeitsstrategie/nachhaltigkeitsstrategie/_node.html

[34] http://www.bmub.bund.de/service/publikationen/downloads/details/artikel/german-resource-efficiency-programme-progress

[35] http://www.umsl.gov.pl/pliki/politykamorska2020.pdf

[36] http://www.mg.gov.pl/files/upload/8134/Polityka%20energetyczna%20ost.pdf

[37] http://www.kzgw.gov.pl

[38] http://dokumenty.rcl.gov.pl/M2010101118301.pdf

[39] Regional documents have been highlighted in italics.

[40] http://www.miljomal.se/sv/

[41] http://www.lansstyrelsen.se/blekinge/Sv/miljo-och-klimat/miljomal/Pages/miljomal.aspx, http://www.lansstyrelsen.se/kalmar/sv/miljo-och-klimat/miljomal/Pages/index.aspx

d) South Baltic Sea Management Plan 2009 - 2015[43],

e) Agreed guidelines and guidance for water management 2009-2015[44],

f) Water Information System Sweden[45]

g) Proposal for Sweden's National Implementation Plan for the HELCOM's Baltic Sea Action Plan[46],

h) Climate and energy strategy for national government departments[47],

i) Kalmar - region free from fossil fuels in 2030 [48]*,*

j) Plan for adaptation to climate change in the region of Kalmar and Blekinge [49]*,*

k) Cooperation Plan for the Blekinge Archipelago Biosphere Reserve[50]*,*

l) Protected marine habitats in Blekinge, nature reserves (Eriksbergsvägen, Gö, Tromtö, Utklippan) [51]*,*

m) Natura 2000 in the region of Blekinge and Kalmar[52]*,*

n) Conservation plans for marine Natura 2000 sites in Blekinge and Kalmar[53]*,*

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[42] http://www.vattenmyndigheterna.se/SiteCollectionDocuments/sv/sodra-ostersjon/beslut-ap/AP_SO_webb.pdf

[43] http://www.vattenmyndigheterna.se/SiteCollectionDocuments/sv/sodra-ostersjon/beslut-fp/FP_SO_webb.pdf

[44] http://www.vattenmyndigheterna.se/Sv/om-vattenmyndigheterna/beslutsdokument/Pages/default.aspx

[45] http://www.viss.lansstyrelsen.se

[46] http://www.government.se/content/1/c6/14/59/85/8406e2b4.pdf

[47] http://www.lansstyrelsen.se/blekinge/En/miljo-och-klimat/klimat-och-energi/Pages/default.aspx

[48] http://www.rfkl.se/Documents/Miljo/Nooil/fossilfuelfreeregion2030.pdf

[49] http://www.lansstyrelsen.se/kalmar/sv/miljo-och-klimat/klimat-och-energi/klimatanpassning/Pages/dricksvattenforsorjning-i-ett-framtida-klimat.aspx, http://www.lansstyrelsen.se/blekinge/Sv/miljo-och-klimat/klimat-och-energi/klimatanpassning/Pages/default.aspx?keyword=klimat+o+energi, http://www.lansstyrelsen.se/kalmar/sv/miljo-och-klimat/klimat-och-energi/klimatanpassning/Pages/index.aspx

[50] http://www.blekingearkipelag.se/wp-content/uploads/2014/01/samverkansplan-blekinge-arkipelag-slutversion.pdf#_blank

[51] http://www.lansstyrelsen.se/blekinge/Sv/djur-och-natur/skyddad-natur/naturreservat/karlskrona/utklippan/Pages/index.aspx http://www.lansstyrelsen.se/blekinge/Sv/djur-och-natur/skyddad-natur/naturreservat/ronneby/go/Pages/index.aspx, http://www.lansstyrelsen.se/blekinge/Sv/djur-och-natur/skyddad-natur/naturreservat/ronneby/tromto/Pages/index.aspx , http://www.lansstyrelsen.se/blekinge/Sv/djur-och-natur/skyddad-natur/naturreservat/karlshamn/eriksberg/Pages/index.aspx

[52] http://www.lansstyrelsen.se/blekinge/Sv/djur-och-natur/skyddad-natur/natura2000/Pages/index.aspx?keyword=natura+2000, http://www.lansstyrelsen.se/kalmar/sv/djur-och-natur/skyddad-natur/natura2000/Pages/index.aspx

[53] http://www.lansstyrelsen.se/kalmar/sv/djur-och-natur/skyddad-natur/natura2000/Pages/bevarandeplaner.aspx, http://www.lansstyrelsen.se/blekinge/Sv/djur-och-natur/skyddad-natur/natura2000/Pages/Bevarandeplaner.aspx

o) *Marine Natura 2000 sites in the region of Kalmar and Blekinge*[54],

p) *Regional Development Strategy for the county of Kalmar 2012-2020*[55],

q) *Attractive Blekigne. Strategy for the county of Blekinge 2014-2020*[56].

Countries covered by the Programme submitted the most important, in their opinion, national documents (also regional documents, highlighted in italics) that are crucial for the development of the Report. In order to apply consistent method of analysis and assessment of the Programme's conformity with documents of the supported countries, it was assumed that the national documents are the most important from the point of view of the scope of the Report. Regional documents should be considered as a supplementary material, supporting the assessment of the Programme's impact on the environment. The regional documents indicated by individual countries should be analysed in detail at the planning stage of specific investments, and once their location is determined.

Analysis of the Programme's compliance with the key strategic documents of countries covered by the Programme is presented in appendix 3.

Summary

The following conclusions can be drawn from the analysis of the strategic documents of countries covered by the Programme:

- It is concluded that the Programme supports realisation of objectives of the analysed strategic documents of countries covered by the Programme.
- Due to its nature, the Programme does not refer to all of the specific issues presented in the country strategy papers. The program supports the implementation of selected key tasks relevant to cross-border cooperation and the reduction or obstacles typical in the area of support.
- No contradictory areas were identified in relation to the objectives of the analysed strategic documents. Some of them are not fully represented because of the general nature of the Programme and the limited financial scope.

[54] http://www.lansstyrelsen.se/kalmar/SiteCollectionDocuments/sv/djur-och-natur/skyddad-natur/natura2000/Natura2000objektexternversion2010.pdf

[55] http://www.rfkl.se/documents/rapporter/rus/RUS%202012.pdf

[56] http://issuu.com/cissi.dahl/docs/blekingestrategin130813_webb_kopia/1?e=7215263/4491413

4. ANALYSIS OF THE STATE OF THE ENVIRONMENT IN THE PROGRAMME ELIGIBLE AREA

While assessing state of the European environment in terms of current trends and challenges, as well as the shape of the next 7th Environmental Action Programme to 2020, the European Environment Agency (EEA) has formed the following key findings[57]: continuing depletion of Europe's stocks of natural capital and flows of ecosystem services will ultimately undermine Europe's economy and erode social cohesion. The European Union has reduced its greenhouse gas emission and is on track to meet its Kyoto Protocol commitments. However, global and European cuts in greenhouse gas emissions are far from sufficient to keep average world temperature increases below 2 °C. Therefore, the key priorities include putting in place adaptation measures to increase Europe's resilience to climate change.

Europe has established an extensive network of protected areas and programmes to reverse the loss of endangered species. However, widespread alteration of landscapes, degradation of ecosystems and loss of natural capital mean that the EU will not meet its target of halting biodiversity loss by 2010. To improve the situation we must prioritise biodiversity and ecosystems in policymaking at all levels.

Environmental regulation and eco-innovation have increased resource efficiency through a relative decoupling of resource use, emissions and waste generation from economic growth in some areas. However, absolute decoupling remains a challenge, especially for households. This indicates scope not only to improve production processes further, but also to alter consumption patterns to reduce environmental pressures.

Links between the state of Europe's environment and various global mega-trends imply increasing systemic risks. Many key drivers of change are highly interdependent and likely to unfold over decades rather than years. These interdependencies and trends, many of them outside Europe's direct influence, will have significant consequences and potential risks for the resilience and sustainable development of Europe's economy and society. Better knowledge of the linkages and associated uncertainties will be essential.

The notion of dedicated management of natural capital and ecosystem services is a compelling integrating concept for dealing with environmental pressures from multiple sectors.

[57] The European Environment, State and Outlook 2010, Synthesis, EEA 2010
http://www.eea.europa.eu/soer/synthesis/translations/srodowisko-europy-2010-2013-stan

Spatial planning, resource accounting and coherence among sectoral policies implemented at all scales can help balance the need to preserve natural capital and use it to fuel the economy. A more integrated approach of this sort would also provide a framework for measuring progress more broadly and underpin coherent analyses across multiple policy targets.

Increased resource efficiency and security can be achieved, for example, using extended life cycle approaches to reflect the full environmental impacts of products and activities. This can reduce Europe's dependence on resources globally and promote innovation. Pricing that takes full account of resource use impacts will be important for steering business and consumer behaviour towards enhanced resource efficiency. Clustering sectoral policies according to their resource needs and environmental pressures would improve coherence, address shared challenges efficiently, maximise economic and social benefits and help avoid unintended consequences.

Implementing environmental policies and strengthening environmental governance will continue to provide benefits. Better implementation of sectoral and environmental policies will help ensure that goals are achieved and provide regulatory stability for businesses. A broader commitment to environmental monitoring and up-to-date reporting of environmental pollutants and wastes, using the best available information and technologies, will make environmental governance more effective. This includes reducing long-term remediation costs through early action.

Transformation towards a greener European economy will ensure the long-term environmental sustainability of Europe. In this context, shifts in attitudes will be important. Together, regulators, businesses and citizens could participate more widely in managing natural capital and ecosystem services, creating new and innovative ways to use resources efficiently and designing equitable fiscal reforms. Using education and various social media, citizens can be engaged in tackling global issues such as meeting the 2 °C climate target.

While approaching assessment of the state of the environment in the Programme eligible area, attention shall be paid to the above-mentioned issues and challenges.

The analysed area is characterised by rich environmental resources, high biodiversity and diverse landscape. Rich cultural heritage of the region is also worth emphasising.

The purpose of the analysis of the environment in the area covered by the Programme is (based on the environmental assessment) to identify the most important environmental issues, including the most sensitive elements of the environment and the drivers of adverse effects in the environment. Analyses of the state of the environment will provide a basis for the possibility of the Programme to influence solving of existing problems and threats, and on the other hand, to evaluate possible negative impact of

the Programme on the environment. The results will also be used to draw conclusions as to the criteria for selection of projects to be implemented under the Programme.

In order to draw conclusions in the above-specified scope, the analysis involved available materials, especially data from the European Environment Agency (EEA) and the materials developed under the Convention on the Protection of the Marine Environment of the Baltic Sea. Due to the variety of materials developed at the level of countries participating in the Programme, the main assumption was to primarily use the materials on the evaluation of the entire Baltic Sea region, in order to ensure the consistency of the presented data and conclusions formulated on their basis.

The synthesis of the analysis is presented below in relation to specific areas of environmental protection in accordance with the EEA scheme, in order to make it easier to refer to the European trends from the 2010 SOER report. [58]

4.1. PRESURE ON THE BALTIC SEA ENVIRONMENT

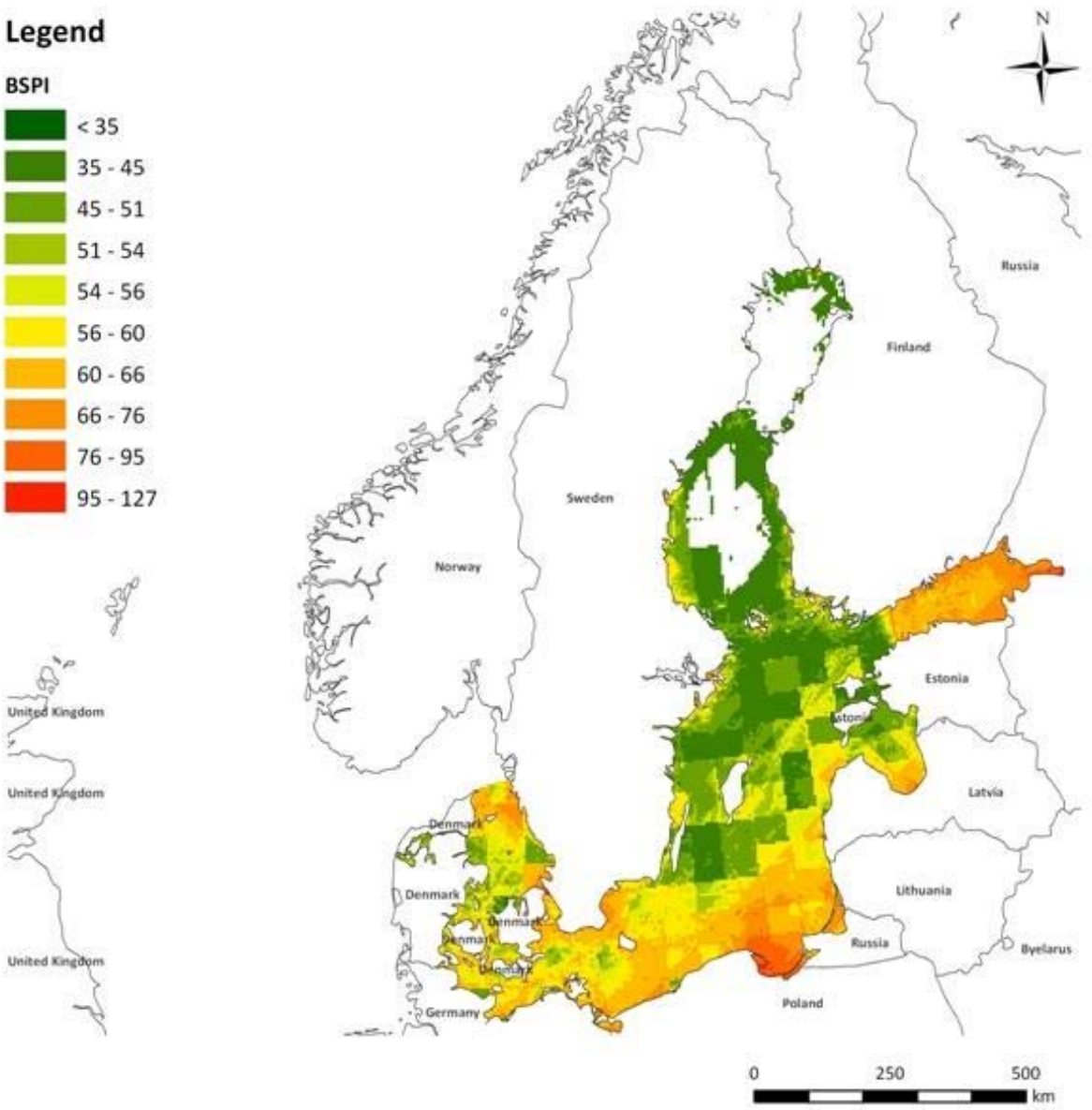
Anthropogenic pressures on the Baltic Sea basin related to the use of its resources by the countries located in its catchment area, and the natural hydrological conditions affecting low resistance of the basin caused a noticeable trend of constant deterioration of the state of the environment (water quality, food resources, biodiversity). The bad condition of the Baltic Sea has a negative impact on various possibilities of its direct and indirect use. Striving to improve the situation constituted the basis for actions taken for decades by Baltic countries, and aiming to regulate the scope and manner of use of the resources of the Baltic Sea.

The main drivers of pressure on the Baltic Sea environment

Main drivers of pressure on the environment of the Baltic Sea are primarily derived from activities carried out on land. They result from expanded settlements in the coastal area (and in basins and catchments of rivers flowing into the Baltic Sea), the density of maritime and land transport links, industrial activities related to maritime transport (yards, refining industry) and others.

The strongest anthropopressure relates to the area covered by the South Baltic Cross-border Co-operation Programme 2014-2020, which is shown in the figure below.

[58] The European Environment, State and Outlook 2010, Synthesis, EEA 2010
http://www.eea.europa.eu/soer/synthesis/translations/srodowisko-europy-2010-2013-stan



BSPI - HELCOM Baltic Sea Protected Areas

Figure 4 Spatial distribution of the Baltic Sea Pressure Index (anthropogenic pressures on the Baltic Sea) - BSPI (Source: Own work based on data from HELCOM 2010, Ecosystem Health of the Baltic Sea. HELCOM Initial Holisitc Assessment, BSEP No. 122)

The most important anthropogenic drivers associated with the economic use of the South Baltic Sea are as follows:

- The increasing intensity of ship traffic causing water pollution through emissions of pollutants into the atmosphere, illegal discharges of oiled waters, waste and wastewater, as well as the introduction of alien species through ballast water discharge (it is estimated that there are

about 1.800 ships operating on the Baltic Sea at the same time, dominated by freighters, tankers and passenger ferries. The highest traffic area relates to the Danish straits - see figure below);

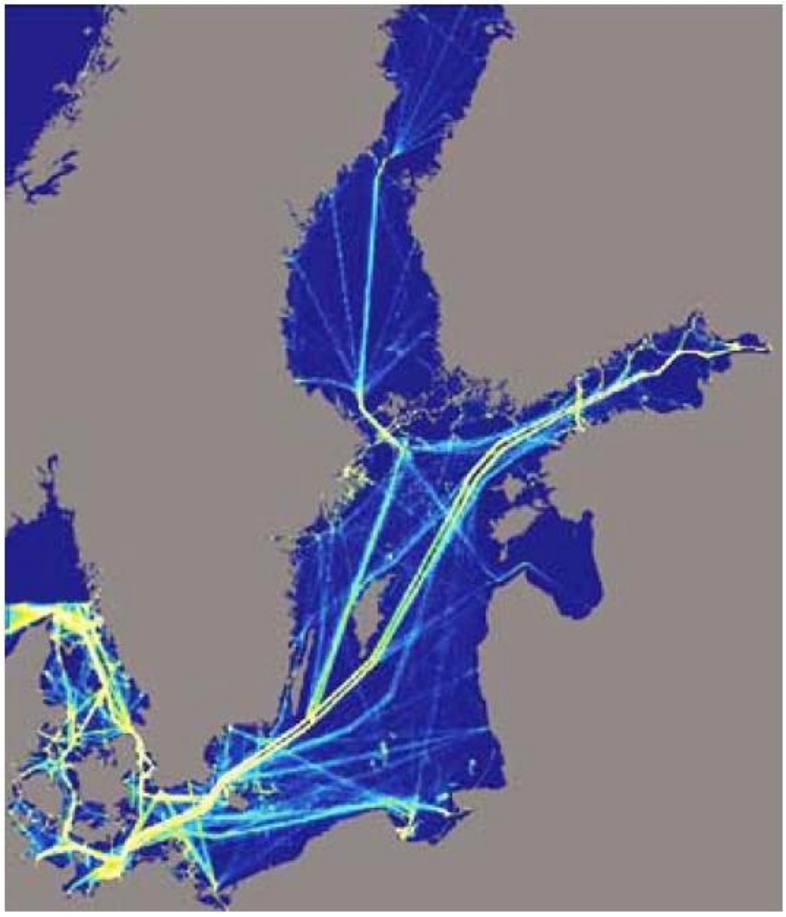


Figure 5 Ship traffic in the Baltic Sea during one week in 2008 (Source: HELCOM, 2010 Maritime Activities in the Baltic Sea, BSEP No. 123)

- The increasing investment activities in the scope of exploitation and transmission of oil and gas. Within the South Baltic Sea there are 8 port terminals for transshipment of crude oil with a turnover of more than 3 million tonnes per year, and drilling platforms, respectively, in Polish and Russian exclusive economic zone. Intensification of exploration of hydrocarbon deposits, i.a. in the region of Lithuania;
- Accidents related to maritime transport and incidental fuel spills (120-140 accidents is reported in the Baltic Sea region on yearly average. Since 2006, this ratio has gradually risen, which has a direct relationship with the increase in ship traffic. The figure below shows number of incidents in 2008;

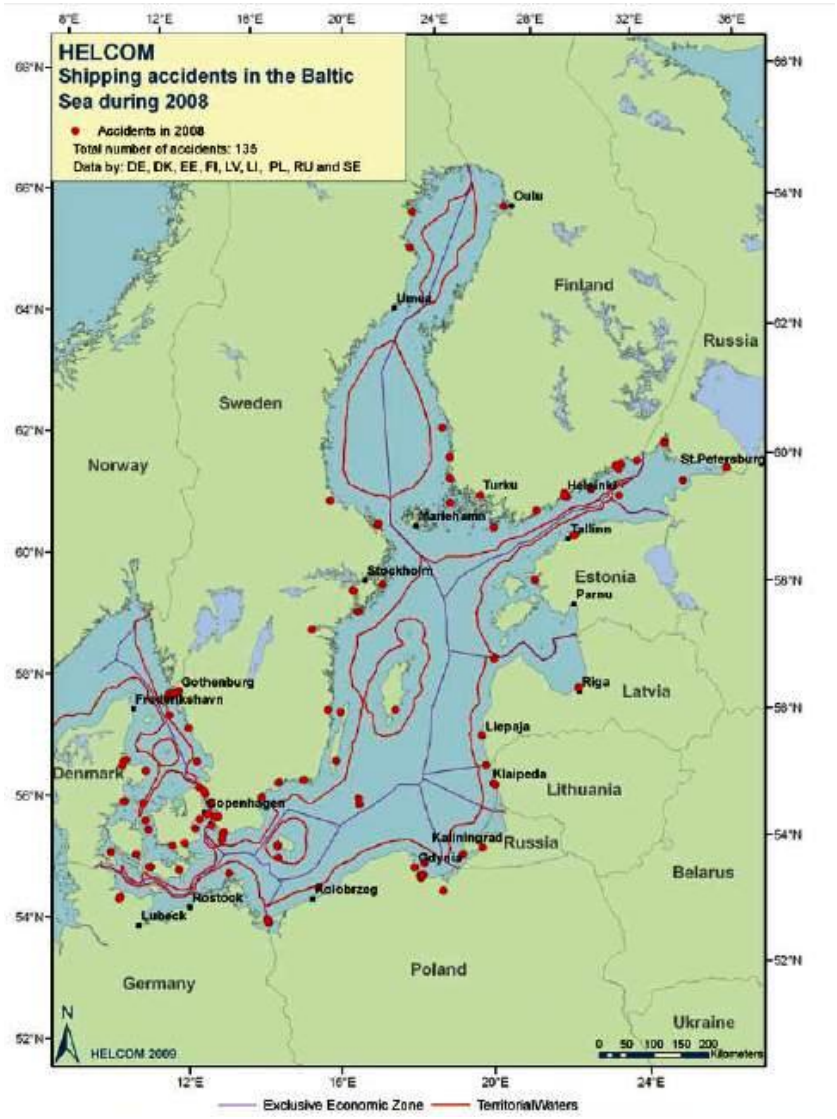


Figure 6 Spatial distribution of shipping accidents in the Baltic Sea in 2008 (Source: HELCOM 2010, Maritime Activities In the Baltic Sea, BSEP No. 123)

- fishing and over-fishing of the basin exceeding the natural boundaries of fish stock sustainability (acting synergistically with the pollution of the Baltic Sea and its poor ability to self-cleaning) - this mainly relates to the cod population;
- tourist use and alteration of the coastal zone, including pressure on naturally precious areas;
- development of wind energy in marine areas - the figure below shows the degree of planned and existing use of the Baltic Sea region for the purpose of wind energy;

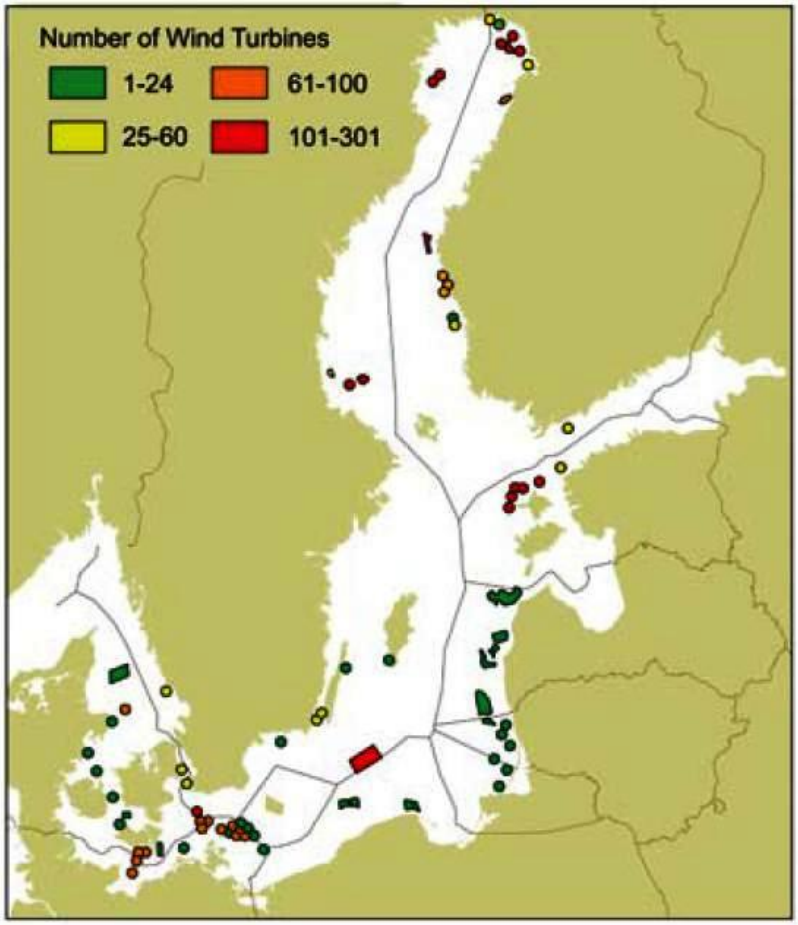


Figure 7 Planned and existing wind turbines in the Baltic Sea (Source: HELCOM 2010 Maritime Activities in the Baltic Sea, BSEP No. 123)

- littering the waters of the basin;
- risks associated with chemical munitions and weapon sunken after the Second World War;
- morphological changes of the sea coast associated with the development of the coastal zone investment and the protection need (sea coast protection against climate change and rising waters of the Baltic Sea).

Constantly growing economic importance of the Baltic Sea, combined with its natural sensitivity to pollution and the need to protect its ecosystem cause a number of conflict situations. The main areas of conflict (currently mostly exposed) include (according to Parteka[59]):

[59] Parteka [ed.], 2010

- conflict of settlement and land use in the coastal zone including protected areas - this particularly refers to the tourism function;
- conflict between favourable location of large onshore wind turbines and the protection of the landscape, and potential hazards to shipping;
- conflict resulting from the potential threat of maritime disasters and oil spills in relation to the coastal development in terms of recreation;
- conflict of consequences of climate change and the rising level of the Baltic Sea with the safety of buildings and population in areas at risk.

4.2. NATURE AND BIODIVERSITY

Introduction

The Birds and Habitats Directives are the basis of the EU policy on biodiversity. Despite the emergence of a large number of Natura 2000 sites in Europe (total area of 750 thousand. Km^2) and the implementation by Member States of programmes aimed at reversing the trend of the extinction of endangered species, there are still observed widespread changes in landscapes, ecosystem degradation and loss of natural capital. It means that the EU did not meet its target of halting biodiversity loss by 2010.[60].

Despite 40 years of efforts to protect the environment of the Baltic Sea (the 2014 year is the 40th anniversary of the Convention on the Protection of the Marine Environment of the Baltic Sea - a so-called Helsinki Convention), the ecological status of the Baltic Sea have steadily deteriorated. According to a HELCOM study of 2010, attempting to assess the overall state of the environment of the Baltic Sea[61], the state of biodiversity is unsatisfactory in most areas of the Baltic Sea. The situation in coastal areas is similar. In many habitats, and in all the trophic chain links (especially at the level of large fish) occur worrying changes and natural disturbances.

Strong pressure on the natural environment of the Baltic Sea is caused by a number of anthropogenic factors: fishing and agriculture, tourism, management of coastal zones, maritime traffic and transport, exploitation of natural resources, climate change, eutrophication and pollution by dangerous substances. All of them are a burden to the productivity and biodiversity of the ecosystem

[60] SOER 2010

[61] HELCOM 2010, Ecosystem Health of the Baltic Sea 2003-2007. HELCOM Initial Holistic Assessment. BSEP No. 122

in the Baltic Sea, causing changes and destruction of these processes and the wealth which they depend on.

Protection of biodiversity and the natural environment of the Baltic Sea is therefore one of the most important activities undertaken by the Helsinki Commission, including the implementation of the Baltic Sea Action Programme, particularly in the scope of reducing nutrients and hazardous substances discharged into marine waters. Operational environmental objectives adopted by HELCOM to achieve favourable conservation status of biodiversity focus on activities related to:

- natural landscapes of sea and land (coastal);
- well-functioning and sustainable populations of flora and fauna;
- viable populations of species;
- establishment of the BSPA system - HELCOM Baltic Sea Protected Areas.

Years of efforts to protect the environment within the Baltic Sea started to bring also positive effects, such as improving the conservation status of the grey seal and ordinary white-tailed sea eagle[2], and a significant reduction in nutrient loads dumped into the waters of the Baltic Sea.

Analyzing the state of conservation of biodiversity in the Programme eligible area, a particular attention was paid to the Natura 2000 network - a coherent system of protected areas established in order to preserve the most valuable species of plants, animals and habitats in the EU and the ecological corridors whose permeability allows the operation of these areas.

In most cases Natura 2000 sites overlap the internationally accepted forms of nature protection i.e.: UNESCO biosphere reserves[62], Ramsar wetlands[63] and HELCOM Baltic Sea Protected Areas (BSPA)[64] and forms of nature protection established at the national level (e.g. national and landscape parks).

Some areas of the Baltic Sea are important not only for the conservation of biodiversity of the Baltic Sea or the biodiversity of Europe. some of them are of global importance. About 40 BSPA areas covering shallow coastal waters, wetlands located in the coastal zone and transitional waters, are crucial to the survival of wintering and migrating birds arriving from distant parts of the globe, reaching areas of tundra, the Atlantic Ocean and Africa.[65]

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[62] International Programme on Man and Biosphere - MAB ('Man and Biosphere'), launched by UNESCO in 1971.
[63] The Ramsar Convention, or the Convention on Wetlands of International Importance especially as Waterfowl Habitat.
[64] BSPA - Baltic Sea Protected Areas established under the Helsinki Convention.
[65] Pearls of the Baltic Sea. Networking for life: special nature In a special sea. HELCOM, 2007

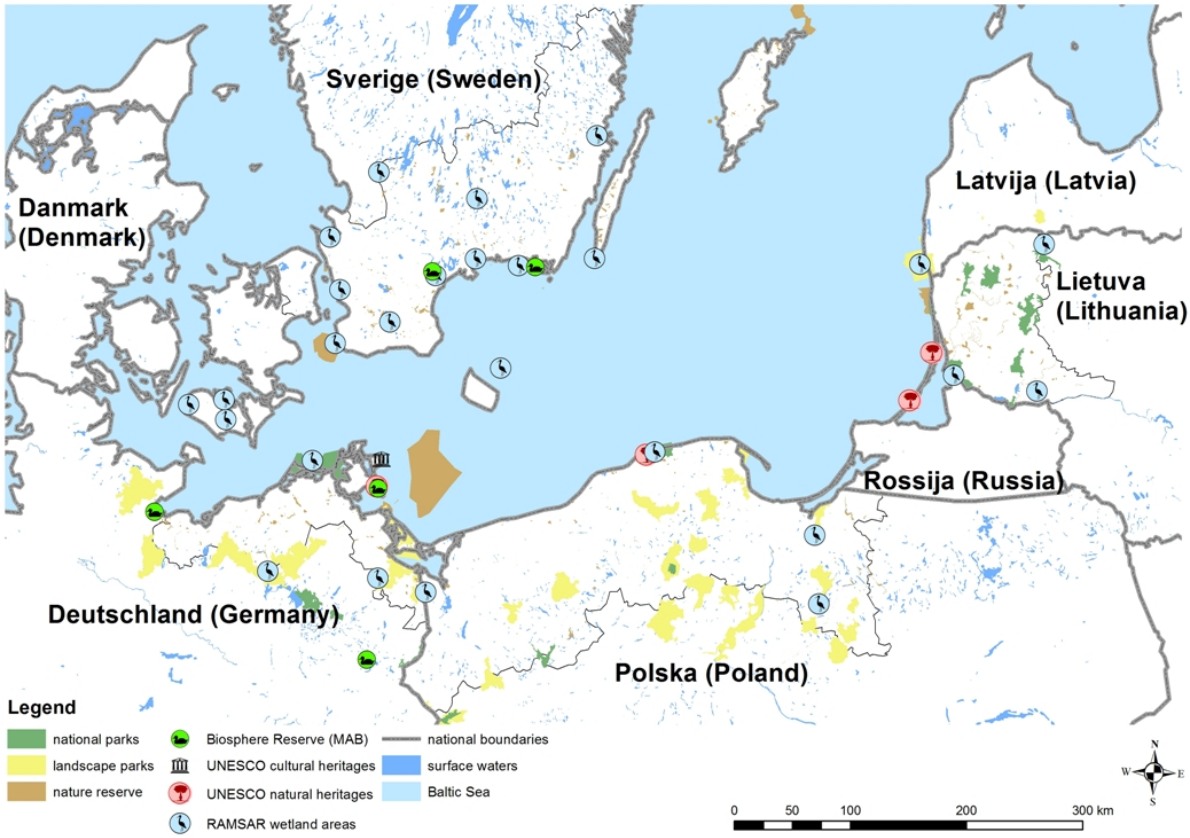

Figure 8 Domestic and international protected areas in the Programme eligible area. [Source: Own work based on data from http://geoserwis.gdos.gov.pl andhttp://protectedplanet.net].

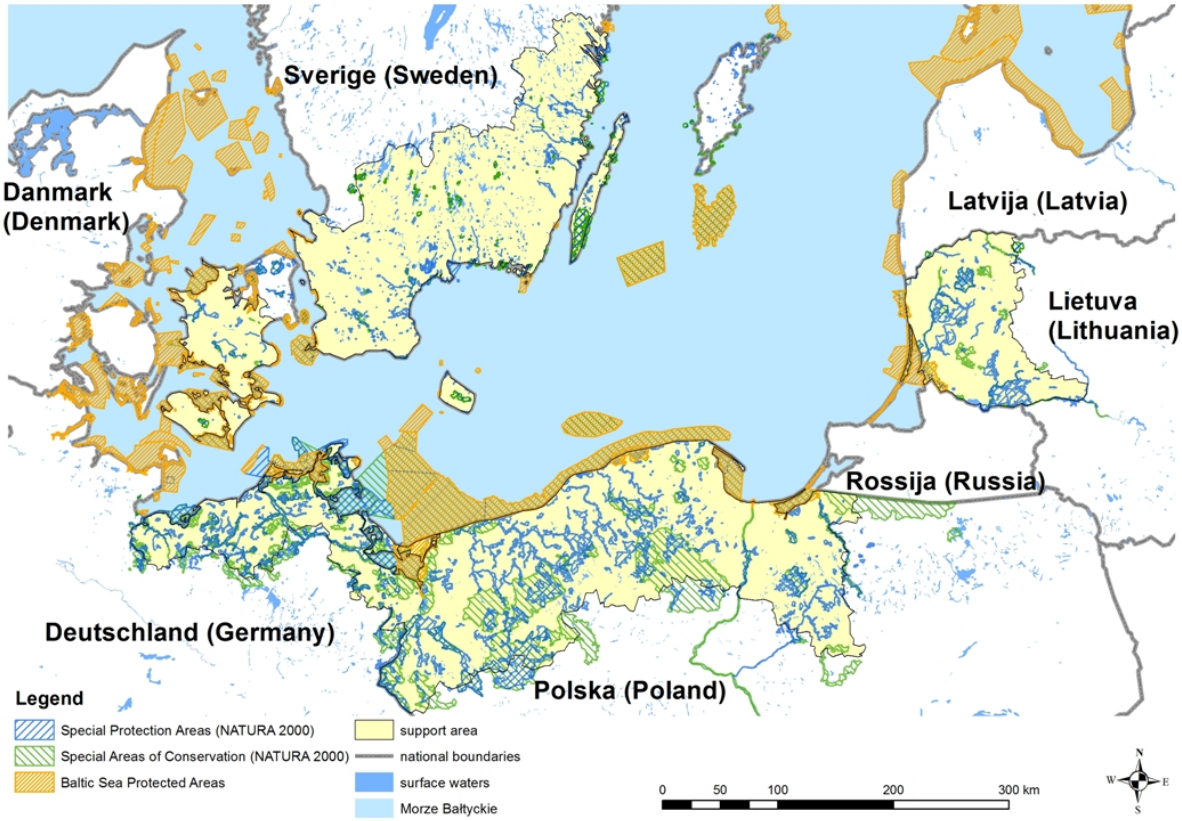

Figure 9 Natura 2000 sites and HELCOM Baltic Sea Protected Areas - International, in the Programme eligible area. [Source: Own work based on data from the European Environment Agency http://www.eea.europa.eu/data-and-maps/data/ and website of the Polish National Commission for UNESCO http://www.unesco.pl/nauka/czlowiek-i-biosfera-mab/polskie-rezerwaty-mab/, RAMSAR sites: www.helcom.fi.

Natura 2000 sites

Within the Programme (South Baltic Cross-border Co-operation Programme 2014-2020) eligible area 1 508 Natura 2000 sites were established with a total surface area of about 65 thousand km^2 - Table 1. Most of the Natura 2000 sites covered by the Programme were established by Sweden (856 sites), and Polish territory has the largest surface area covered by the Natura 2000 sites (32.8 thousand Km^2).

In most countries, the established Natura 2000 sites constitute the target (established at the EU level) surface area in relation to the surface area of the country. According to Eurostat data, in 2010 the percentage of surface coverage of the Member States with Natura 2000 sites reached 100% in Sweden, Denmark and Germany (99%). For Poland this ratio amounts to 78%, and for Lithuania 66%.

Despite the gradual increase in the number of Natura 2000 sites, the biodiversity is in crisis. Almost a quarter of wild species in Europe are threatened with extinction, and the majority of ecosystems have been degraded to such an extent that they are no longer able to provide valuable services. Such degradation means enormous social and economic losses for the EU[66] .

Table 4 Natura 2000 sites in the South Baltic Cross-border Co-operation Programme 2014-2020 [(10) EC, 2009. Environment Policy Review 2008: Own work based on data from the European Environment Agency http://www.eea.europa.eu/data-and-maps/data/]

Number of Natura 2000 sites in the Programme eligible area				
Country	**Special Protection Areas**	**Special areas of conservation**	**Bird and habitat areas, the boundaries of which coincide**	**Total**
Denmark	27	74	6	107
Lithuania	36	94	1	131
Germany	38	149	3	190
Poland	41	182	1	224
Sweden	31	740	85	856
Total	**173**	**1 239**	**96**	**1 508**
Surface area of Natura 2000 sites in the Programme eligible area [km^2]				
Country	**Special Protection Areas**	**Special areas of conservation**	**Bird and habitat areas, the boundaries of which coincide**	**Total**
Denmark	2 478.94	3 737.64	256.63	6 473.21
Lithuania	1 454.42	2 285.14	64.03	3 803.59
Germany	9 638.35	6 373.53	26.7	16 038.58
Poland	21 645.19	10 389.5	801.21	32 835.9
Sweden	660.11	2 138.14	3 056.18	5 854.43
Total	**35 877.01**	**24 923.95**	**4 204.75**	**65 005.7**

[66] The EU biodiversity strategy to 2020

Ensuring effective protection of the Natura 2000 sites is achieved through management plans to be developed in the period of 6 years from the establishment of a given site. In countries with a longer history of the Natura 2000 network: Sweden, Germany and Denmark, most areas already have such plans. In Poland[67] and Lithuania works are carried out on elaboration of environmental documentation and drafting of nature protection plans.

Coverage of a large surface of eligible area with protected Natura 2000 sites indicates the natural importance of this region of the Baltic Sea. A large part of those sites is related to the coastal zone, transitional waters and shallow waters of the Baltic Sea.

On the basis of reports submitted by EU Member States, collected in the first annual report of the European Commission on the state of conservation of habitats and species[68] it can be concluded that the strongest pressure on Natura 2000 sites refers to meadow, wetlands and coastal habitats. Further threats to biodiversity relate to observed and projected climate change. They will play a substantial role in biodiversity loss and put ecosystem functions at risk. Tackling climate change and adaptation to its changes are one of the most important priorities of EU policy. Measures to stop the biodiversity loss and preventing effects of climate change were included in the Strategy for the conservation of biodiversity for the period to 2020.

HELCOM Baltic Sea Protected Areas

The basic document of the Helsinki Convention, defining directions for the Baltic countries, is the Baltic Sea Action Plan (BSAP). It consists of four basic sections, including the 'Biodiversity and Nature Conservation' section. As part of efforts to protect the biodiversity, a coherent network of Baltic Sea Protected Areas (BSPA) was agreed to be achieved by the end of 2009

By 2013, 163 BSPA areas were established, covering 11.7% of the Baltic Sea surface area, i.e. about 54 thousand km^2 (including about 5 thousand km^2 of land).

[67] Poland is currently underway on the preparation of conservation plans in the coastal zone and on the sea: among others, for the area of the Pomeranian Bay (PLB990003 and PLH990002), the Szczecin Lagoon (PLB320009 and PLH320018), Slupsk Bank (PLC990001), coastal waters of the Baltic Sea (PLB990002), the Kamieński Lagoon and the Dziwna River (PLB320011), the Bay of Puck (PLB220005 and PLH220032), the mouth of the Vistula River (PLB220004 and PLH220044) and the Vistula Lagoon (PLH280007 and PLB 280010) according to the documents of maritime offices in Poland agreeing the scope of the Report.

[68] COM (2009) 358 final

Management plans are under development for the established Baltic Sea Protected Areas. The plans impose a variety of prohibitions and orders. In 2013, 106 BSPAs (65% of the total) have a management plan in force and in 42 (26%) sites a plan is in preparation.

In 2013, HELCOM evaluated the status of the network of Baltic Sea marine protected areas (BSPA)[69]. The report shows that the 10% target for aerial coverage of the BSPA in the separate Baltic Sea sub-basins has been reached (except the Baltic Proper and Gulf of Bothnia). The assessment also reports failure to increase the BSPA area in the Exclusive Economic Zone (EEZ) The only EEZ (Exclusive Economic Zone) country that reported BSPA expansion in 2010-2013 was Latvia.

The most significant existing threats for marine protected areas included eutrophication and fisheries. In the future, we should also take into account threats associated with oil spills, alien species and pollution from shipping.

The state of knowledge of marine species and habitats requires further studies. One of the necessary measures within the BSPA is increasing efforts to standardise the collection of data on protected species and habitats, with special focus on endangered species and habitats identified on the Red List, and to achieve coherence of the HELCOM Baltic Sea Protected Areas.

One of the previously observed beneficial effects of the establishment of Baltic Sea Protected Areas is to maintain the fisheries. Protection of coastal habitats for the purpose of important stages of life and other basic functions (breeding grounds, feeding grounds and spawning areas) that are necessary for the reproduction and development of fish, turned out to be extremely important in supporting ecosystem management.[70]

Habitats

In the Programme eligible area, specific natural values occur in terrestrial, river and marine habitats.

The Baltic countries currently work on identifying the status of marine habitats. Well-made maps of marine habitats, together with monitoring tests are the basis for assessing the degree of degradation of the environment and the rate of its recovery. Recognition of marine habitats and mapping of habitats is essential for the protection of habitats, which is superior to the conservation of the species - without their environment, species will not survive, and previously lost organisms can be re-entered to a reconstituted or preserved habitat.

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[69] HELCOM 2013a, Overview of the status of the network of Baltic Sea marine protected areas, Baltic Marine Environment Protection Commission

[70] Planning and management of Baltic Sea Protected Areas: guidelines and tools (typescript)

The key issues related to conservation of marine habitats include their unification related to standardisation of the physical and biological characteristics over large areas. Unlike offshore areas, where the biggest threat to habitats is their fragmentation[71].

A number of Natura 2000 sites and BSPAs have been established in open-sea areas, including, among others, areas covered by the Programme: 'Slupsk Shoal' (includes a fragment of the marine waters of highly shoaled seabed, of great importance for wintering of waterbirds), 'Norr Midsjöbanken Shoal' (the area of protecting the shoals and reefs, among others, important bird species such as the long-tailed duck (C. hyemalis) and guillemot (C. grylle)) and 'Hoburgs Bank' (important for such bird species as the long-tailed duck and guillemot mentioned above and common eider (S. mollissima)).

In the coastal zone of the South Baltic Sea, protection covers all different types of coast with a well-preserved structure of habitats and protected species: coastal dunes, coastal cliffs and skerries, and wetlands. Figure 10 shows distribution of the various coast types of the Baltic Sea.

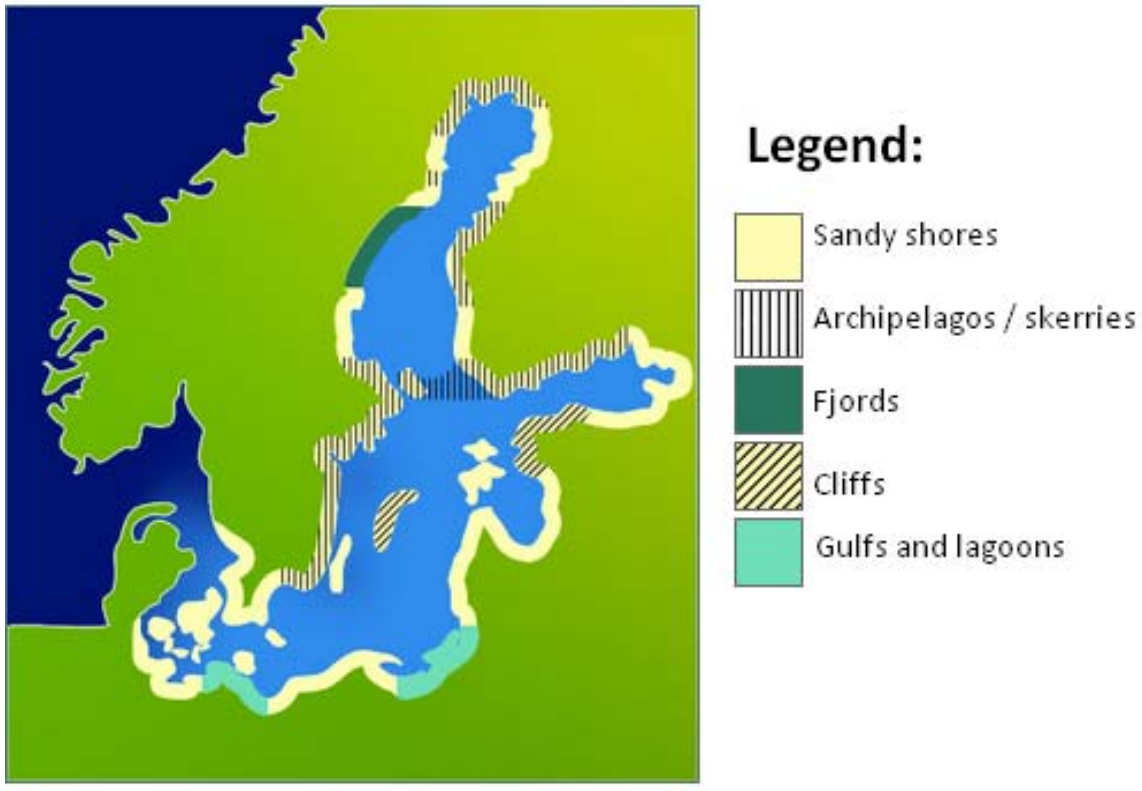

Figure 10 Coast types of the Baltic Sea [Source: www.naszbaltyk.pl]

[71] Atlas of the habitats in the seabed of the Polish sea areas, Broker of Innovation, Gdynia 2009;

Habitats associated with cliff and dune coasts are subject to strong anthropogenic pressure. The most important anthropogenic threats include penetration of habitats by tourists, development of tourism, and activities connected with the protection of coasts (interference with the naturalness of processes and habitats). Significant risks related to cliff coasts also include intensive deforestation (it contributes to changes in water and instability of the cliff).

Report on the state of the EU habitats and species lists coastal zone as one of the most endangered. Species and habitats associated with this area are subject to strong pressure resulting from tourism development and progressive investments in the attractive coastal areas.

Among the habitats associated with the inland Natura 2000 sites, a dominant role in the Programme eligible area is played by habitats associated with wetlands, river valleys, meadows and forests.

Meadow sites are endangered mainly due to the disappearance of traditional extensive agriculture, and wetlands are subject to pressure related to their drainage for economic use, and as a result of the observed changes in climate.

The significant risks to achieve good ecological status of rivers and good conservation status of habitats and species associated with surface waters, primarily includes chemical pollution and physical changes (including hydropower development).

Selected protected species

In the entire Programme eligible area occur protected species, both terrestrial and aquatic. In 2013, HELCOM published a red list of Baltic Sea species in danger of becoming extinct,[72] in which over 2,7 thousand species were assessed. As a result, the study found 3 extinct species, 8 considered critically endangered and 18 endangered. The key issue to reduce threats for protected species is to continue efforts to protect the marine environment of the Baltic Sea.

Selected species under strict protection are described below.

<u>Marine Mammals</u>

Only four species of marine mammals breed in the Baltic Sea. These include: grey seal (*Halichoerus grypus)*, Baltic ringed seal (*Pusa hispida*), harbour seal (*Phoca vitulina*) and a representative of cetaceans – Harbour porpoise (*Phocoena phocoena)*. All of them are covered by species protection.

[72] HELCOM 2013b, HELCOM Red List of Baltic Sea species in danger of becoming extinct, BSEP No.140

Baltic mammals are difficult to be observed in their natural environment. Usually, the weakened or trusting individuals can be observed on beaches or caught up in fishing equipment.

The figure below shows areas of particular seal species occurrence in the Baltic Sea. Since 1992, i.a. the Sea Station of the University of Gdańsk in Hel works on the reconstruction of the population of grey seals in the Baltic Sea. For several years, the seals appear regularly on the Polish coast in the vicinity of the mouth of the Vistula River.

Figure 11 Seal areas in the Baltic Sea [Source: http://www.naszbaltyk.pl/nekton.html]

In the period 2010-2013, the Baltic countries (excluding the Russian Federation) participated in the project that aimed at determining the population of harbour porpoise and the places of its occurrence. A similar goal is under implementation within the scope of the SAMBAH project, which is to determine the population of harbour porpoise and the area of its occurrence.

Ordinary white-tailed sea eagle (Haliaeetus albicilla)

White-tailed sea eagle is a predator from the top of the food chain, particularly vulnerable to the accumulation of pollutants from the lower trophic levels. For decades, an increase has been recorded in the number of individuals, probably caused by the protective measures taken and partial elimination of chemical contamination of the environment. The productivity of white-tailed sea eagle is an indicator describing the degree of bioaccumulation of contaminants.

Atlantic salmon (Salmo salar)

It is an andramous species migrating into fresh water to spawn. The native population of Atlantic salmon became extinct in the 80s of the last century. The entire current population was developed as a result of restitution that started in 1985. The species was considered critically endangered. Monitoring results indicate conservation status as unfavourable-bad (U2), the main reason of which is a disturbed structure of age, poor state of habitats and the negative outlook for conservation.

Among the key impacts and risks, an impaired continuity of watercourses is mentioned, and the presence of transverse barriers that hinder or impede migration, as well as changes in riverbeds, and wastewater load of rivers.

The main objective of conservation measures for this species is a reconstruction of the continuity of ecological corridors within the range of the species, preventing water pollution (especially water cloudiness), and protection against pollution.

Ecological corridors

One of the conditions for the effective protection of natural resources to ensure continuity of ecosystems. Connectivity between areas of high biodiversity is essential for gene replacement within a metapopulation of plants and animals. It also increases the stability of ecosystems. The existence of continuous areas of natural landscape in the form of ecological corridors is particularly important for migratory species.

Currently, there is no coherent concept of ecological corridors in the EU. The Natura 2000 network, even though the name has the word ‘network’ and protects a large part of the EU surface area, fails to protect the ecological relationships enabling connectivity between the areas.

In terms of the permeability of ecological corridors as important elements of biodiversity conservation in the management of Natura 2000 sites, particular attention was paid in the White Paper on Adaptation to Climate Change (European Framework for Action, 2009).

The research studies on ecological corridors (which did not translate into legislation) include a coherent concept of ecological ECONET network that was implemented by the Baltic countries covered by the South Baltic Cross-border Co-operation Programme 2014-2020.

ECONET is based on the concept of EECONET (European Ecological NETwork) network of protected areas aimed at integrating the areas to be protected and the establishment of a coherent system of protection in the European countries. EECONET concept is closely related to the Convention on Biological Diversity (1992) and Pan-European Biodiversity Strategy and landscape (1995). However, the EU law lacks of effective tools for the protection of ecological corridors, including the restoration and protection of landscape elements that enable dispersion of animals and plants and provide connectivity between habitats. There is also lack of guidelines to maintain consistency of ecosystems and connectivity between populations.

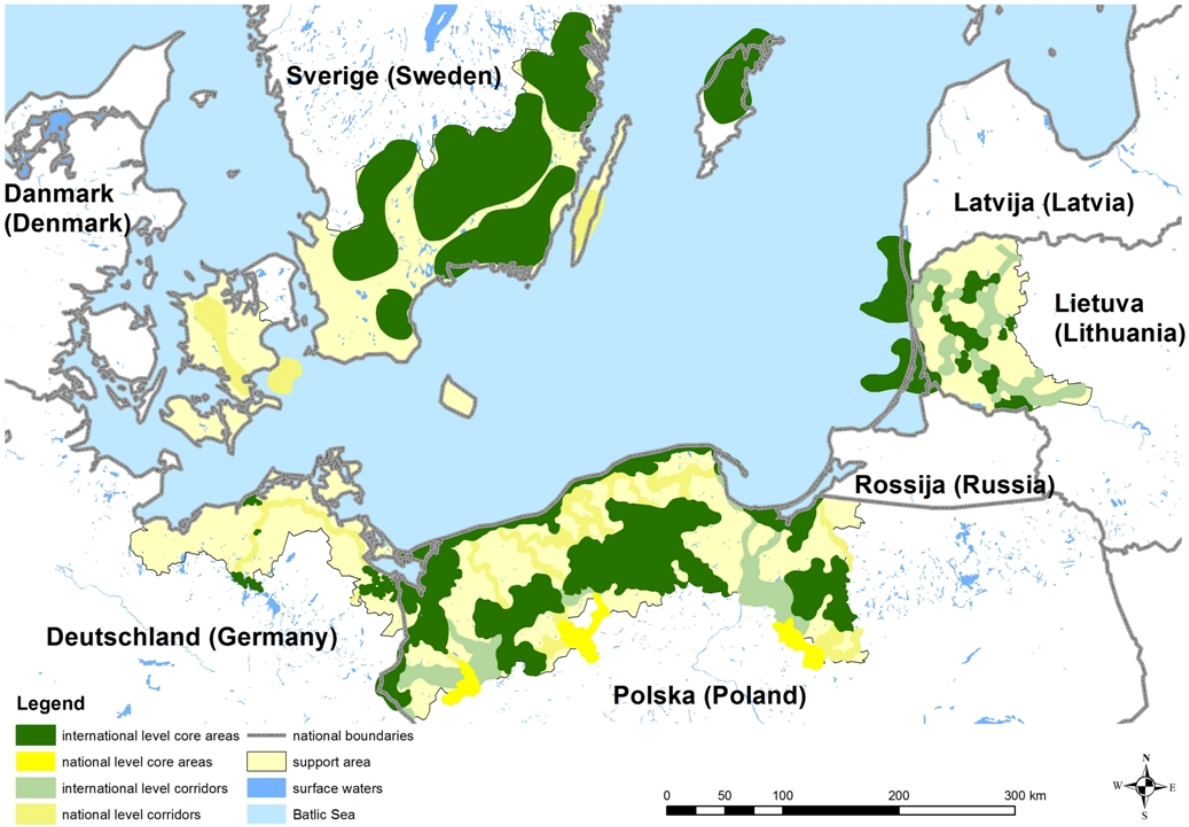

Figure 12 National ecological network ECONET in the Programme eligible area. [Source: Own work based on data from Liro A., 1995: National Ecological Network and http://www.ecologicalnetworks.eu, and http://www.bfn.de].

The figure above presents the ECONET network within the area covered by the Programme, the coastal areas constitute important nodes of international importance, i.e. the best preserved areas in

terms of nature and representative for various natural regions of a given country. The river valleys play the role of ecological corridors, however, Neman (Lithuania), Vistula and Oder (Poland) are of international rank. Other rivers constitute ecological corridors of national importance.

The waters of the Baltic Sea also constitute migration area for aquatic organisms. Within the Baltic Sea area we can observe feeding, spawning, seasonal and dispersal migration. Often, they depend on hydrological conditions prevailing in the Baltic Sea (mainly salinity) and the state of water quality. For example, according to the Sea Fisheries Institute in Gdynia (Poland), for several years autumn concentrations6 of sprat have been observed in the North Baltic Sea.

In the case of migratory birds, the South Baltic Sea and its coastal zone constitute an important migration corridor of an international rank. The figure below shows examples of the bird migratory pathways, including a so-called Mid-Atlantic pathway for wetland birds, which passes through the Baltic Sea.

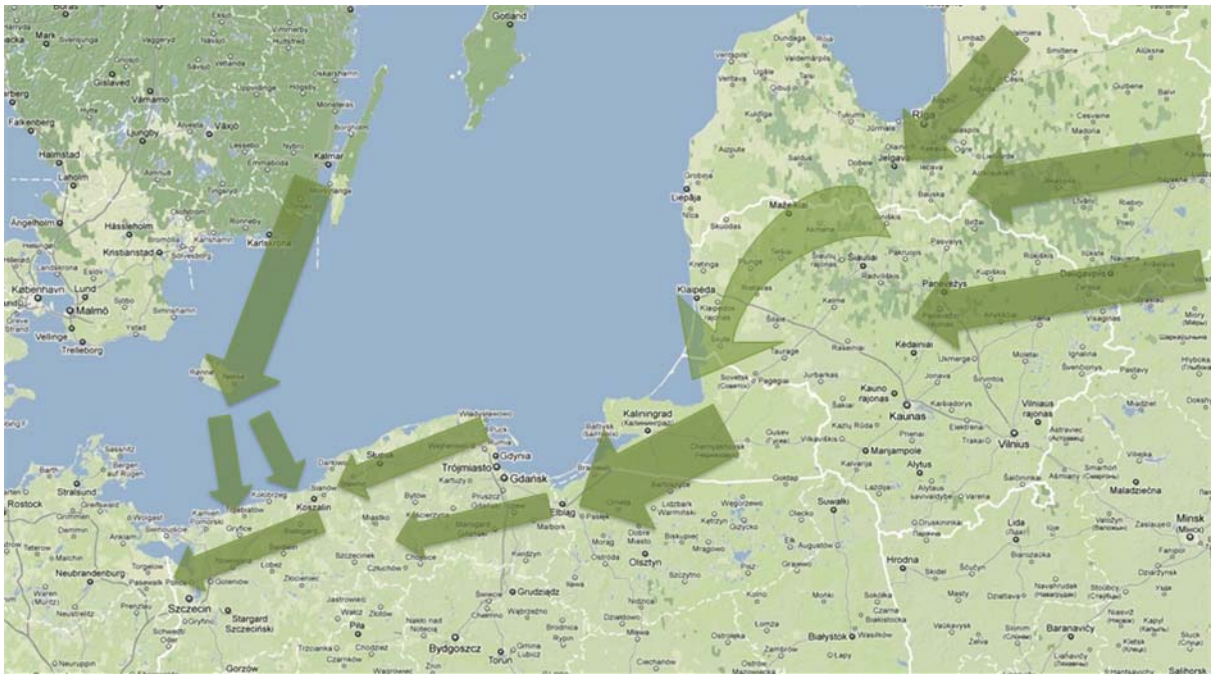

Figure 13 Bird migration routes in the South Baltic Sea region [Source: Newton I., 2008. Migration Ecology of Birds].

Forests

Forest is a dominant form of natural vegetation within the South Baltic Sea, that has various functions: natural, economic and social. Forests serve as a framework for the protection of biodiversity and preservation of ecosystem services, and provide natural habitats for plant and

animal life, protection against soil erosion and flooding, carbon sequestration, climate regulation and have great recreational and cultural value.

Most forests, both in Europe and in the Programme eligible area, are heavily exploited. Such forests typically lack higher amounts of deadwood and older trees as habitats for species, and they often show a high portion of non-native tree species.

The South Baltic area is dominated by agricultural and forest areas. In Sweden, forests cover most of the coastal regions. In Denmark and Germany, spatial planning is dominated by agricultural land. Poland and Lithuania are characterised by a mixed structure of agricultural land and forests. The figure below shows spatial distribution of forest areas. Due to climatic conditions, the region is dominated by coniferous and mixed forests.

The outlook of the tree health is significantly determined by climate change. Changes in the amount of precipitation will be particularly important. If the total precipitation drops with the growth of the average annual temperature, the level of stand health will be reduced.

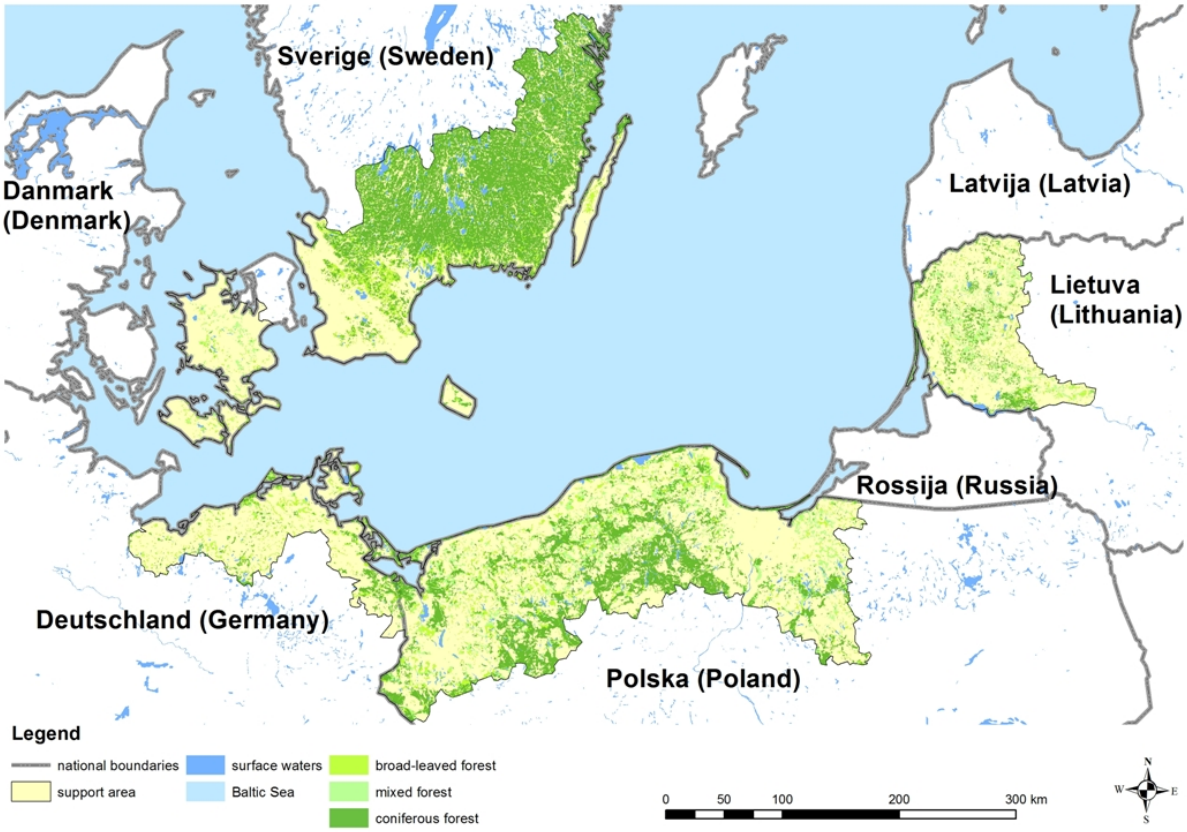

Figure 14 Forest types in the Programme eligible area [Source: Own work based on data from Corine land cover 2006, http://www.eea.europa.eu/data-and-maps/data/ and data from OpenStreetMap contributors, http://www.openstreetmap.org]

Soils

Soils have many functions very important and necessary for the existence of human and ecosystems. They constitute a source of food and biomass. They are a natural habitat for many organisms, accumulate genetic resources, as well as store, filter and transform many substances (water, nutrients and carbon). In order to enable performance of the above functions, it is very important to ensure their proper quality.

The analysed area is dominated by soil cover typical for glacial areas (Figure 15). The appearing variety of podzolic, fawn, brown and mad soils involves different agricultural possibilities of their use. Due to a significant diversification of terrain relief in this area (upland areas of Germany, Poland and Lithuania, rocky coast of Sweden), a substantial part of the soil is exposed to wind and water erosion. The most important factors leading to the formation of erosion processes include improperly conducted drainage systems, elimination of copper in the process of combining small farms, removal

of hedges, shrubs and woodlots, intensive grazing of animals, poor location of roads, cultivation of steep slopes and mid-slope valleys, and cultivation along the slope. Most of these factors affect biodiversity, and that should further motivate to counteract these events in land areas used for agricultural purposes.

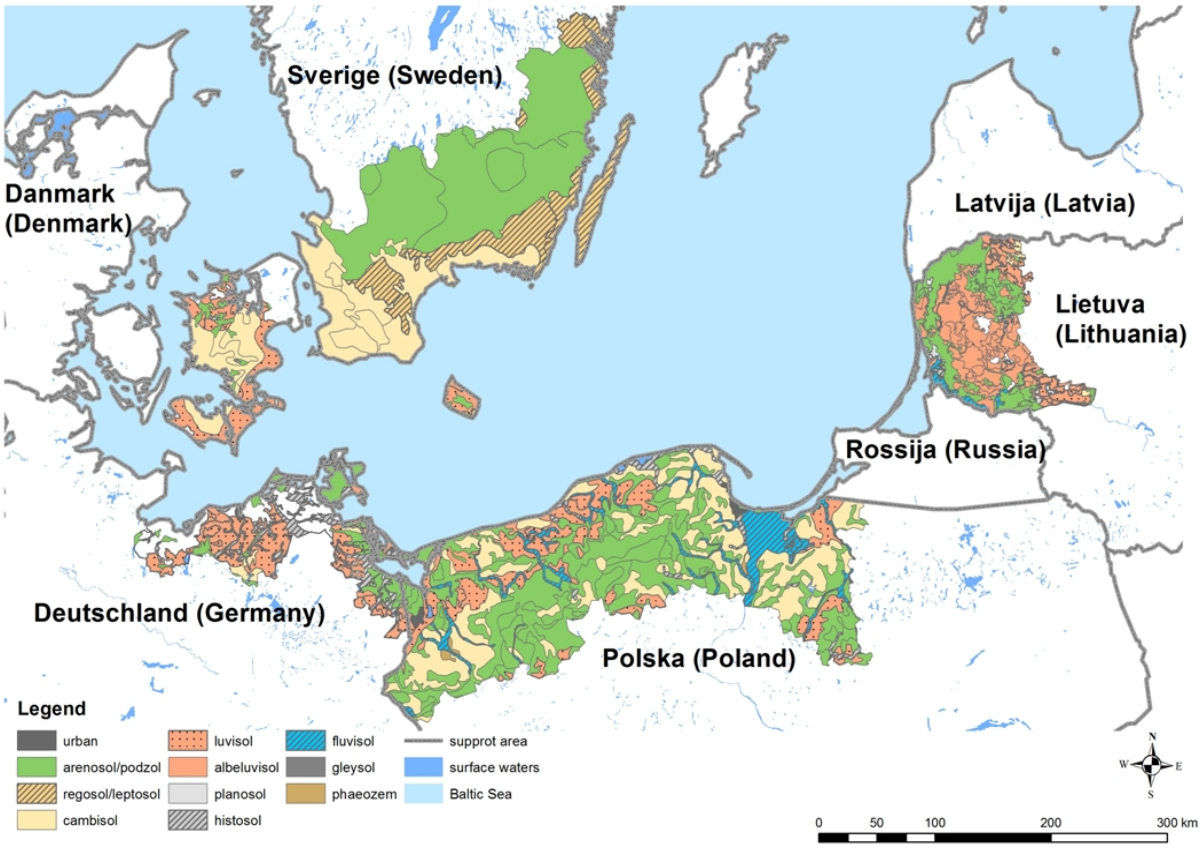

Figure 15 Soil types in the Programme eligible area. [Source: Own work based on data from the European Soil Database http://eusoils.jrc.ec.europa.eu].

Ecosystem services

Biodiversity is the foundation of ecosystems. In turn, ecosystems, due to their variability, have many important functions used on a daily basis by man. Human requirements regarding the environment change in the course of time, which has been particularly noticeable over the past few years.

Recent trends in Europe show an increase in demand for products from organic farms. The importance of the need to adjust the flow of water in rivers and wetlands also increases. On the other hand, the area of most ecosystems report an increase in demand for wood, and recreation and tourism services. However, it shall have influence on the functioning of ecosystems.

At the same time, there is still a low level of knowledge on other ecosystem services, especially those related to the supply of raw materials for medical purposes, genetic resources, the spread of seeds or control of pests.

In the Baltic Sea region, the situation is similar to the European one, however, it seems that costs of ecosystem services are less frequently, if at all, taken into account in the estimation of the cost of the planned projects. This may be an indication for the development of appropriate criteria for the selection of investment projects implemented under the Programme.

The table below shows **the key risks** identified during the diagnosis of the state of the natural environment on the basis of environmental monitoring carried out by HELCOM and the European Environment Agency.

Table 5 The key drivers of changes in the nature.

Changes in the nature	Drivers of change
Loss of non-forest and wetland birds habitats.	Improper land reclamation, excessive fertilisation, abandonment of agricultural use, inadequate hydraulic engineering structures, regulation of rivers and streams, construction of communication infrastructure, urbanisation. Lack of sufficient information on the distribution of endangered habitats and species.
Loss of coastal habitats for marine mammals and birds	Water sports: kitesurfing, windsurfing, jet-skis, yachts and other ones causing disturbance of birds and marine mammals in feeding, resting and breeding sites. Movement of vessels causing noise and disturbance
Unification of marine habitats.	The biggest problem of conservation of marine habitats is their unification, i.e. standardisation of the physical and biological characteristics over large areas. The key drivers of changes are alteration of physical and chemical properties of water.
Natural seabed transformation, destruction of habitats	Extraction of sand and gravel, hydropower constructions, construction of pipelines, oil exploration, construction of wind farms.
Threat to populations of	By-catch in fishing nets is considered the most significant threat to

Changes in the nature	Drivers of change
protected species of marine mammals and diving birds.	biodiversity of marine mammals, and can be a driver of changes in the food web. By-catch is also a major driver of pressure of human activities on marine species of diving birds.
Fragmentation of habitats, including breaking down of ecological corridors.	Construction of communication and tourism infrastructure, urbanisation, inadequate hydraulic engineering structures, regulation of rivers and streams. Lack of sufficient information on the distribution of endangered habitats and species.
Distortion of composition of species in natural habitats.	Drainage, investments destructive and transformative for the environment (road, rail, hydrotechnical), construction of wastewater treatment plants, rehabilitation of degraded areas, introduction of alien species, 'escape' of species. Development of tourism and communication contribute to the spread of alien species.
Secondary succession of non-forest habitats.	Abandonment of agricultural use, especially the abandonment of meadow use.
Qualitative and quantitative changes of natural habitats due to water eutrophication.	Excessive fertilisation and use of plant protection products, the lack of appropriate treatment systems in the field of wastewater management.
Mechanical damages to the rare plants and natural habitats.	Development of tourism and recreation.
Degradation of landscape features.	Construction of communication and tourism infrastructure, urbanisation.

The above changes also impose climate change, manifested mainly as floods, hurricanes and droughts, which require the preparation of appropriate response measures and a long-term strategy.

Achievement of the natural goals vs. the Programme

After the diagnosis of the condition of the natural environment the following key environmental goals emerge:

- protection and restoration of the proper status of species and habitats,

- reduction of pressure on the natural environment, associated with the use of the Baltic Sea waters and coastal areas,
- continuing research on the diagnosis of the state of protected species and habitats, and the mechanisms provoking deterioration of their condition,
- continuing works on management plans for Natura 2000 and BSPA, and on enforcement of their content,
- ensuring the maintenance of ecological connectivity between protected areas,
- stop of the invasion of alien species,
- inhibition of the degradation of natural and landscape values.

Realisation of these goals will contribute to the simultaneous achievement of the objectives established at the EU level in the Strategy *for the conservation of biodiversity for the period up to 2020*[73].

4.3. CLIMATE CHANGE

Impact of climate change is becoming increasingly felt. The average annual global temperature, that currently stands at around 0.8°C above the pre-industrial levels, continues to grow[74]. Natural processes and precipitation patterns are changing, glaciers are melting, the sea level is rising. In order to avoid the most serious threats of climate change, especially irreversible effects on a large scale, as agreed under the Convention on Climate Change, global warming should be limited to a maximum of 2 °C above pre-industrial levels. Over the last decade (2002-2011), the European land surface temperature was on average 1.3°C above the pre-industrial levels, which means that the temperature in Europe rises faster than the global average. A greater frequency has been reported of some extreme weather events together with more frequent heat waves, forest fires and droughts. Higher precipitation (including torrential rain) and floods are predicted together with an increased risk of storms and coastal erosion. A larger number of such events will probably lead to an increase in the scale of natural disasters, which in turn will result in significant economic losses and problems related to public health; will also increase the number of fatalities.

[73] Our life insurance, our natural capital: an EU biodiversity strategy to 2020, COM (2011) 244.
[74] EEA Report No 12/2012. *Climate change, impacts and vulnerability in Europe 2012,* (http://www.eea.europa.eu/publications/climate-impacts-and-vulnerability-2012)

The upward trend in average annual temperature is noticeable on both the meteorological stations located on the outskirts of cities, as well as those located in the areas of limited anthropogenic impacts.

According to recent research[75] the average temperature of the Baltic Sea surface waters increases up to 1^0C per decade.

As part of the *National Strategic Plan for Climate Change Adaptation for sensitive sectors and areas by 2020 and outlook 2030, after E. Siwiec*,[76] the potential damages caused by weather phenomena were specified for the most vulnerable sectors.

Table 6 Weather and climatic events causing social and economic damages [Source: National Strategic Plan for Climate Change Adaptation for sensitive sectors and areas by 2020 and outlook 2030, after E. Siwiec (IOŚ- PIB)]

Sector	Agriculture, biodiversity, water resources	Forestry	Health, local community	Infrastructure
Event that causes damages	• flood • hurricane • lightning bolt (lightning) • drought • negative effects of wintering • spring frost • torrential rain (causing flooding, landslides) • hail	• flood • strong winds (hurricane, tornado) • drought • flooding and landslides (due to torrential rain) • cap of snow, intensive snowfalls • lightning	• heat waves • cold waves • extreme events causing psychosocial damages (flood, strong winds, hail)	• flood • flooding • hurricane • lightning • hail

[75] Climate change in the Baltic Sea Area HELCOM thematic assessment in 2013, Baltic Sea Environmental proceeding No. 137

[76] http://www.mos.gov.pl/g2/big/2013_03/e436258f57966ff3703b84123f642e81.pdf

The effects listed in the table can be supplemented by additional tropospheric ozone pollution occurring as a result of heat waves and air pollution and its significant effects on health and negative impact of the temperature on the survival of many species.

Eutrophication of inland and marine waters will increase with the temperature growth, increasing threat to life and health as a result of thermal stress and increase of air pollution (such as ozone). Power demand will increase in the summer. The cooling conditions of thermal power plants will worsen, and that may cause limitation of energy production and other events described in the *National Strategic Plan for Climate Change Adaptation for sensitive sectors and areas by 2020 and outlook 2030*[77].

The analysis clearly shows that in the given period losses caused by weather events are increasing, and taking into account the projected severity of these phenomena, will rise further due to the increasing concentration of greenhouse gases in the atmosphere.

Main anthropogenic source of GHG emissions in the region are combustion processes (mainly coal) in the eastern part of the region and transport emissions (in the entire region).

Given the difficulties in coordination of a global agreement on reducing greenhouse gas emissions, and the emissions growth trend, it is impossible to count that in the foreseeable future greenhouse gas emissions will be reduced so as to curb climate change. In this situation, the priorities should include possible adaptation to these changes. From the point of view of the range of climate issues, the most important measures that could be implemented under the Programme include:

- supporting all actions related to adaptation to climate change,
- supporting the development of renewable energy sources in order to not only meet the obligations in relation to the Directive 2009/28/EC on the promotion of the use of energy from renewable sources but to exceed certain share in the production, because it is beneficial for many reasons (positive impact on public health by eliminating carbon-intensive burning of coal and other). This could be taken into account eg, while modernising objects of cultural heritage and tourism;
- supporting all efforts to increase energy efficiency, in scope of energy use and production,
- supporting efforts to reduce greenhouse gas emissions to tackle climate change on a global scale.

[77] Ibid.

The above mentioned courses of action should be reflected in the criteria for impact assessment of the actions set out in the Programme.

4.4. RESOURCES AND WASTE

Environmental resources enable proper functioning of the human and determine the quality of life. The current economic development in European countries is closely linked to the use of natural resources. There are numerous raw material resources in the Baltic Sea. The following resources occur: natural gas, crude oil, amber and mineral aggregates.

According to the *Baltic Sea Action Plan*[78] natural gas and crude oil occur along the south-eastern coast of the Baltic Sea, at depths of 2-6 km. Research on oil exploration showed that the most promising deposits of this material are located in the Polish economic zone - north of Rozewie. Extraction of oil from this field is marginal (about 1,000 tonnes daily). Currently, the exploration of oil still continues, also in other regions of the Baltic Sea, i.a. in the Russian zone, in the Kaliningrad region. Another natural resource of the Baltic Sea is gas.

The Baltic Sea is also rich in building materials, such as: boulders, gravels, pebbles and sand. They are operated mainly by Sweden, Denmark, Finland and Latvia. In the Polish zone of the Baltic Sea, resources of these materials appear in the area of Slupsk Bank, Oderbank Plateau and near Koszalin. Exploitation of these resources must be conducted in accordance with the principles of conservation because of the risk of breach of environmental sustainability, as well as the destruction of valuable plant and animal communities.

The largest amber deposits are located along the southern coast of the Baltic Sea, in the area from Chlapowo to Sambia Peninsula (about 200 km^2). At present amber is exploited on an industrial scale only in the area of the Sambia Peninsula (Kaliningrad).

Besides, the Baltic Sea area contains also heavy minerals (magnetite, rutile, zircon, garnet). They occur along the southern coastal area of the Baltic Sea in the form of placer deposits of a small surface area and low thickness. The Baltic Sea are also includes about 100 million tonnes of ferromanganesian nodules. Currently, exploitation of iron and manganese land deposits satisfies the needs, so there is no need to acquire them from the nodules of the Baltic Sea, however, these deposits can become a valuable source of metals in the future.

[78] http://www.bsap.pl/bogactwa-naturalne-morza-baltyckiego

In order to link the activities associated with the use of resources and waste, two EU strategies were developed: strategy on the sustainable use of natural resources and strategy on waste prevention and recycling.

In recent years, a steady increase has been reported in the amount of used resources and generated waste. Studies report that the process of resource depletion is ongoing, and waste is more and more treated as a source of raw materials. Therefore, the EU is taking actions to 'separate' economic growth from resource use and waste generation, and to reduce pressure on the environment. Efforts are made to implement sustainable patterns of consumption and production.

The most important waste management goal shall include separation of the link between economic growth and waste generation, and the use of waste instead of raw materials. The European Union establishes legal framework to control the entire life cycle of waste. Undertaken activities can be grouped into two main phases:

- waste prevention,
- waste management,

Waste management should adopt the following waste hierarchy:

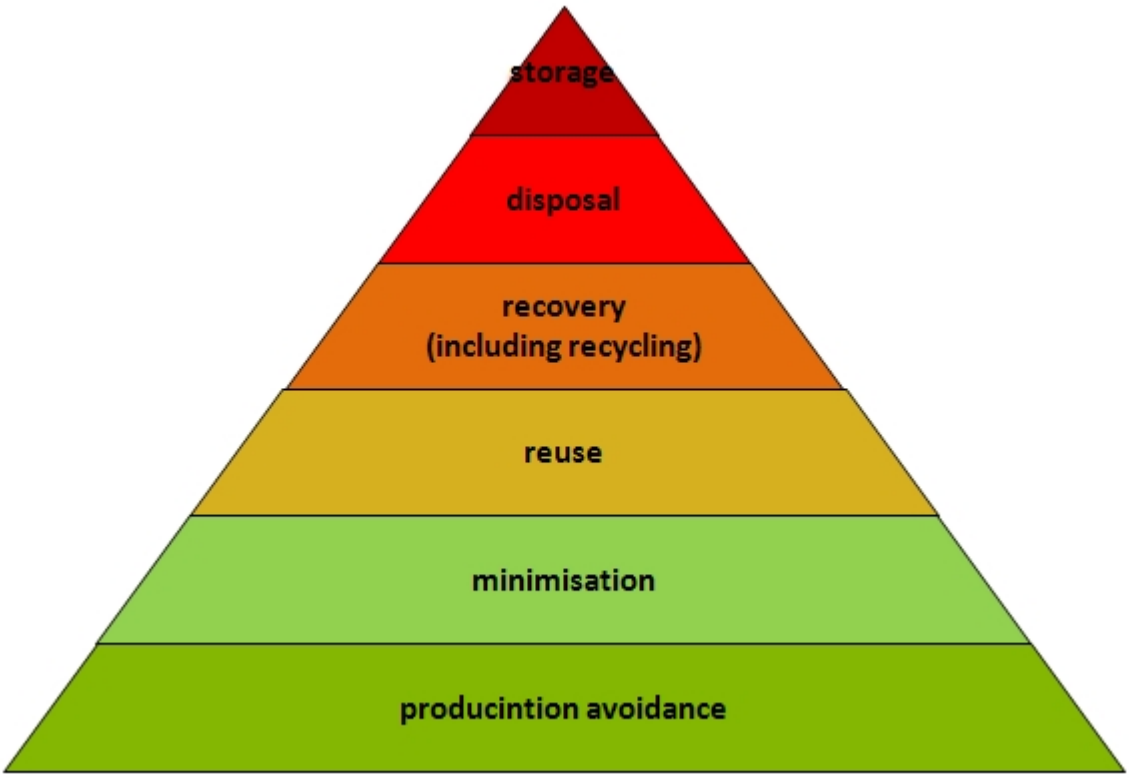

Figure 16 Waste hierarchy. [Source: Strategy 'Energy security and the environment'. Outlook 2020, the Ministry of Economy and Ministry of Environment in Poland]

The list below shows main needs and issues related to resource protection and waste management, that should be applied in the Programme eligible area:

- limiting the use of resources for the purpose of waste use,
- protection against infrastructure-based development of documented, strategic deposits, that will enable the use of these resources in the future.
- increase of effectiveness to prevent waste,
- raising the rate of separate collection of waste,
- increase in recovery of industrial waste,
- improvement of the quality of recycled waste,
- solving problems with the management of the increasing amount of sewage sludge,
- reducing of the amount of wastes to be stored and diverting biowaste from landfills.

4.5. ENVIRONMENT, HEALTH AND QUALITY OF LIFE

The state of the environment and trends of variability

The European data indicate a decrease in the pollution of water and air in the last 20 years. Among others, a significant decrease in the concentrations of sulphur dioxide and carbon monoxide was observed in the air, together with lower concentrations of nitrogen oxides and particulates. With the introduction of unleaded petrol, the concentration of lead also significantly decreased.

However, the quality of air and water remains insufficient. Particularly difficult is the situation of the urban population exposed to excessively high levels of certain air pollutants. The most serious health consequences resulting from exposure to the presence of particulate matter, nitrogen dioxide, benzo(a)pyrene and ozone in the air, which is associated with the shortening of life expectancy, acute and chronic respiratory diseases, cardiovascular diseases and other ailments.

PM_{10} and $PM_{2.5}$ dust pollution

For many years, exceedances of PM_{10} and $PM_{2.5}$ standards have been the most important problem of air quality. These exceedances refer to both daily (e.g. PM_{10} - 50 ug/m^3 <35 times) and annual (PM_{10} - 40 µg/m^3) and relate primarily to inner-city areas of large cities and agglomerations.

Exceedances of the daily PM_{10} concentrations usually occur in winter, and are commonly associated with dust emission from individual building heating and transport. Some areas are marked by the influence of primary emissions coming from industrial plants, heat and power plants, as well as fugitive emissions from agricultural activities.

The below map shows, that the situation in terms of particulate pollution in the Programme eligible area is better in relation to other more polluted regions of Europe, but many of the WHO standards are exceeded, and in a few places even the EU standards are exceeded.

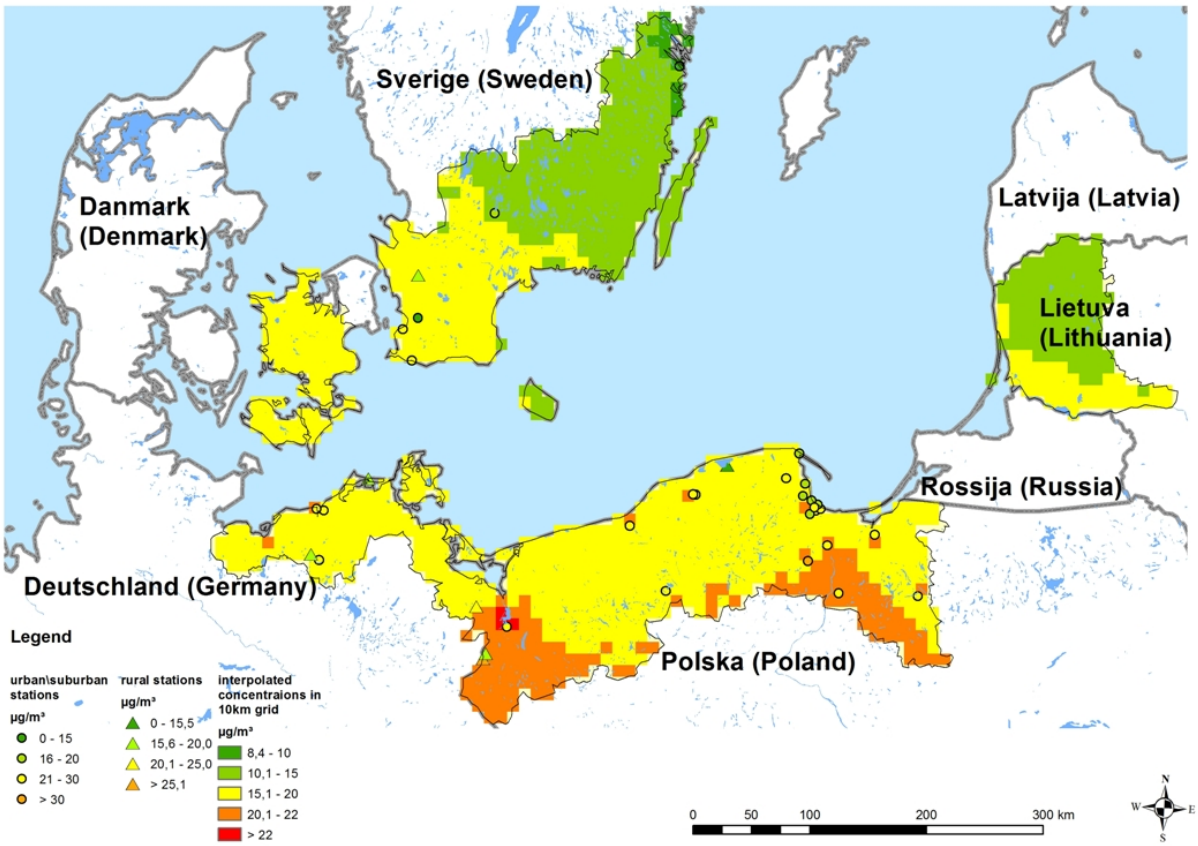

Figure 17 Annual mean concentration of PM_{10} in 2010 in the Programme eligible area [Source: Own work based on data from AirBase 7 and Interpolated air quality data *www.eea.europa.eu/data-and-maps/data/*]

NO_2 air pollution

Nitrogen dioxide is mainly formed by oxidation of nitrogen oxides emitted during combustion processes at high temperatures and direct emissions from Diesel engines. The main source of these pollutants are car engines and thermal power plants. Exceedances of the EU standards (hourly average of 200 µg/m^3 <18 times and average annual 40 µg/m^3) take place only in the larger cities in the areas of forced movement.

The figure below shows areas of the greatest concentration of nitrogen dioxide in the area covered by the analysis.

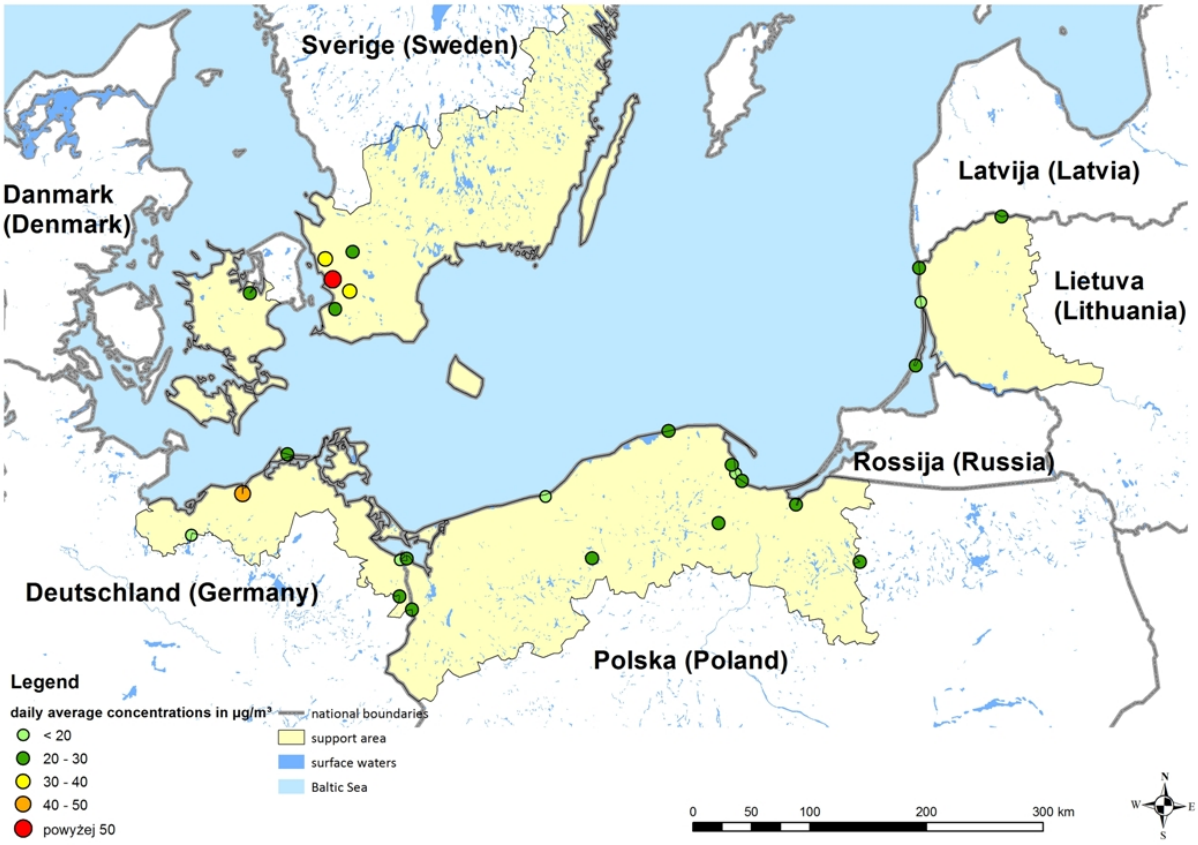

Figure 18Annual mean concentration of NO_2 in 2010 in the Programme eligible area [Source: Own work based on data from AirBase 7]

O_3 air pollution

The concentration level of ozone in a given period and location depends primarily on the meteorological conditions (intensity of solar radiation, air temperature), and on the degree of ozone precursors pollution (mainly NOx, NMVOCs), from which ozone is produced as a result of photochemical processes. The degree of ozone air pollution is measured by ozone concentration indicators related to different time scales. Commonly used indicator is the annually determined number of exceedances of 120 µg/m^3 by daily maxima of 8-hour concentrations. However the allowable number of exceedances is 25. Measurement data and the modelling results for the period 2009-2011 indicate that there were no exceedances in the Programme eligible areas, determined from a health perspective. However, the reported concentrations may adversely affect plants, especially forests.

Benzo(a)pyrene

Benzo(a)pyrene is formed during an incomplete combustion of various fuels. Its main sources are: waste incineration (especially in households), wood combustion, transport and steel production processes. Within the Programme eligible area, exceedances are reported mainly in Poland, and to a much lesser extent in Lithuania.

Noise

The main threats affecting the status of the acoustic climate is the impact of traffic noise. Traffic noise is a threat primarily in urban areas. In the area covered by the Programme, exceedances of environmental noise limits are observed in most cities. In the case of high and highest levels, after the increase in the number of such cases by the end of the 90s of the twentieth century, their number began to decline slowly. Analyses indicate a slow, although in some cases significant (especially in relation to main lines), reduction of the exposure of the population to noise emitted by rail traffic. The main reasons involve reduction in traffic, revitalisation of many sections of railway lines and systematic, albeit slow, replacement of rolling stock with a less noisy one.

Aircraft noise in areas surrounding airports is an acoustic event harmful to people and the environment. A systematic increase can be expected in the level of noise from air traffic due to the development of civil aviation. It will, however, be hampered by the implementation of new technologies.

The quality of surface water and groundwater

Section 4.8 contains comprehensive information on the quality of surface water and groundwater.

The following present the main issues identified in the area of environmental quality and health impact.

Table 7 The key issues related to environmental quality in the Programme eligible area.

Environmental quality issue	Drivers of change
Air	
Exceedances of normative values of PM_{10}, $PM_{2.5}$, benzo(a)pyrene and NO_2.	Emissions from individual heat sources, individual waste incineration, traffic emission.
Exposure of residents of some cities (including sensitive groups) to excessive concentrations of	Dense urban setting, obsolete heating systems, socio-economic problem of the transition to

Environmental quality issue	Drivers of change
air pollutants that cause serious health effects.	cleaner forms of thermal energy (especially in Polish part of the area).
The risk of long-term adverse health effects even at exposure below the pollutant's limit values (e.g. NO_2).	Too heavy road traffic in city centres, emissions of pollutants into the air.
Noise	
Exceedances of environmental noise limits observed in cities.	Sources of traffic noise emission (intensive road traffic, trams, less frequently rail).
Growing negative impact of aircraft noise.	Dynamic growth in international air traffic.
Water	
Risk of exceedances of limits of nitrates in drinking water	Penetration of nitrates from agricultural fields into the soil, and then into surface water and groundwater.
Lack of access of inhabitants to collective supply of drinking water.	Infrastructural gaps, especially in small towns.

4.6. WATER RESOURCES, FLOOD AND DROUGHT PREVENTION AND WATER MANAGEMENT ISSUES

Due to the specification of the Programme eligible area, the characteristics of surface waters include the Baltic Sea and rivers flowing into it. About 17% of the Europe's surface area is located within the area of the Baltic Sea basin. About 250 rivers flow into the sea, of which the largest are: Vistula, Neva, Oder, Neman, Lule, Gota, Kemi, Ångerman and Daugava. The largest rivers within the South Baltic Sea region include Neman, Vistula and Oder.

Characteristics of the Baltic Sea

The Baltic Sea is an inland sea that connects to the North Sea and the Atlantic Ocean through external (Kattegat and Skagerrak) and internal (Sund, the Great Belt and the Little Belt) straits. The coastline of the Baltic Sea, with a length of about 8.1 thousand km, is very diverse, and its significant geographical feature is characterised by a variety of coastal types. A characteristic feature of the northern coast of the Baltic Sea are skerries - small, rocky islands. The southern and eastern shores

mostly consist of sandy beaches, long strands of dunes and cliffs - steep slopes sharply falling into the water. Precipitous sea shore is formed by strong winds, waves and storms.

The Baltic Sea basin includes the following countries: Denmark, Germany, Poland, Russia (Kaliningrad Region), Lithuania, Latvia, Estonia, Finland and Sweden. The quantity and the quality of freshwater flowing into the Baltic Sea is of crucial importance for the water balance of the basin and the water status. Of great significance is also the surplus of freshwater inflow to the basin over evaporation, which further reduces the salinity of the basin. A positive water balance of the Baltic Sea means that there is a constant runoff of the Baltic water into the neighbouring North Sea. During strong westerly winds the water is pumped from west to east through the straits. The inflow depends on environmental conditions - large inflows occur once every few years and are crucial for salinity, oxygenation and temperature of water, and for mixing the waters of the Baltic Sea with more saline and colder waters of the North Sea.

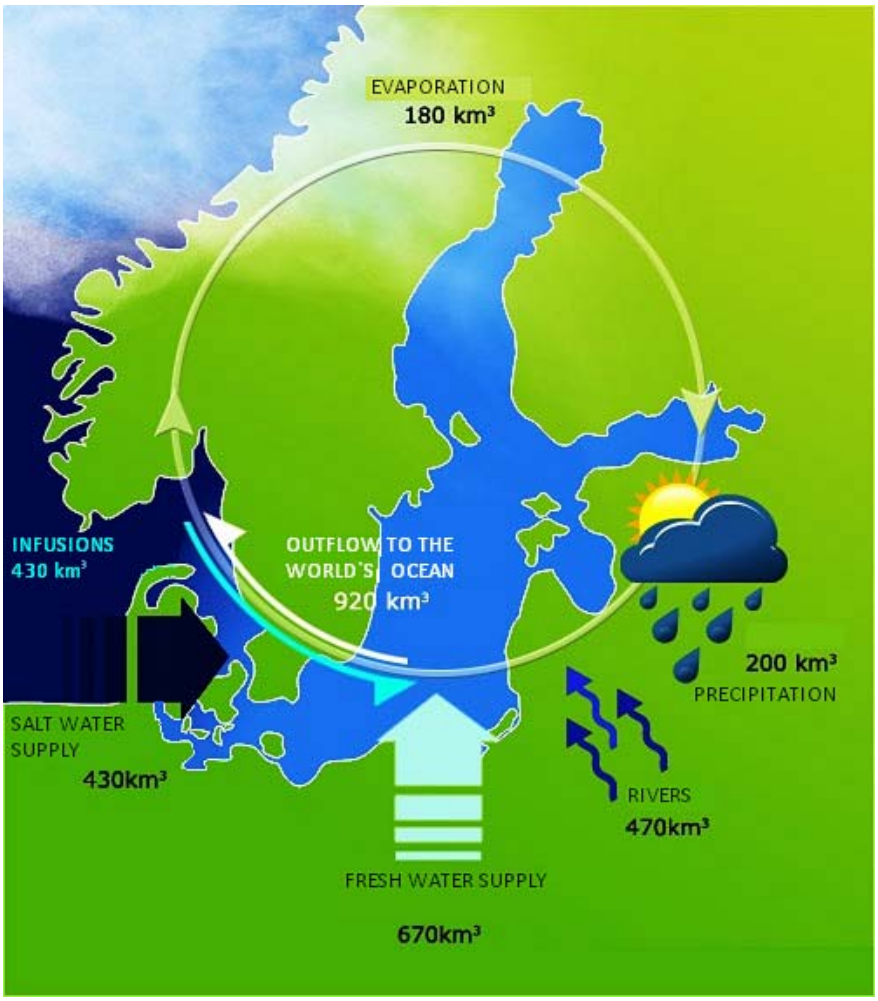

Figure 19 Water balance of the Baltic Sea. [Source: www.naszbaltyk.pl]

A characteristic feature of the Baltic Sea is the phenomenon of vertical stratification of water, where two basic layers can be distinguished:

- low-salinity surface water, well mixed and oxygenated (temperature varies depending on the season, from 0 °C to 20 °C);
- deep water with a salinity of 12-22 ‰ (with a constant temperature of 4-6 °C).

The intermediate layer, a so-called halocline, is characterised by a rapid increase in salinity and hence the density of water. It is a barrier that limits mixing of surface and bottom waters, and that is why the deep waters are less oxygenated. In the greatest depths of the Baltic Sea total oxygen consumption occurs leading to formation of toxic hydrogen sulphide. As mentioned, increased oxygenation of water in the deepest zones of the Baltic Sea takes place only through inflows of salty water from the North Sea, that occur every few years, during heavy storms.

Geomorphometrical features of the basin, as well as its hydrological and biological properties are conducive to its relatively low resistance to anthropogenic pressure.

Nine highly developed industrial and agricultural countries (with a total population of 80 million people) are located in the area of the Baltic Sea basin. Most hazardous substances fall into waters of the southern and eastern Baltic Sea with the waters of large rivers (the Oder, the Vistula and the Niemen). Estuaries of those rivers are the most polluted waters in the Baltic Sea.

State of aquatic environment

The main threat to marine waters is nutrient enrichment. It can lead to biodiversity loss, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.

To quote the report, *The European Environment, 2010. State and Outlook*[79] decrease in oxygen saturation relates to all EU marine waters. It has escalated dramatically over the past 50 years, increasing from about ten documented cases in 1960 to at least 169 in 2007. It is expected to become more widespread with increasing sea temperatures induced by climate change. In Europe, the problem is particularly noticeable in the Baltic Sea, where the current ecological status is considered, in majority, from weak to poor[80].

[79] EEA 2010. The European Environment - State and Outlook 2010. Synthesis, European Environment Agency, Copenhagen, 2010 (SOER 2010).

[80] HELCOM 2009, Eutrophication In the Baltic Sea - An integrated thematic assessment of the effects of nutrient enrichment and eutrophication In the Baltic Sea Region, BSEP No 115A - 43

The main source of nutrient is the pollution generated on land and brought to the sea with the river waters. That pollution has its origin in agricultural activities, insufficiently treated urban wastewater and natural processes.

Analysing the status of surface waters in the EU (EEA 2012[81]) it is worth noting, that over the past 20 years there has been an improvement in water quality, mainly as a result of the implementation of Directive 91/271/EEC of 21st May 1991 on urban waste water treatment. This improvement is also seen in the waters of the Baltic Sea (the test results obtained for nitrogen indicate that in recent years, its concentration has maintained at a constant level, much lower than at the end of 1990s)[82].

However, achieving good ecological status of surface waters by 2015 (assumed in the Water Framework Directive) will still be failed According to the EEA report 9/2012 concerning the status of waters in the European Union, the first series of river basin management plans shows that more than half of the water bodies does not achieve good ecological status (Figure 20).

[81] EEA 2012, European Waters - current status and future challenges. Synthesis. EEA Report No. 9/2012
[82] www.bsap.pl

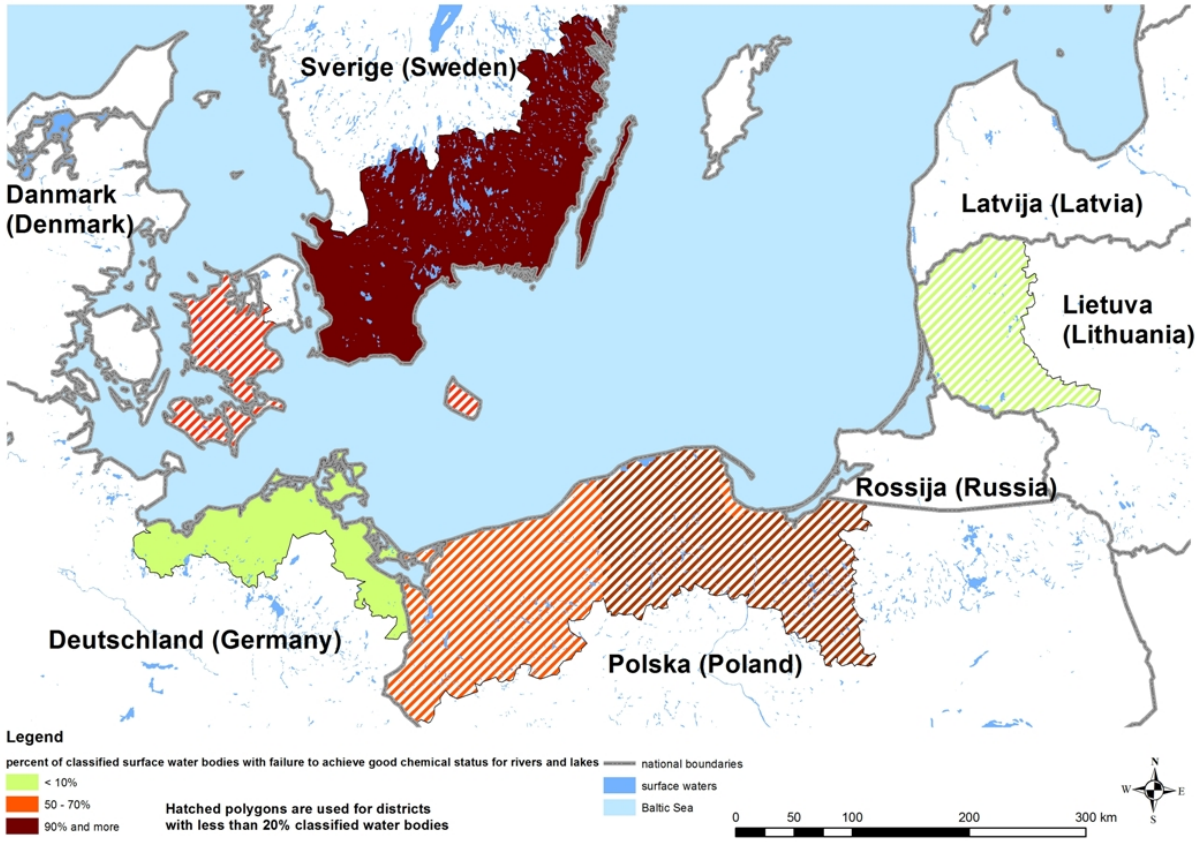

Figure 20 Percent of classified surface water with failure to achieve good chemical status in the Programme eligible area. [Source: Own work based on EEA data http://www.eea.europa.eu/data-and-maps/figures/chemical-status-of-rivers-and]

Progressive eutrophication (i.e. the increase in the concentration of nutrients in the waters of the Baltic Sea) is considered the most serious threat to water quality and the aquatic environment. Nutrient loads are introduced into the Baltic Sea with river waters inflows (in total about 75% of the nitrogen load and at least 95% of the phosphorus load are introduced into the Baltic sea by rivers and so-called direct water discharges)[83], and a result of deposition from the atmosphere, surface runoff from diffuse sources and from vessels. Additionally, the nutrient loads deposited in the seabed mud can be put into material circulation again as a result of vertical mixing of the waters[84].

[83] Source: Ministry of the Environment, 2010, Preliminary National Implementation Programme of the Baltic Sea Action Plan

[84] Source: BASP http://www.bsap.pl

The tables below show gradual decrease in the load of total nitrogen and total phosphorus discharged into the Baltic Sea.

Table 8 Total phosphorus load volumes, calculated respectively per basin surface area and per capita of countries in the Baltic Sea basin area (Source: Ministry of the Environment, 2010, Preliminary National Implementation Programme of the Baltic Sea Action Plan)

Country	**Total phosphorus load volumes discharged by Baltic countries into the Baltic Sea**								
	[t/year]			[t/km^2]			[kg/person]		
year	1995[1]	2000[2]	2005[3]	1995[1]	2000[2]	2005[3]	1995[1]	2000[2]	2005[3]
Sweden	4718	4969	3552.4	0.011	0.012	0.008	0.55	0.58	0.42
Russia	7107	4623	4782.6	0.02	0.013	0.013	0.67	0.44	0.45
Poland	14208	12645	8910.7	0.04	0.036	0.025	0.34	0.3	0.21
Finland	3850	4840	3382.4	0.015	0.019	0.014	0.94	1.18	0.83
Lithuania	1405	1896	1325.7	0.012	0.016	0.011	0.23	0.31	0.22
Latvia	2184	2207	2762.3	0.017	0.017	0.021	0.47	0.47	0.59
Estonia	1269.6	965	1763	0.029	0.022	0.04	0.85	0.65	1.18
Denmark	2598	1857	1717.7	0.078	0.056	0.051	0.58	0.41	0.38
Germany	578.5	487	387.9	0.025	0.021	0.017	0.23	0.2	0.16

1) Data acc. to: The Third Baltic Sea Pollution Load Compilation (PLC-3) HELSINKI COMMISSION Baltic Marine Environment Protection Commission.
2) Data acc. to: The Fourth Baltic Sea Pollution Load Compilation (PLC-4 HELSINKI COMMISSION Baltic Marine Environment Protection Commission.
3) Data based on annual reports submitted to HELCOM by 9 Baltic countries.

Table 9 Total nitrogen load volumes, calculated respectively per basin surface area and per capita of countries in the Baltic Sea basin area (Source: Ministry of the Environment, 2010, Preliminary National Implementation Programme of the Baltic Sea Action Plan)

Country	Total nitrogen load volumes discharged by Baltic countries into the Baltic Sea								
	[t/year]			[t/km^2]			[kg/person]		
year	1995[1]	2000[2]	2005[3]	1995[1]	2000[2]	2005[3]	1995[1]	2000[2]	2005[3]
Sweden	130872.12	153074	103774.3	0.303	0.355	0.241	15.35	17.95	12.17
Russia	84646	79188	55110.6	0.238	0.222	0.155	7.98	7.47	5.2
Poland	214718	191166	146303	0.61	0.543	0.415	5.11	4.55	3.48
Finland	70273	101659	78435.3	0.282	0.408	0.315	17.18	24.85	19.18
Lithuania	36823	47885	43084.9	0.314	0.408	0.367	6.05	7.86	7.14
Latvia	91065	67493	59681.1	0.708	0.525	0.464	18.02	13.36	12.76
Estonia	46467.3	26874	32583.3	1.066	0.616	0.747	31.16	18.02	21.85
Denmark	68680	58923	42619.8	2.054	1.762	1.275	15.23	13.06	9.45
Germany	21371.1	18605	17573.9	0.933	0.813	0.767	8.58	7.47	7.05

1) Data acc. to: The Third Baltic Sea Pollution Load Compilation (PLC-3) HELSINKI COMMISSION Baltic Marine Environment Protection Commission.
2) Data acc. to: The Fourth Baltic Sea Pollution Load Compilation (PLC-4 HELSINKI COMMISSION Baltic Marine Environment Protection Commission.
3) Data based on annual reports submitted to HELCOM by 9 Baltic countries.

The figure below shows spatial distribution of phosphate and nitrate concentrations in the Programme eligible area.

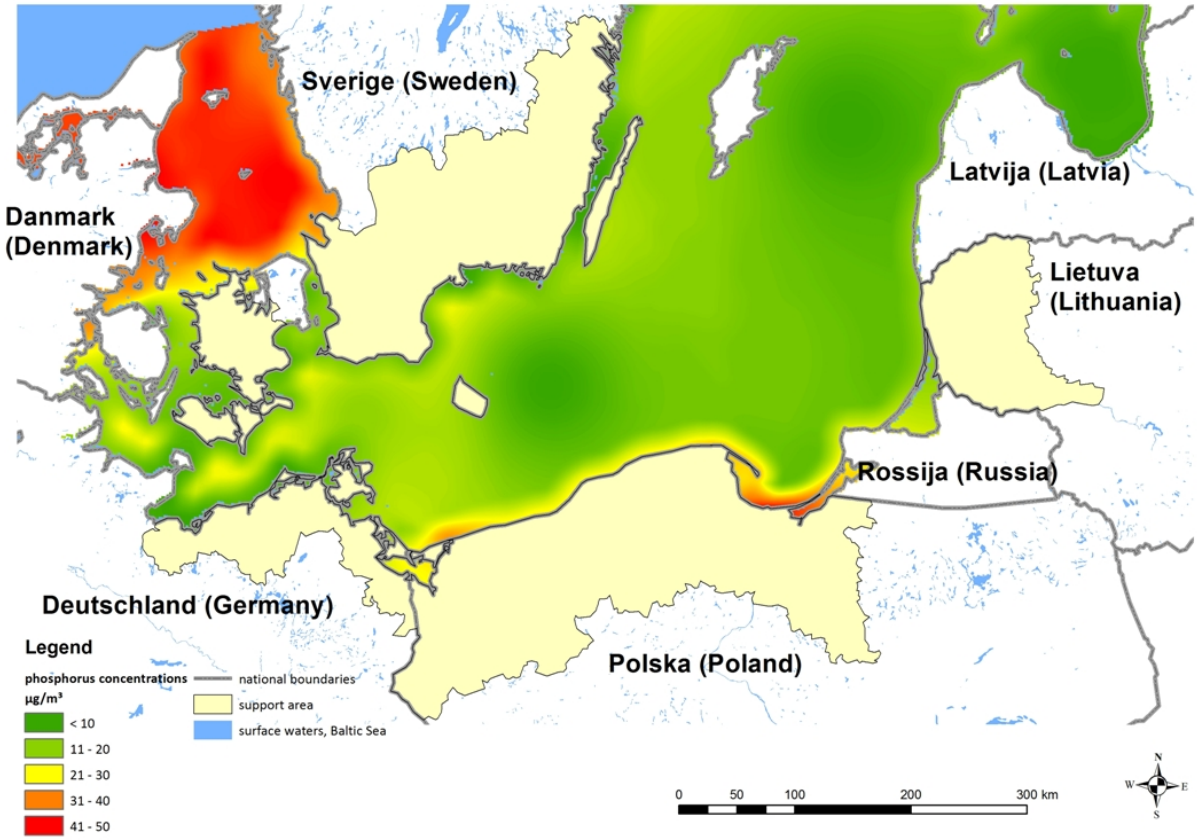

Figure 21 Spatial distribution of phosphate concentrations in the Programme eligible area. [Source: Own work based on HELCOM data http://maps.helcom.fi/website/mapservice/index.html]

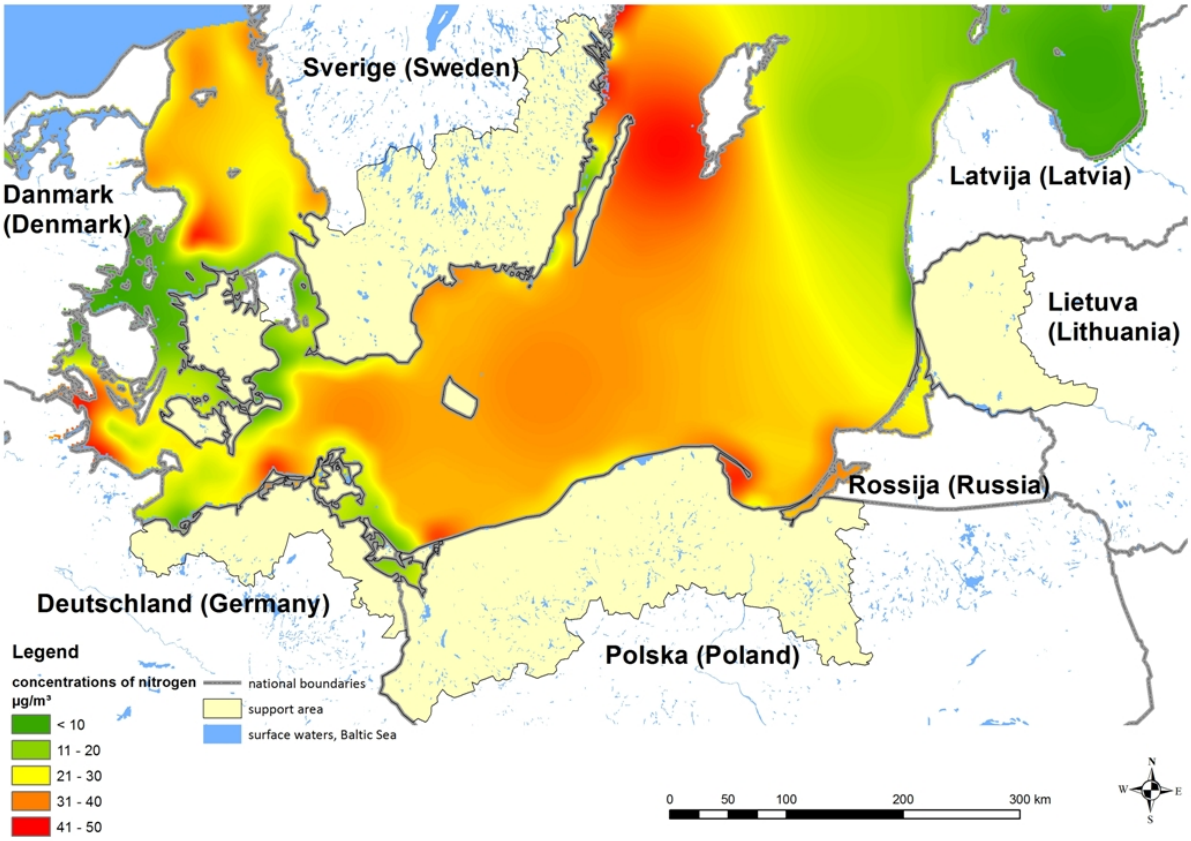

Figure 22 Spatial distribution of nitrate concentrations in the Programme eligible area. [Source: Own work based on HELCOM data http://maps.helcom.fi/website/mapservice/index.html]

The key pollutants entering the Baltic Sea also include other inorganic (compounds or derivatives of the compounds of sulphur and carbon) and organic substances, oils and heavy metals. In addition, the Baltic seabed contains about 60 thousand tonnes of chemical munitions dumped in there after the Second World War. This weapon is a potential threat to the fragile ecosystem of the Baltic Sea, and to the life and health of the coastal inhabitants. In March 2014, NATO (including Polish units) began searching for chemical weapon (including mustard gas) dumped in the South Baltic Sea.

The quality of bathing waters

In 2012, the Member States have designated 22 184 bathing areas, of which 20 930 were determined within the boundaries of 27 countries (Croatia joined the EU in 2013 - and is not included in the

reports of the EU for 2012). In 2012, 94% of the EU bathing waters meet the minimum water quality standards set out by the Bathing Water Directive[85].

Table 10 Quality status of bathing waters indicated in waters of countries covered by the Programme. [Source: European bathing water quality in 2012, EEA, 2013].

Country	Total number of bathing waters in the country	Bathing waters compliant with guide values		Bathing waters compliant with mandatory values		Bathing waters non-compliant with mandatory values		Bathing waters banned or closed		Insufficiently sampled / new bathing waters	
unit	number	number	%	number	%	number	%	number	%	number	%
Denmark	973	690	70.9	217	22.3	33	3.4	163	0.0	33	3.4
Germany	366	291	79.5	66	18.0	3	0.8	163	0.0	6	1.6
Poland	88	65	73.9	22	25.0	1	1.1	163	0.0	163	0.0
Lithuania	16	13	81.3	3	18.8	163	0.0	163	0.0	163	0.0
Latvia	32	12	37.5	20	62.5	163	0.0	163	0.0	163	0.0
Estonia	27	11	40.7	12	44.4	163	0.0	1	3.7	3	11.1
Sweden	248	156	62.9	66	26.6	7	2.8	163	0.0	19	7.7

According to this report, the major source of bathing water pollution is faecal bacteria contamination from insufficiently treated urban wastewater and animals (from farms, farmlands, and introduced by wild animals in the coastal area). Heavy rains and surface runoff significantly increase bathing waters pollution.

Groundwater

Chemical status of groundwater is one of the key issues of the EU related to the state of groundwater. The chemical status of about 25% of all the European groundwater bodies was

[85] European bathing water quality in 2012, EEA, 2013

determined as bad. This is a result of various anthropogenic impacts of different sectors of the economy[86].

In the case of the Programme eligible area, the following figure was drawn up based on the data of the European Environment Agency. In the countries covered by the Programme, especially in Poland and Lithuania, general condition of the groundwater quality can be described as good. In contrast, selected Baltic areas of Denmark, Germany and Sweden present locally poor ecological status.

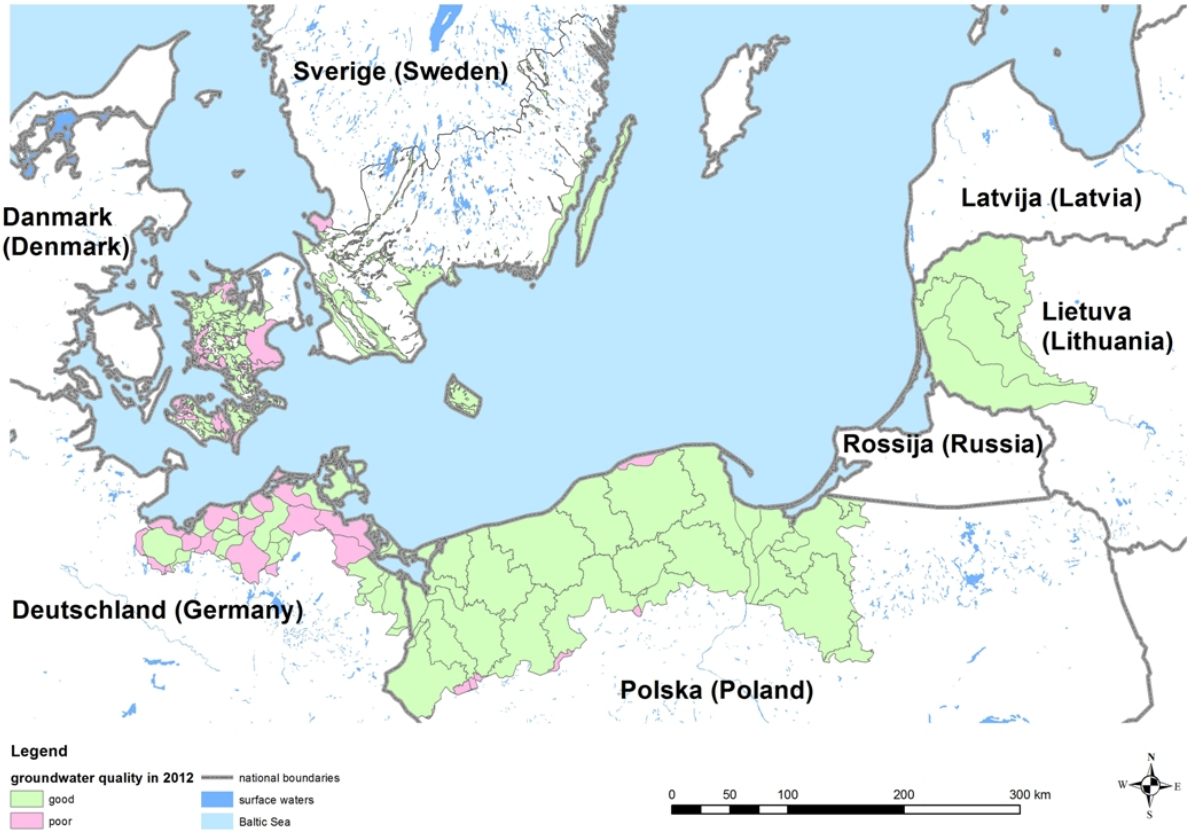

Figure 23 Quality status of groundwater in the Programme eligible area. [Source: Own work based on data from http://www.eea.europa.eu/data-and-maps/data/wise-groundwater#tab-metadata]

A particular problem of threats to groundwater in the coastal zone is the intrusion of saline water into usable aquifers, mainly caused by over-exploitation of groundwater resources in the coastal zone. The figure below shows scale of this event in the Baltic Sea region.

[86] EEA 2012, European Waters - current status and future challenges. Synthesis, EEA Report 9/2012

Figure 24 Overexploitation of groundwater resources and saltwater intrusion in the Baltic Sea region. (EEA 1995). [Source: Global International Waters Assessment. http://www.unep.org/dewa/giwa/areas/reports/r17/assessment_giwa_r17.pdf]

Flood risk

According to the definition in the Directive 60/2007/WE, a so-called Floods Directive, flood means the temporary covering by water of land not normally covered by water. This shall include floods from rivers and floods from the sea in coastal areas.

Flood risk in the Programme eligible area relates to the coastal zone and river estuaries. In this area the flooding can be caused from two sources: flowing waters (passage of flood wave, ice blockage in the estuarine sections of rivers) and sea waters (storm floods).

In recent decades there has been a rise in the number of extreme events, such as torrential rain, storms, strong winds and storms. They lead to accumulation of water in the coastal area, the phenomenon of 'backwater' and intrusions (the flow of salt waters and salty waters inland and into

the groundwater), obstruction of river flow into the sea, and storm floods. Rain floods relate primarily to the areas of depression, such as Żuławy (Poland), but in regions with strong slopes or in urban areas (dominated by impervious surfaces, and where storm water drainage system has insufficient capacity) rain floods also constitute a major concern. It often happens that the flood is caused by a combination of several factors such as the wind from the sea (causing the accumulation of sea level in the coastal zone), inflows, heavy rainfalls, flood wave from the upper part of the catchment. Flood caused by a storm most frequently leads to flooding of the grassland and arable land with salt or salty waters, destruction and damage of buildings and infrastructure such as ports, roads, bridges, sewage treatment plants, overhead power lines, flood protection infrastructure.

For example, about 70 cases of extreme events were reported in Poland in the years 1950-1975, and in the period 1975-2000 the number increased to 126. The last major storm flood in Poland happened in 2009.

Significant floods occurred in the Baltic region in 1904, 1954, 1995 and 2002.

Risk of coastal flooding (projected climate change and rising waters of the Baltic Sea)[87]

Climate change leads to an increase in temperature on land and sea, and to changes in the intensity and distribution of precipitation. This causes a rise in global average sea level, the threat of coastal erosion, and increase in the frequency of extreme weather conditions (torrential rains, violent storms, extreme temperatures, etc.). The threat is not only correlated with the frequency and intensity of the events, but the density of population and degree of development of the areas affected by the event. Thus, the most sensitive areas include the coastal zone and densely populated deltaic estuaries (of the Vistula, the Oder, and the Neman River) and the whole area of the Polish coast, with the highest population density in the area of the South Baltic Sea.

The threat of coastal flooding in the EU is considered to be a significant problem, solving of which will be a challenge in the upcoming years. According to the EU policy on environmental protection and water management, adaptation to the observed climate change through appropriate management of the coastal protection is one of the priorities, as reflected in the White Paper on Adaptation to Climate Change (European framework for action, 2009) and the EU Strategy for Adaptation to Climate Change.

[87] Analysis of future climate change from the "Study of the needs and capabilities of surface water retention in Polish areas with various degrees of threat of water surpluses and deficits caused by floods and droughts"

Analyses (available in literature) of climate change in the Baltic Sea region indicate shorter transitional seasons (i.e. spring and autumn), with a tendency of warm and cool season to dominate. Warm season would mainly involve summer, but also current late spring and early autumn. The cool season would involve winter, together with late autumn and early spring. During the warm season of the year, the frequency of the occurrence of long-term (several weeks) periods without precipitation or rainfall very low is expected to increase, which will be accompanied by scorching weather with peak air temperatures exceeding 35°C (similar meteorological conditions observed in July 2006). It is emphasized that short-term droughts are interrupted by severe precipitation, which may be accompanied by thunderstorms, hail, really strong winds, including tornadoes. In turn, warmer cool season would be characterised by a more frequent and heavier precipitation, less frequently in the form of snow (example - the period from October 2006 to March 2007). Also at this time of year, the speed and puffiness of winds would report the highest increase.

Regardless of the direction of future climate change, it is crucial to reckon with the possibility of more frequent occurrence of extreme weather events, which poses a particular threat to coastal areas, river valleys and developed deltaic areas (including the largest surface area of Żuławy).

The second important factor in increasing the frequency and severity of flood risk is the observed rise in sea water level and the extension of the period for the higher water levels in the autumn-winter season. It is indirectly related to climate change, including an increase in the intensity and periods of occurrence of winds from northern directions. Additionally, in the opinion of experts, growth of the water level of the South Baltic Sea is also affected by the process of uplift of the Scandinavian Peninsula that has occurred since the last ice age. The Baltic Sea is one of the youngest seas of the Atlantic Ocean and is still subject to the processes induced by the Scandinavian ice sheet that covered the current area of the sea about 12 thousand years ago. After it melted, the sea level raises successively as a result of the continental plates movements. Apparently, the effects of this process can be observed in the southern part of the Baltic Sea, however, the eastern part of the Polish coast and the coast of Kaliningrad (Russia) and Lithuania constitute the largest areas of sea-level rise (see figure below).

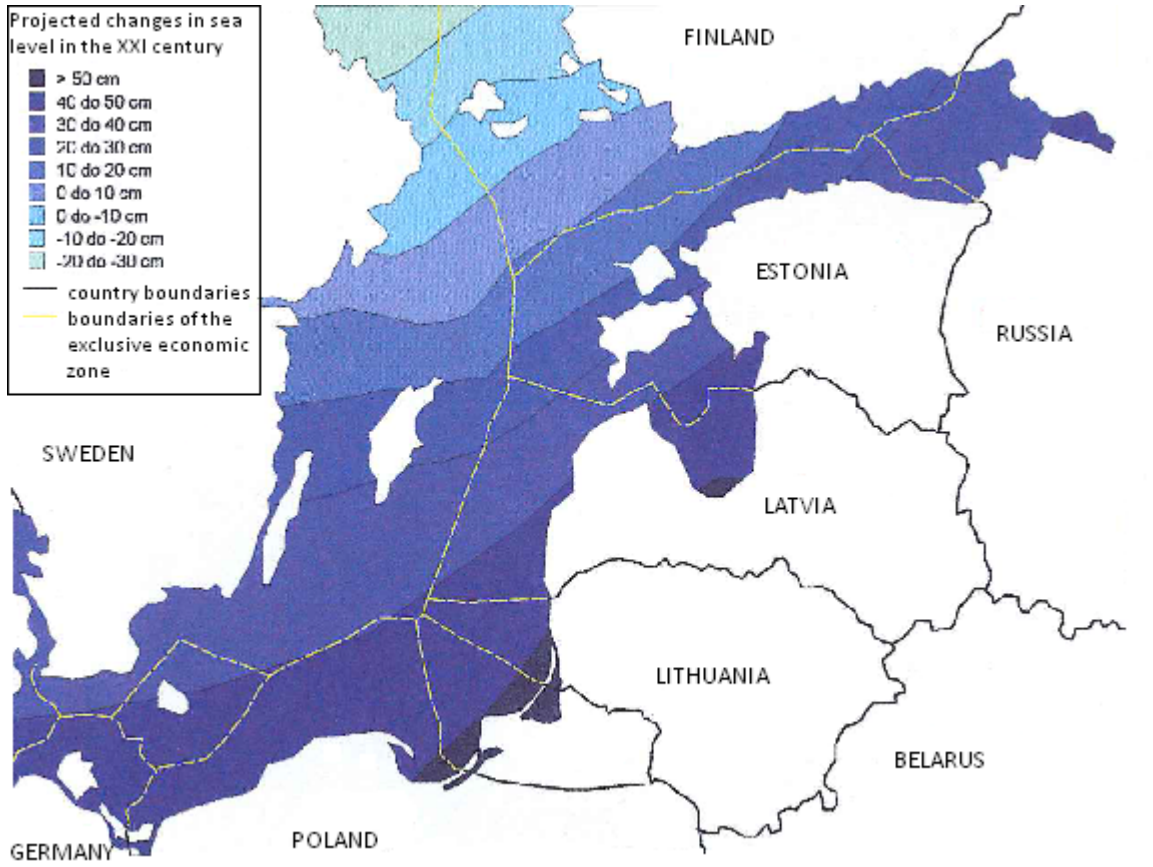

Figure 25 Local Baltic Proper Sea level changes projected for the 21st century [Source: Nord Stream (2009) the Swedish Environmental Protection Agency, Bulletin 19]

Drought risk

Over the last 30 years Europe has repeatedly observed long-lasting, severe droughts. The most serious were recorded in years: 1976, 1989, 1991, 2003. It should be noted that in comparison with floods, drought effects are longer lasting and cover a much larger area. Since 1991, the value of the average annual losses (recorded as a result of droughts) in Europe have reached EUR 5.3 billion. However, the negative economic effects of the 2003 drought in Europe amounted to at least EUR 8.7 billion[88] .

Predicted global warming may increase the risk of drought in Europe. Results of the monitoring of the European rivers flow indicate that the reported levels of low waters decrease, especially in the southern part of the continent. It is predicted that the annual flows in rivers will increase in the north

[88] http://floods.jrc.ec.europa.eu

and decrease in the south, and the likely trend will intensify. Big changes are also predicted for the hydrological cycle - its 'intensification', with smaller flows in the summer and greater flows in winter, which in turn will lead to an increased risk of drought and water shortages, especially during the summer season.

Projected climate change will likely affect flora and fauna, creating a threat to the stability and durability of the function of ecosystems. For example, the range of plant occurrence will move (perhaps even by few hundred kilometres) north and up the uplands. Experts also expect changes in freshwater and marine ecosystems. Climate change is likely to affect the chemistry and physical properties of water, causing changes in the geographical distribution of plankton and fish, and perhaps a change of the spring blooms of phytoplankton, which again can affect fish stocks and fishing economy.

Table 11 Drivers of adverse changes in the aquatic environment. [Source: Own work]

Issue	Drivers of adverse changes
Marine and surface waters	
Nutrient pollution of marine waters. Eutrophication and oxygen deficiency in the deeper zones of the Baltic Sea.	Over the last hundred years, the content of nitrogen and phosphorus in the Baltic Sea has increased several times, leading to eutrophication. Nutrients mainly come from inadequately treated wastewater, runoffs from agricultural land, as well as greenhouse gases from road and sea transport and combustion processes. The effects of eutrophication are particularly acute in the southern and eastern parts of the Baltic Sea. The effects of eutrophication of aquatic environment include a decrease in the oxygen concentration, an increase in the amount of filamentous algae and blooms of cyanobacteria.

Secondary pollution of the basin	The economic use of the Baltic Sea causes, among other things, disturbance of the seabed sediments, resulting in secondary pollution of the basin and changes in habitat conditions of benthic organisms
Poor condition of the coastal and transitional waters. Risk of failure to achieve (within the given deadline) good status of coastal and transitional water bodies.	Pollution loads flowing with river waters, deposition of air pollutants, works in marine areas, marine pollution from maritime shipping, transformation of the shoreline.
Area source pollution, and to a lesser extent linear pollution.	An increased use of mineral fertilisers in agriculture, as well as an inappropriate use of natural fertilisers, and lack of protection of surface waters against area source pollution. Achieved reduction of nutrients getting into the Baltic Sea is not yet sufficient for a substantial improvement of the waters. Another problem is the pollution caused by transport - spills of oil derivatives and wastes, and emissions of exhaust gases.
Increase of pressure on the water of the Baltic Sea.	An increase in anthropogenic use of the Baltic Sea is noticeable at many levels: development of shipping, fishing, tourism, construction related to energy (including pipelines). Further increase is predicted in maritime traffic, together with a further development of wind turbines.
Groundwater	
Risk of deterioration of water quality, especially in the Quaternary deposits.	Waters poorly insulated from the ground are very sensitive to impurities migrating from the surface of the earth. Many MGBs[89]representing

[89] MGB - major groundwater basin

	a potential source of high-quality drinking water, were identified as sensitive to contamination. In the coastal belt area the main issue relates to seawater intrusion, i.e. the flow of salt waters and salty waters into aquifers. This event is caused by over-exploitation of groundwater in the coastal belt or the sea level rise.
Risk of over-exploitation, especially in hydrological drought conditions.	Excessive water intake in comparison to the possibility of restoration of water resources.
Extreme events and hydro-technical devices	
Increase of flood risk.	The flood risk concerns storm floods, jam floods, rain floods (especially in the areas of depression, in the cities - in the case of an inefficient rainwater sewage system), and floods caused by flood wave passing the river valleys. Flood risk will grow with the increase of area urbanisation and the intensity of extreme events (storms, storms, torrential rain etc.) occurrence, and with the rising Baltic Sea waters.
Gradual reduction of the watershed retention.	Loss of retention is associated with the transformation of the catchment area: an increase in the intensity of development, especially forms with a large impermeable surfaces (roads, airports, logistic centres, car parks, etc.), and drainage of wetlands.
More frequent occurrence of the so-called urban flooding and severity of damages.	Urban floods are associated with the occurrence of torrential rains, mostly local. In the course of land use planning of the city area, the compensation of the loss of water catchment retention shall be taken into account. Rainwater sewage system has no capacity to drain torrential rain water. In many cities, the role of

	hydrographic elements requires remodelling.
The increasing frequency of droughts.	Drought issues relate primarily to the land part of the Programme eligible area. The frequency of droughts is likely to increase due to climate change. The negative effects of the drought are exacerbated by the lack of water retention system.
Risk coastal abrasion.	Sea level rise (especially in the southern part of the Baltic Sea), an increase in the intensity and frequency of extreme events (storms, torrential rain, storms) enhance abrasion[90] . Cliff coasts are particularly at risk of abrasion. In turn, sandy beaches and dunes are exposed to wash out and wind erosion.
Other issues	
Overfishing	The problem relates primarily to excessive use of cod stocks. In addition, illegal fishing is a serious problem.
Hazardous substances and chemical weapons	Hazardous substances are introduced into the waters of the Baltic Sea with river waters flowing into the sea, and with atmospheric deposition (organic pollutants, heavy metals). Vessels are a major source of pollution[91]. In addition, another potential threat is a chemical weapon sunken at the Baltic Sea.

[90] A guide to coastal erosion management practices in Europe January 2004, National Institute of Coastal and Marine Management of the Netherlands, Directorate General Environment European Commission.

[91] Commission Staff Working Document of December 2010 accompanying the communication from the Commission to the European Parliament, the Council, the European Economic and Social Commitee the the Commitee of the Regions concerning the European Union Strategy for the Baltic Sea Region

4.7. HISTORICAL HERITAGE OBJECTS [92]

The Programme eligible area includes numerous heritage objects of regional, national and international significance. They are essential to the cultural heritage of the countries participating in the Programme, and they influence development potential of tourism and leisure industry.

The map set out below shows more important historical heritage objects in the Programme eligible area.

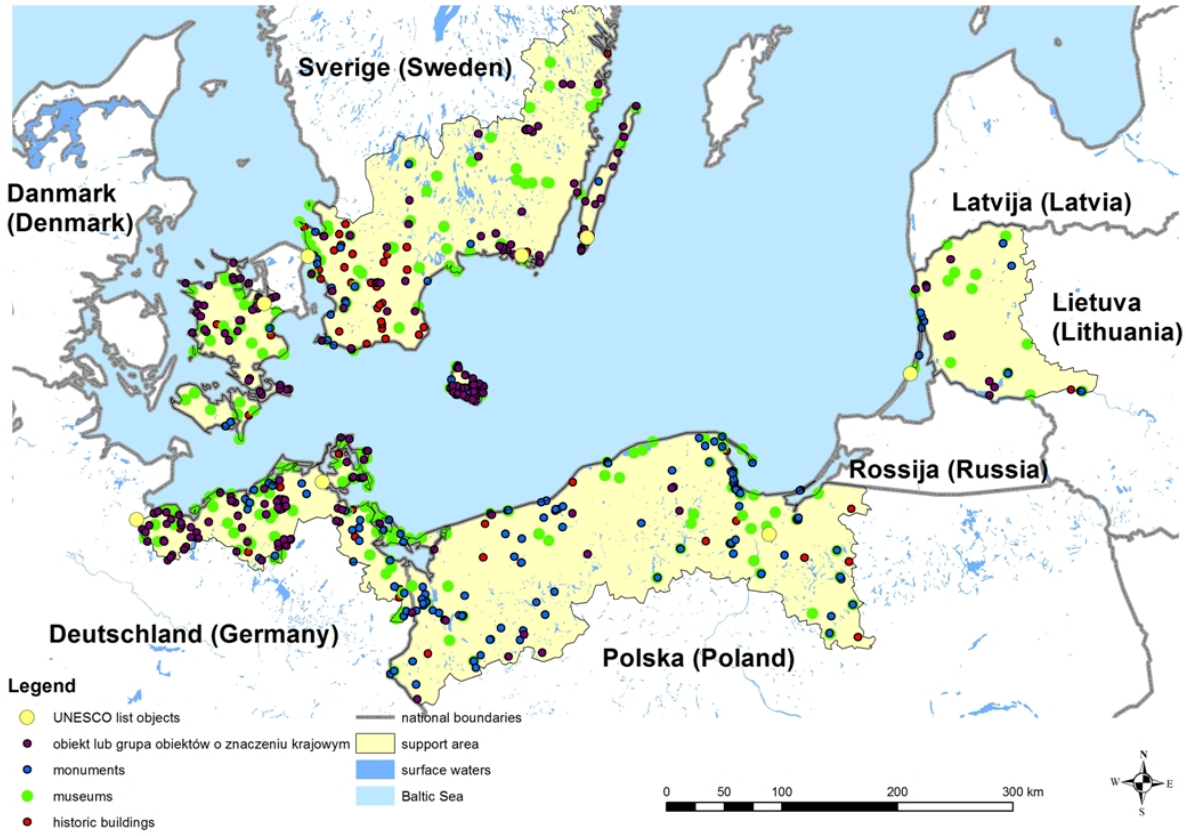

Figure 26 More important historical heritage objects in the Programme eligible area. [Source: Own work based on data from UNESCO http://whc.unesco.org/ the Polish National Commission for UNESCO http://www.unesco.pl/kultura/dziedzictwo-kulturowe/swiatowe-dziedzictwo/polskie-obiekty/]

[92] The term also takes into account the discovered and undiscovered archaeological sites.

Apart from heritage on land, attention should be paid to the identified and unidentified underwater heritage sites in the form of: sunken wrecks of ships and vessels, sunken settlements and seaports, and other relics from past eras.

The map set out below shows most valuable underwater cultural heritage sites in the Baltic Sea.

Figure 27 The approximate locations for the '100' most valuable underwater cultural heritage sites in the Baltic Sea [Source: RUTILUS Strategies for a Sustainable Development of the Underwater Cultural

Heritage in the Baltic Sea Region, NORDEN Nordic Council of Ministers, Swedish National Maritime Museums, Report dnr 1267/03-51, 2006[93]]

Special attention should be paid to the archaeological heritage objects[94] discovered and undiscovered, which may interfere with the actions of the Programme.

4.8. SUMMARY

The 4 mail issues and environmental hazards identified in section 4 will be used to assess the possible environmental impact of the Programme and minimise its possible negative impact. They should also give rise to such a formation of the Programme so that on the one hand it contributed to the protection and improvement of the environment, and on the other hand so that its negative impacts were minimised through preventive, alternative and possible compensation measures.
Tools that contribute to such targeting of the Programme activities should include selection criteria for projects to be implemented. Such criteria should consider the above-identified issues.

[93] http://mg.kpd.lt/users/www/uploaded/The%20Rutilus%20report%202006_1.pdf
[94] Information on archaeological heritage objects in Mecklenburg-Vorpommern can be obtained from Landesamt für Kultur und Denkmalpflege Mecklenburg-Vorpommern, Domshof 4/5, 19055 Schwerin, www.kulturerbe-mv.de

5. THE ENVIRONMENTAL REPORT

5.1 GENERAL ASSESSMENT, DESCRIPTION AND SUMMARY ASSESSMENT MATRIX

Environmental impact assessment for the draft South Baltic Programme 2014-2020 has been made through the analysis of the objectives of the Programme and its potential projects. The evaluation criteria have been defined on the basis of:

- detailed analysis related to the evaluation questions set out in ToR and tender documents,
- state of the environment and the identified key issues
- legal requirements for the project types proposed for funding under the Programme,
- conclusions from the analysis of strategic papers.

The given criteria for assessing impact of each individual element of the environment are presented in the following table.

Table 12 Selected criteria for assessing impact of the Programme on individual elements of the environment.

No.	Elements of environment subject to research	Evaluation criteria
1	Biodiversity	TImpact on BSPA and on species and habitats protected under the Natura 2000 network
2	Fauna	Impact on protected species
3	Flora	Impact on natural habitats
4	Impact on the integrity of protected areas	Impact on maintaining consistency of the protected areas, and generally on passable condition of the ecological corridors
5	Water	1. Impact on the quality of surface water and groundwater 2 Impact on marine waters 3. Impact on increasing the risk of flooding; 4. Location in areas at risk of flooding or landslides

No.	Elements of environment subject to research	Evaluation criteria
6	Air	Impact on air quality in the scope of PM_{10}/$PM_{2.5}$, particularly in the areas of exceedances;
7	Humans	Impact on the occurrence of exceedances of quality standards for air, noise, drinking water, and limits of soil pollution
8	Soil	1. Impact on terrain shaping, land and movement in the course of construction works; 2. Impact on permanent change of relief due to the introduction of anthropogenic forms of terrain in the form of the sea coast built-up, creation of embankments, cuttings, etc.; 3. Impact on soil stabilisation and protection against landslide processes
9	Landscape	Impact on deterioration of the landscape
10	Climate	1. Reduction of CO_2 emissions (including reduction as a result of the use of RES - replacement of fossil fuels); 2. Energy efficiency; 3. Impact on adaptation to climate change (extreme events)
11	Natural Resources	1. Impact of the increase in consumption of rock materials used in the construction phase; 2. Impact on reduction of energy resources (fossil fuels) consumption for the purpose of electricity and heat production
12	Historical Heritage Objects	1. Impact on the maintenance of good technical condition of historic heritage objects; 2. Impact on improving functionality and public accessibility of the historical heritage objects, and consolidating the aesthetics in the public space; 3. Impact of the construction works on the condition of the historical heritage objects located in the neighbourhood; 4. Impact of location of new investment on the exposure of a historical heritage object that constitutes local dominant feature.

No.	Elements of environment subject to research	Evaluation criteria
13	Material Goods	1. Impact on the value of the property (land and buildings) due to the presence or proximity of the planned investment; 2. Impact on the value of construction facilities of all works and activities that may affect their technical condition both in construction and operation phases; 3. Impact on the companies' revenues due to changes in traffic organisation in cities (ring roads); 4. Impact on revenues of cultural institutions and companies providing ancillary services

Additional evaluation criteria consisted of horizontal analyses examining if sustainable development, eco-innovation and green and blue economy are taken into account.

In the next step a detailed analysis was carried out, which involved various groups of projects that are to be funded under the Programme and that may affect particular elements of the environment. Groups of projects likely to have impact on the environment are identified and pre-assessed on the basis of the Programme analysis, the results of which are presented in section 3.1.

The results of analyses of projects likely to have significant negative effects on the environment are synthetically presented below in the matrix of relation.

It should be noted that the evaluation from the table set out below has a review nature, i.e. lack of a significant negative impact of a given support area does not mean that it should be assumed a priori that none of the projects implemented within this area will have a significant negative impact on the environment, including Natura 2000 sites. Only a specific investment project evaluation can determine negative impact or lack thereof.

Table 13 Matrix of relation of environmental elements and investment priorities of the draft South Baltic Cross-Border Cooperation Programme 2014-2020.

Code (priority axis/ investment priority/ measure)	Field of intervention,	Elements of environment subject to impact assessment												
		biodiversity	fauna	flora	integrity of protected areas	water	air (including noise)	humans	soil	landscape	climate	natural resources,	historical heritage objects[95]	material Goods
		1	2	3	4	5	6	7	8	9	10	11	12	13
Priority Axis 1 Strengthening international activeness and innovation capacity of the South Baltic blue and green economy														
No projects have been identified, that could have a negative impact on the environment.														
Priority Axis 2 Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth														
2.6f.1.b	Development, demonstration and deployment of green technologies, including small-scale investments (pilot projects) in the field of energy	-, +, >>>, >>, >, o, B, P	-, +, >>>, >>, >, o, B, P	-, +, >>>, >>, >, <->, o,	*n/a*	-, >>>, >>, >, B, P	+, >>>, P	+, -, >>>, P	+, >>>, P	-, >>>, B	+, >>>, P	-, +, >>>, >, B	+, -, >>>, P	*N/a*

[95] Including archaeological heritage objects

Code (priority axis/ investment priority/ measure)	Field of intervention,	Elements of environment subject to impact assessment												
		biodiversity	fauna	flora	integrity of protected areas	water	air (including noise)	humans	soil	landscape	climate	natural resources,	historical heritage objects[95]	material Goods
		1	2	3	4	5	6	7	8	9	10	11	12	13
	production from renewable sources (e.g. onshore wave and wind energy)			B, P										
2.6f.1c	Development, demonstration and deployment of green technologies, including small-scale investments (pilot projects) in the field of energy production from renewable sources (e.g. offshore wind energy)	-, +, >>>, >>, >, o, B, P	-, +, >>>, >>, >, o, B, P	-, +, >>>, >>, >, <->, o, B, P	*n/a*	*n/a*	+, -, >>>, >, P	+, -, >>>, >, B, P	-, >, B	-, >>>, B	+, >>>, P	-, +, >>>, >, B	+, -, >>>, B, P	-, +, >>>, B, P
2.6f.1e	Development, demonstration and deployment of green technologies, including small-scale investments (pilot	+, P, >>>, -, B, >	-, B, o, +, P, >>>	-, B, >, +, P, >>>	*n/a*	+, P, >>>, -, B, >	-, +, >>>, >>, >,	+, -, >>>, B, P	-, >, B	-, >>>, B	+, >>>, B, P	-, +, >>>, >, B	+, -, >>>, P	+, -, >>>, B, P

Code (priority axis/ investment priority/ measure)	Field of intervention,	Elements of environment subject to impact assessment												
		biodiversity	fauna	flora	integrity of protected areas	water	air (including noise)	humans	soil	landscape	climate	natural resources,	historical heritage objects[95]	material Goods
		1	2	3	4	5	6	7	8	9	10	11	12	13
	projects) in the field of energy production from renewable sources (e.g. biomass).						P							
2.6f.1.f	Development, demonstration and deployment of green technologies, including small-scale investments (pilot projects) in the field of energy production from renewable sources (e.g. geothermal energy).	+, >>>, P	+, >>>, P	+, >>>, P	*n/a*	-, >>>, >>, >, <->, o, B, P	+, -, >>>, >, P	+, -, >>>, >, B, P	-, >, B	+, -, >>>, B	+, >>>, B, P	-, +, >>>, >, B	+, >>>, P	+, >>>, B
2.6f.2	Improving and coordinating sustainable energy networks (e.g. development and reorganisation of smart grids, virtual	+, P, >>>	+, P, >>>	+, P, >>>	*n/a*	+, P, >>>	+, P, >>>	+, P, >>>	*n/a*	*n/a*	+, P, >>>	*n/a*	*n/a*	*n/a*

Code (priority axis/ investment priority/ measure)	Field of intervention,	Elements of environment subject to impact assessment												
		biodiversity	fauna	flora	integrity of protected areas	water	air (including noise)	humans	soil	landscape	climate	natural resources,	historical heritage objects[95]	material Goods
		1	2	3	4	5	6	7	8	9	10	11	12	13
	power plants, heating supply, integration of storage).													
Priority Axis 3 Improving cross-border connectivity for a functional blue and green transport area														
3.7c.2a	Provision of solutions to enhance sustainability, density and quality of sea transport services (ferries) in the South Baltic area, including facilitation of new links between the Programme regions.	+, P, >>>, -, P, o	+, P, >>>, -, B, o	+, P, >>>, -, P, o	*n/a*	*-, B, >*	+, -, >>>, >, B	+, -, >>>, >, P	*-, >, B*	*-, >>>, >, B*	+, -, >>>, P	*-, >, B*	*n/a*	*+, -, >>>, >, B*
3.7c.2b	Provision of solutions to improve density and quality of sustainable air transport services in the South Baltic	+, P, >>>	+, P, >>>, -, B, o	+, P, >>>	*n/a*	*n/a*	-, +, >>>, B	-, +, >>>, P	-, >, B	-, >>>, >, B	-, +, >>>, P	-, >, B	n/a	-, +, >>>, B, P

Code (priority axis/ investment priority/ measure)	Field of intervention,	Elements of environment subject to impact assessment												
		biodiversity	fauna	flora	integrity of protected areas	water	air (including noise)	humans	soil	landscape	climate	natural resources,	historical heritage objects[95]	material Goods
		1	2	3	4	5	6	7	8	9	10	11	12	13
	area, including facilitation of new links between the Programme regions.													
Priority Axis 4 Boosting human resource capacities for the area's blue and green economy														
No projects have been identified, that could have a negative impact on the environment.														
Priority Axis 5 Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth														
No projects have been identified, that could have a negative impact on the environment.														

Caption			
Nature of impacts	Symbol	Type of impacts	Symbol
positive	+	direct	B
possible negative	-	indirect	P
significant negative	- -	secondary	W
both positive and possible negative	+, -	cumulative	skum.
both positive and significant negative	+, -, - -	potential	prwd
no significant impacts	*n/a*	short-term	>
		medium-term	>>
		long-term	>>>
		permanent	<->
		temporary	o

Taking into account the possible impact of potential projects under the Programme on individual elements of the environment, recommendations can be formed for implementation of individual project groups - from the point of view of minimising their impact on the environment. It should be noted, however, that the nature of the Programme is general and, therefore, the recommendations may seem too general and widely known, but it is considered worth quoting as the starting point to determine the selection criteria for projects proposals. They can be generally considered as falling within the concept of eco-design principles. These recommendations are presented in the table set out below.

Table 14 Matrix of Relation of investment priorities and measures reducing/compensating impact on the environment.

MATRIX OF RELATION OF INVESTMENT PRIORTIES of the SOUTH BALTIC Cross-Border Cooperation Programme 2014-2020 AND MEASURES REDUCING/COMPENSATING IMPACT ON THE ENVIRONMENTAL			
No.	**Area of Support**	**Elements of the environment on which the project can have a negative impact**	**Comments on activities: reducing negative impact on the environment, accumulation of impact, as well as alternatives and possible compensation**
Priority Axis 1 Strengthening international activeness and innovation capacity of the South Baltic blue and green economy			
No projects have been identified, that could have a negative impact on the environment.			
Priority Axis 2 Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth			
1	Development, demonstration and deployment of green technologies, including small-scale investments (pilot projects) in the field of energy production from renewable sources (eg onshore wave and wind energy)	marine environment, local and permanent transformation of the seabed, noise	- location outside valuable natural habitats and habitats of species protected under the Natura 2000 network and BSPA. - reduction of construction works - reduction of interference in marine environment and sea coast - more efficient use of raw materials at the stage of construction, - construction works should be performed in a manner

			ensuring groundwater protection against pollution, - avoidance of locations on the migration routes of birds
2	Development, demonstration and deployment of green technologies, including small-scale investments (pilot projects) in the field of energy production from renewable sources (eg offshore wind energy)	birds, noise, local, permanent transformation of land	- reduction of construction works and soil transformation - more efficient use of raw materials at the stage of construction, - work performance in a manner ensuring groundwater protection, - avoidance of locations on the migration routes of birds - avoidance of locations within natural and semi-natural habitats - including natural grasslands and pastures, marshes, moors and wetlands
3	Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in production of energy from renewable sources (e.g. biomass).	terrestrial ecosystems, soil	- location outside the protected habitats and habitats of species protected under the Natura 2000 network - reduction of construction works and soil transformation, - in the case of energy crops, avoiding competition with food production,

			- more efficient use of raw materials at the stage of construction, - avoidance of locations in the areas of air quality exceedances
4	Developing, demonstrating and implementing small-scale green technology investments (pilot projects) in production of energy from renewable sources (e.g. geothermal energy).	soil ecosystems, groundwater	- reduction of construction works and soil transformation - more efficient use of raw materials at the stage of construction, - work performance in a manner ensuring groundwater protection against pollution, - reduction of interference in geological structures
5	Improving and coordinating sustainable energy networks (e.g. development and reorganisation of smart grids, virtual power plants, heating supply, integration of storage).	terrestrial ecosystems	- Designing in a way that prevents (or minimises) cutting and defragmentation of valuable natural structures, including protected areas and unprotected areas with high natural values,
Priority Axis 3 Improving cross-border connectivity for a functional blue and green transport area			
6	Provision of solutions to enhance sustainability, density and quality of sea transport services (ferries) in the South Baltic area, including facilitation of new links between the Programme regions.	marine ecosystems, noise, climate	- Avoidance of interference in aquatic ecosystems, especially in marine protected areas and fisheries

7	Provision of solutions to improve density and quality of sustainable air transport services in the South Baltic area, including facilitation of new links between the Programme regions.	noise, climate	- Minimisation of noise emission and the society's exposure to noise (e.g. through appropriate organisation of air traffic)
Priority Axis 4 Boosting human resource capacities for the area's blue and green economy			
No projects have been identified, that could have a negative impact on the environment.			
Priority Axis 5 Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth			
No projects have been identified, that could have a negative impact on the environment.			

As results from the analysis presented in the table, considering high generality of the Programme, the need of compensatory measures is not expected. However, this need may arise at the stage of consideration of specific projects proposed for funding under the Programme.

5.2 SUMMARY OF DETAILED STUDIES

The assessment examined potential environmental impact of different groups of actions likely to be funded under the South Baltic Cross-Border Cooperation Programme 2014-2020 on all elements of the environment. In order to determine their combined impact, the summary of these analyses is presented below in relation to specific elements of the environment.

It should be emphasised that, given the general nature of the Programme, the presented hypothetical impacts are given only in a general way, and the specific impacts will depend on the location and characteristics of projects proposed for funding under the Programme.

5.2.1. BIODIVERSITY, FAUNA, FLORA, AND THE IMPACT ON THE INTEGRITY OF PROTECTED AREAS (INCLUDING NATURA 2000 SITES)

The draft Programme under evaluation is of a high level of generality and covers a significant area - 118.5 thousand km^2. Given the large coverage of the supported area with Natura 2000 sites (1508 sites) and BSPAs (163 areas), at this stage it is impossible to perform a detailed analysis of the impact on these areas. The impact on particular species of plants and animals, and ecological relationships can be evaluated at a general level as well.

Implementation of the Programme findings will primarily have indirect positive impact on biodiversity. Exemplary actions indicated in the Programme under particular investment priorities, and directions of intervention point for the promotion of green and blue economy that uses natural resources in a sustainable manner. Other issues strongly emphasised include limiting pressure of economic development on the environment, while maintaining ecosystem functions and services . The major part of funds is intended for protecting, promoting and developing natural and cultural heritage, promoting innovative technologies for environmental protection and developing environment-friendly low-carbon transport systems.

These activities will have an indirect positive impact on biodiversity, mainly by reducing air pollutants emissions and indirectly by reducing pollutants getting into surface waters. Water pollution is one of the most important threats to biodiversity of the Baltic Sea.

Positive, direct impacts are possible associated with allocation of significant funds under priority axis 2 for protecting and enhancing biodiversity, nature conservation and green infrastructure, recultivation and sustainable use of Natura 2000 sites.

Potential threats to the conservation of biological diversity include promoting and developing green and blue tourism, particularly in the areas of natural and cultural heritage. These risks are associated

with a potential uncontrolled increase in tourism pressure on habitats and protected species, particularly related to the coastal zone - destruction of dunes and cliff coasts, destroying nests built on the beach, scaring of seals, trampling protected species of plants, etc. For many of Natura 2000 sites located at the point of junction between land and sea the use of these lands for the purposes of tourism and fishing constitutes the most serious threat to their conservation in good condition or to restoration of this condition. Of great importance for the implementation of activities under the Programme will be a reference to management plans of Natura 2000 sites and BSPAs as well as risks and constraints mentioned in those plans. On the other hand, planned efforts to increase the awareness of local communities in the field of natural and cultural heritage may have impact on limiting current tourist pressure on the protected areas, while (at the same time) increasing tourist traffic and the number of tourist facilities.

Under the Programme, it is also possible to implement small (pilot) projects in the field of renewable energy, that can have a negative impact on the environment, depending on their scale and location. At the level of the entire Programme, no significant threats are identified to biodiversity and protected species of plants and animals in the South Baltic Sea region. The potential negative impacts of the project will be local, and will be analysed at the stage of the environmental impact assessment procedure in force in all countries covered by the Programme.

PRIORITY AXIS 1 Strengthening international activeness and innovation capacity of the South Baltic blue and green economy

This axis will implement only 'soft' measures with a neutral impact on the environment, and focusing on SMEs and business models for their internationalisation and supporting growth and innovation processes. No negative impact is expected on the environment, because no infrastructure projects will be implemented under this axis.

Examples of measures indicated in the Programme relate primarily to training, business advisory, sharing experiences, transfer of knowledge, etc. These actions do not relate directly to environmental aspects.

More detailed references can be found in categories of intervention indicated for Axis 1. Of the twenty-four categories of intervention, four relate directly to improving state of the environment. Although these are not the investment activities, they can have indirect positive impact on biodiversity through the reduction of pollution generated by SMEs.

It is recommended to extend 'soft' measures by - education in the field of environmental hazards, and the possibility of their reduction by SMEs, which can also bring indirect environmental benefits.

PRIORITY AXIS 2 Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

The following two investment priorities were proposed under this axis:

- conserving, protecting, promoting and developing natural and cultural heritage,
- promoting innovative technologies in to improve environmental protection and resource efficiency in the waste sector, water sector and with regard to soil, or to reduce air pollution.

The axis which contains most of the pro-environmental activities received the greatest part of funds (48% of all funds allocated to the Programme). Priority Axis 2 in a particular manner implements rules adopted by the *EU biodiversity strategy to 2020*[96] and the White Paper on Adaptation to Climate Change (in the scope of green infrastructure[97] improving ecological connectivity between protected areas).

The largest funds under this priority axis are allocated for protecting and enhancing biodiversity, nature conservation and green infrastructure (8 million in total), however, due to a lack of internal consistency of the Programme, actions of such type are on the list of exemplary actions identified for *Priority Investment - conserving, protecting, promoting and developing natural and cultural heritage.*

Assuming, that the resources for green infrastructure as well as for protection and enhancement of biodiversity will be spent as planned, it will have a significant positive impact on biodiversity of the South Baltic Sea region.

It is recommended to increase the internal consistency of the South Baltic Cross-Border Cooperation Programme 2014-2020 by including (in particular investment priorities) activities directly relating to the protection of the natural environment and strengthening of biodiversity.

For *investment priority* relating to *conserving, protecting, promoting and developing natural and cultural heritage* the Programme indicates examples of actions that focus only on promoting green and blue tourism by enhancing tourism infrastructure and services, organisation of joint events and

[96] The strategy was published as a Commission Communication of 3 June 2011 'Our life insurance, our natural capital: an EU biodiversity strategy to 2020', COM (2011) 244

[97] The concept of **green infrastructure** means a number of activities at all administrative levels relating to the maintenance of ecosystem functions and the improvement of communication between them. Potential components of a green infrastructure includes: protected areas, healthy ecosystems and area of high nature value outside protected areas (such as wetlands, coastal areas, floodplain areas etc.); natural landscape features such as small water courses, forest patches, field margins; restored habitats of endangered species; urban elements such as green parks, green walls and green roofs; features for climate change adaptation (wetlands, floodplain areas, marshes for flood prevention through water storage and CO_2 intake, giving space to species).

the promotion of regional products, inclusion of natural and cultural heritage sites, development of joint cross-border ICT tools tourism attractions and accommodation facilities in the programme area. Therefore, there are mainly 'soft' measures that may have indirect positive or negative impact on the environment. Of the thirty-one areas of intervention proposed for this axis the twelve refer to the development of tourism. Positive impacts may relate to the sustainability of the use of tourism resources of the South Baltic Sea through tourism activation of small seaside villages, development of inland tourism, education conducive to understanding natural features, and proper conduct in protected areas, construction of pathways that will reduce tourism penetration, reduction of summer tourist pressure for the remaining periods of the year (stabilisation of the seasonal pattern of use of the tourist attractions).

Indirect negative impacts on the environment may occur due to uncontrolled increase of tourism pressure during the summer season in areas of a natural value. This particularly refers to the coastal zone which (according to the Commission's Report on the conservation status of habitats and species) is mostly exposed to biodiversity loss (in addition to areas of meadow and wetland habitats). An important aspect of natural risks associated with the increase of tourist pressure is the littering of river and marine water (especially with plastic and foil bags). Over 180 species of wild maritime fauna swallows the microscopic pieces of plastic thinking it's food, and leading to internal injuries and potential death. Some of them are killed by entanglement, for example, in plastic bags.

It is necessary for the Programme to include measures minimising those risks.

Promotion of tourism in valuable natural areas requires good recognition of the distribution of valuable species and habitats, together with the major threats. That is why it is very important for tourism projects or projects associated with renewable energy, which are implemented within the Natura 2000 sites or BSPAs, made reference to existing management plans for these areas. In the case of Poland and Lithuania, it can be difficult due to the lack of existing management plans for Natura 2000 sites (currently under development). The situation is slightly better in the case of the BSPA protection plans 65% of which had coverage of management plans in 2003, 26% had the plans under development, and 9% didn't start working on plans.

It is necessary to refer to the above management plans in projects involving activation of tourism based on natural heritage.

The Axis 2 also proposes 10 categories of interventions to promote green technologies. Indirect positive impacts on biodiversity are expected for these measures, mainly through the reduction of pollutant loads discharged into the environment.

There are also a direct negative impacts possible, related to small (pilot) investments on renewable energy (wind power onshore and offshore, solar energy, geothermal energy, biomass energy), construction of walking and cycling paths. Due to their scale, potential projects will not have a significant negative impact on biodiversity and protected species of plants and animals in the South Baltic Sea region. Possible negative impacts will be assessed for each project under the Environmental Impact Assessment, which aims to eliminate and reduce potential negative effects.

PRIORITY AXIS 3 Improving cross-border connectivity for a functional blue and green transport area

This axis will implement mostly measures aiming to lower the environmental impact of transport services and to increase their quality and interoperability. The axis focuses on 'soft' measures - the introduction of intelligent transport systems, joint development of solutions aiming at the use of more environmentally friendly means of transport.

These include impacts that will have an indirect positive impact on the environment due to the reduction of pollution associated with the assumed decrease in road transport in favour of means of transport that are less harmful for the environment.

The largest funds are allocated to multimodal transport and clean urban transport infrastructure.

At this stage, it is difficult to determine whether and what investments can be implemented under this axis. Funds allocated to this axis indicate that either mostly small, pilot projects or no projects will be physically implemented. It is difficult to predict whether it is possible e.g. to purchase pro-ecological means of transport, to develop river transport, etc.

As part of this axis, it may also be concluded that there is no consistency between the exemplary activities to be implemented under axis 3, and areas of intervention, which indicate how large funds will be allocated for specific areas of intervention.

This greatly impedes the formulation of potential threats to nature.

Directions of action indicate the necessity to improve the ferry and air connections between the regions (However, it has no explicit reference in terms of intervention). Increasing ferry links may decrease transport nuisances, however, it is associated with the risk of increased occurrence of spills of petroleum substances, which are quite common in the Baltic Sea area (thankfully on a small scale) but their frequency increases proportionally to the increase in the flow of traffic. Therefore, occurrence of local negative impacts on the marine environment is possible and associated with spills of fuels and the increase in underwater noise.

These impacts can be minimised through the use of modern and efficient devices.

PRIORITY AXIS 4: Boosting human resource capacities for the area's blue and green economy

The Investment Priority under this axis means integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives and joint trainings in the scope of blue and green economy. Only 'soft' measures of the following types are expected: transfer of knowledge, Internet services, development of models. This axis has a high internal consistency between the exemplary actions and the corresponding directions of intervention.

The impact of this axis on the environment can be considered neutral. Investing in green and blue economy assumes development of these areas with a maintenance of ecosystem functions and services.

Indirect positive impacts on biodiversity are also possible (as in the axis 1), and they are associated with the possibility of increasing environmental awareness and promoting behaviour limiting pressure on the environment.

PRIORITY AXIS 5 Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth

This axis includes, above all, 'soft' measures in the form of promoting legal and administrative cooperation and cooperation between citizens and institutions.. A variety of activities are planned, aimed at helping to establish and develop international contacts at the level of small territorial units.

These activities are neutral to the environment.

Joint awareness-raising actions are also planned among local actor groups to promote the cooperation in the field of culture, heritage and common identity of the South Baltic area. However, it is not clearly reflected in the categories of intervention indicating allocation for this axis.

However, assuming the implementation even of such type of activities, potential positive and indirect impacts on biodiversity can be indicated, that are associated with the ability to educate local communities about the natural values and threats to protected areas, and proper behaviour that would reduce pressure on these areas.

In conclusion, the implementation of the Programme should directly or indirectly contribute to reduce pressure on biodiversity, while ensuring sustainable development of such areas as international tourism, renewable energy, as well as improvement of regional transport links and passenger transport, while reducing pressure on the environment.

Risk of direct negative impacts is minimal and will be verified at the level of individual investment projects under the procedure of environmental impact assessment.

The identified potential, indirect, negative impacts associated with the uncontrolled growth of tourism and tourist pressure on the environment can be minimised by choosing appropriate criteria for project selection.

Priority Axis 2, to which 48% of the Programme funds were allocated, in a particular manner implements rules adopted by the *EU biodiversity strategy to 2020*. The largest funds under this priority axis are allocated for protecting and enhancing biodiversity, nature conservation and green infrastructure.

The Programme proposes a series of actions that are neutral for the environment, however when including aspects of natural environment protection into trainings, model development, cooperation platforms, i.e. 'soft' measures, the actions may additionally increase positive impact on biodiversity.

5.2.2. WATER STATUS

The assessment of the draft Programme's impact on the waters includes reference to surface water, groundwater and marine water, and to potential risk of flooding and landslides.

The legal provisions of all countries covered by the Programme and the EU legislation prohibit development of projects that can deteriorate the state of surface water, marine water and groundwater in a qualitative and quantitative manner. The law also prohibits implementation of measures that could reduce ecological functions of the waters. The measures under the Programme fulfil the above conditions, and the potential negative impact on the environment should not have a long-term significant negative impact on the aquatic environment.

'Soft' measures may have indirect positive impact on the environment, as long as they contain elements related to the promotion of ideas, tools and methods of environmental protection and associated with creating environmental attitudes and behaviour. Pilot activities of investment nature and investment activities could have a potential negative impact on the environment, as long as they cause increased risk of flooding and landslides, and the possibility of a physical transformation of river bed, sea coast and seabed. It should be emphasized that these actions should fit to the planning documents such as: flood risk management plans, plans for the river basin, provincial and local land use plans and zoning plans for marine areas. This will limit their negative impact on the aquatic environment, and the risk of floods and landslides. The evaluated Programme does not expect large investments. These will rather be small-scale projects of a pilot nature, so their impact on the environment may be small.

Potential negative impacts may be temporary or permanent. Projects approved for implementation and characterised by constant, negative impacts, in accordance with the applicable EU legislation,

must be associated with significant and necessary benefits to other elements of the environment or the economy, and constitute an overriding public interest. In addition, their negative impact should be naturally offset, if possible.

PRIORITY AXIS 1: Strengthening international activeness and innovation capacity of the South Baltic blue and green economy

The priority axis 1 will be dominated by 'soft' measures, such as: market research, implementation of business models, providing services and products, exchange of experiences, and promotion campaigns. Basically, their environmental impact will be neutral.

Indirect positive impact on the aquatic environment is also possible and associated with the possibility of including (to all the aforementioned actions) educational aspects related to the protection of the aquatic environment, especially in the field of sustainable use of water resources. Implementation of new business models in green and blue economy and improvement of international markets functioning should be executed together with environmental education, information about the most significant threats to the aquatic environment and favouring SMEs that use eco-friendly solutions or plan to implement green technologies.

As a consequence, actions to be implemented will be able to stimulate pro-ecological behaviour and have an indirect positive impact on the environment.

PRIORITY AXIS 2 Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

As in the case of 'soft' measures implemented under the priority axis 1, also in this case the inclusion of the component associated with the protection of the aquatic environment and the efficient use of resources will help to achieve a positive, indirect beneficial impact on the environment. The implementation of 'soft' measures, such as joint development of cross-border research, strategies and plans, water management (and other) standards can have a positive impact on inland water, marine water and groundwater, provided that they are implemented and applied. This will particularly apply to air and water emission standards, the use of fertilisers in agriculture, waste management.

Preparation and implementation of small-scale pilot investments enhancing blue and green tourism infrastructure and services, can have a negative impact on water status, even if implemented on a small scale. This may for example involve the construction of tourism infrastructure, such as construction of sites for picnics, barbecues and grilling, or parking at junctions trails, at the stage of execution of works, when occurrence of negative impacts on surface water (due to the possibility of their contamination and changes in water relations) seems possible. At the stage of operation direct

(littering of the recreation area and waste entry into the water, runoff of rainwater and snowmelt from polluted surfaces) and indirect negative impacts are possible, resulting from the emission of NOx and SOx, which, together with precipitation, enter the groundwater. Besides, large areas of impervious surfaces contribute to increasing the risk of flooding due to the acceleration of water runoffs, although in areas with marked tourist trails this may be less important.

In the case of the pilot investment projects, forecasting their impact on the environment is hampered by the lack of knowledge about projected solutions, technologies, their detailed location and extent. Therefore, each of them should be considered and evaluated individually.

Exploiting the environmental and cultural potential of the areas planned under the evaluated Programme carries the risk of unwanted penetration of habitat (including aquatic habitats), valuable in terms of nature. The growth of tourism in particularly attractive areas, waterways and paths set out along watercourses, water reservoirs and the sea coast may be associated with an increased environmental pollution caused by liquid and solid waste.

The growth in tourist popularity of the area will cause increased use of water intended for human consumption, higher amount of waste, and bigger consumption of electricity. While in the scope of pilot programmes this will not pose a significant burden on the environment, in the later period, especially during the so-called the peak of the tourist traffic, it may pose a threat to the environment and water resources.

Implementation of pilot projects can significantly reduce the negative impact of activities to be implemented under priority axis as a whole through strengthening awareness and responsibility for the natural and cultural heritage of local communities, identification of problems arising from increased population density in the eligible area, development of methods and tools to limit negative impact of tourism pressure on natural and aquatic resources.

PRIORITY AXIS 3 Improving cross-border connectivity for a functional blue and green transport area

The deposition of biogenic elements from the air (including transport pollution) is a significant driver of the eutrophication of the Baltic Sea; This issue also applies to inland waters. Therefore, increasing efficiency and share of public transport, as well as reducing truck transport and passenger traffic will have - indirectly - a positive impact on the environment.

It should be emphasised that pilot projects in the field of multimodal connections together with the construction of parking lots will have impact both at the stage of the construction, and during operation - however, direct (runoff of rainwater and snowmelt from impervious surfaces) and indirect negative impacts are possible, resulting from the emission of NOx and SOx, which, together with precipitation, enter the groundwater. Besides, large areas of impervious surfaces contribute to

increasing the risk of flooding due to the acceleration of water runoffs. Due to the general nature of the Programme, a more precise determination of actions to be implemented (and their potential impacts on water quality) will be possible at the stage of indicating specific projects for implementation. In the case of investments that may have a significantly negative impact on the environment, the procedure of environmental impact assessment will be carried out.

If enhancing density of sea transport services (through facilitation of new links) will increase the frequency of transport among the existing fleet, it may result in more frequent occurrence of liquid fuels leakages, damages and emission of contaminants. As a consequence, the state of coastal and marine waters may deteriorate.

Pilot projects in the field of renewable energy (energy based on biomass, waves, wind, geothermics) are likely to have a negative impact on the aquatic environment. This impact, depending on the planned installation, will be followed by the emission of pollutants into air, and from air - into inland waters and marine water, and will change water, thermal and habitat conditions in the marine environment or have impact on groundwater. In each case it is necessary to individually examine the potential impact of the investment on water resources and their status.

PRIORITY AXIS 4: Boosting human resource capacities for the area's blue and green economy

Mainly 'soft' measures are expected to be implemented under this priority axis. As in the case of the priority axes 1 and 2, also in this case the component relating to good environmental practices can be included in the actions. As a consequence, actions to be implemented will be able to have an indirect positive impact on the environment.

The axis will promote development of green and blue economy that will lead to more efficient use of natural resources (including water resources) and environmental attitudes and behaviour.

PRIORITY AXIS 5 Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth

Promoting legal and administrative cooperation and cooperation between citizens and institutions, that is the core of the measures to be implemented under the priority axis 5, may have an indirect positive impact on the environment, including the aquatic environment, provided that the cooperation will include component of environmental protection and sustainable use of water resources. Cross-border transfer of knowledge, joint actions of local self-governments, other entities and institutions shaping regional development may be crucial for planning, designing and using environmental resources, including - water resources. In the case of the promotion of sustainable development of the South Baltic Sea region, indirect positive impact on the environment is possible.

Joint awareness-raising actions among local actor groups (to promote the cooperation in the field of culture, heritage and common identity of the South Baltic area) will be of significant importance. Like in the priority axis 2, strengthening awareness of the region's population, and their responsibility for cultural and natural heritage, can strengthen the respect for the environment and natural resources.

5.2.3. AIR (INCLUDING NOISE)

The areas of intervention, envisaged in the analysed Programme, influence air quality in various ways, depending on the characteristics and location of the project proposed for funding.

Priority Axis 1: Strengthening international activeness and innovation capacity of the South Baltic blue and green economy

Projects implemented under this axis will include 'soft' projects targeted primarily at SMEs. In all actions it is possible to strengthen the knowledge about the environment and the possibilities of influencing it. Of particular importance may be efforts to introduce innovative business models, which should also cover the dissemination of knowledge about the environment and the introduction of environmental management systems and innovative technologies. These actions should also have a positive impact on reduction of air emissions.

Priority Axis 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

Significant positive impact on air protection will be presented by projects implemented under this axis and related to developing, demonstrating and implementing green technology investments as pilot projects in the scope of production of energy from renewable sources. In addition to the direct effect of eliminating traditional energy sources (replaced by the green ones), which is combined with a reduction of air emissions, they will constitute examples to the universal spread of positive experiences in this field.

The biomass projects may be an exception, because they are associated with a higher emission of pollutants into the air. Therefore, location of such projects should be analysed in detail in order not to worsen the situation, especially in areas of air quality standards exceedances, or in vulnerable areas.

In addition, negative, small, short-term impacts on air may occur during construction, cause this is when air pollutants emissions are likely to occur in the form of exhaust gases generated from the equipment used and dusting.

Small, negative impact on air may result from measures promoting the use of natural and cultural heritage, especially tourism development, because this will be related to an increased mobility in the

region and in the case of car transport use it may be associated with an increase in air pollutants emissions. We propose to focus on this issue when selecting projects for funding.

Priority Axis 3: Improving cross-border connectivity for a functional blue and green transport area

Generally, it can be said that the implementation of projects under this axis will have a positive impact on reducing emission of air pollutants, because it will be associated with increasing transport efficiency. This should also cause an increase in energy efficiency in transport and hence reduce emissions of air pollutants.

However, increase of regional mobility may be expected as a result of the implementation of activities, and that can be associated with additional emissions of pollutants from land and sea transport. The use of low-carbon and carbon-free (where possible) means of transport may be a preventive measure. Local increase of noise may occur in some projects (including air traffic noise).

In addition, increased emissions of air pollutants could occur locally in the areas of construction of parking lots and multimodal centres, if such were to be implemented under the Programme.

The above elements should be taken into account when selecting projects.

All activities under this axis toward the greening of transport should be assessed positively.

Priority Axis 4 Boosting human resource capacities for the area's blue and green economy

The Investment Priority under this axis means integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives and joint trainings in the scope of blue and green economy. Only 'soft' measures of the following types are expected: transfer of knowledge, Internet services, development of models.

Impact of this axis can be considered generally positive, or at least neutral for the environment. Thus, they may also cause indirect positive impact on air quality, related to raising environmental awareness and promoting behaviour that decreases pressure on the environment.

Priority Axis 5 Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth

This axis includes, above all, 'soft' measures in the form of promoting legal and administrative cooperation and cooperation between citizens and institutions.. A variety of activities are planned, aimed at helping to establish and develop international contacts at the level of small territorial units.

These activities are generally indirect positive or neutral to the environment.

Joint awareness-raising actions are also planned among local actor groups to promote the cooperation in the field of culture, heritage and common identity of the South Baltic area.

Through the transfer of experience, development of cooperation also may have a positive impact on increasing environmental knowledge, and on improvement of environmental management. It may also have a positive impact on air quality.

5.2.4. HUMAN HEALTH

Areas of financial interventions, envisaged in the analysed Programme, will have impact on humans - their health and quality of life. Man is a part of the environment, and has a strong impact on it, but is also highly dependent on it. In most cases, when pressure on other environmental elements decreases, an indirect positive impact on humans occurs. On the other hand, with the increasing pressure on the environment, a negative impact on humans occurs. To a varying degree, a man is dependent on particular components of the environment. Humans' resistance to environmental disturbances has an individual nature, that depends on the environmental component and often has a subjective nature. Exposure of population to air pollution is very important for health, so the biggest attention should be paid to this element.

Priority Axis 1: Strengthening international activeness and innovation capacity of the South Baltic blue and green economy

Projects implemented under this axis will include 'soft' projects targeted primarily at SMEs. In all actions it is possible to strengthen the knowledge about the environment and the possibilities of influencing it. Of particular importance may be efforts to introduce innovative business models, which should also cover the dissemination of knowledge and the introduction of environmental management systems and innovative technologies. These actions should have a positive impact on all elements of the environment (including the reduction of air emissions), and thus on health.

Priority Axis 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

Significant positive impact on health protection will be presented by projects implemented under this axis and related to developing, demonstrating and implementing green technology investments as pilot projects in the scope of production of energy from renewable sources. In addition to the direct effect of eliminating traditional energy sources (replaced by the green ones), which is combined with a reduction of air emissions, they will constitute examples to the universal spread of positive experiences in this field.

The biomass projects may be an exception, because they are associated with a higher emission of pollutants into the air. Therefore, location of such projects should be analysed in detail in order not to worsen the situation, especially in areas of air quality standards exceedances, because it has a

negative impact on health of the population, especially the most vulnerable groups (the elderly, children and the sick).

Small, negative impact on air may result from measures promoting the use of natural and cultural heritage, especially tourism development, because this will be related to an increased mobility in the region and in the case of car transport use it may be associated with an increase in air pollutants emissions.

In turn, tourism development should have a positive impact on health (by increasing physical activity and managing leisure time).

Priority Axis 3: Improving cross-border connectivity for a functional blue and green transport area

It should be emphasised that these activities are primarily intended for people to raise their quality of life by increasing transport efficiency and accessibility.

Besides, from the point of view of the impact on health, these activities will have impact on the reduction of air emissions due to transport improvements.

Generally, it can be said that the implementation of projects under this axis will have a positive impact on reducing emission of air pollutants, and thus on health, because it will be associated with increasing transport efficiency. This should also cause an increase in energy efficiency in transport and hence reduce emissions of air pollutants.

However, increase of regional mobility may be expected as a result of the implementation of activities, and that can be associated with additional emissions of pollutants from transport. The use of low-carbon and carbon-free (where possible) sources of transport may be a preventive measure. Increase in noise level may occur locally. In such cases, it will require to take appropriate prevention and mitigation measures. The increase in harmful noise level can also occur as a result of the implementation of projects related to improving density and quality of air transport services, which is associated with air traffic growth.

In addition, increased emissions of air pollutants could occur locally in the areas of construction of parking lots and multimodal centres, if such were to be implemented under the Programme.

The above elements should be taken into account when selecting projects.

All activities under this axis toward the greening of transport should be assessed positively.

Priority Axis 4 Boosting human resource capacities for the area's blue and green economy

The Investment Priority under this axis means integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives and joint trainings in the scope of blue and green economy. Only 'soft' measures of the following types are expected: transfer of knowledge, Internet services, development of models.

Impact of this axis can be considered generally positive, or at least neutral for the environment. Thus, they may also cause indirect positive impact on air quality, related to raising environmental awareness and promoting behaviour that decreases pressure on the environment.

Priority Axis 5 Increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth

This axis includes, above all, 'soft' measures in the form of promoting legal and administrative cooperation and cooperation between citizens and institutions.. A variety of activities are planned, aimed at helping to establish and develop international contacts at the level of small territorial units.

These activities are generally indirect positive or neutral to the environment.

Joint awareness-raising actions are also planned among local actor groups to promote the cooperation in the field of culture, heritage and common identity of the South Baltic area.

Through the transfer of experience, development of cooperation may have a positive impact on increasing environmental knowledge, and on improvement of environmental management. It may also have a positive impact on health.

5.2.5. LANDSCAPE

The implementation of investments envisaged within the specific areas of intervention of the analysed Programme, has impact on the landscape. The landscape is changeable, has its own history, and is subject to seasonal changes. Human activity contributes to landscape changes which make the landscape to lose its ability of self-regulation. Therefore it also requires protection as other components of the environment.

Expected to be implemented under axes 1, 4 and 5 are only 'soft' actions related to: strengthening international activeness and innovation capacity of the South Baltic, boosting human resource capacities for the area's blue and green economy, increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth. Therefore, their negative impact on the landscape is not expected. However, they can (by increasing public awareness, and managers awareness at various levels, including SMEs, and local administrative centres) have a positive impact on developing the landscape when implementing other projects - outside the Programme.

Priority Axis 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

Projects possible to implementation under this axis (especially in the scope of the use of renewable energy sources) can have a negative impact on maritime and terrestrial landscape. Therefore, selection of projects in this field should consider this issue. It is particularly important that such

objects do not interfere with the natural highly valuable landscapes, as well as historical heritage objects representing spatial dominant or valuable urban compositions (e.g. viewing axes, historic urban layout).

Priority Axis 3: Improving cross-border connectivity for a functional blue and green transport area

The general nature of the Programme makes it impossible to identify specific projects to be implemented under the Programme. Therefore, it can be said only in general that some transport projects can have a negative impact on the landscape, but assessment of this impact will be possible only when the projects' characteristics and location are known.

5.2.6. CLIMATE

On the basis of the specific assessments, it should be noted that the overall implementation of the Programme will have a positive impact on tackling climate change on a global scale. However, it does not mean, that with these actions the process of changes can be blocked, since the concentration of greenhouse gases in the atmosphere continues to grow in the absence of cooperation of all countries in this scope. It is difficult in this situation is to assess the impact of the Programme on climate change (global process), and indirectly, the effects on particular elements of the environment. However, in accordance with *the Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment*[98] the detailed analyses have sought to take these issues into account.

Expected to be implemented under axes 1, 4 and 5 are only 'soft' actions related to: strengthening international activeness and innovation capacity of the South Baltic, boosting human resource capacities for the area's blue and green economy, increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth. Therefore, their negative impact on the climate is not expected. However, they can (by increasing public awareness, and managers awareness at various levels, including SMEs, and local administrative centres) have a positive impact on greenhouse gas emissions reduction, increase in the use of renewable energy sources, improvement of energy efficiency, which in turn will have impact on tackling climate change globally and regional adaptation to climate change.

[98] Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment, European Commission 2013

Priority Axis 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

Projects possible to implementation under this axis (especially in the scope of the use of renewable energy sources) will clearly have impact on reduction of greenhouse gases emissions, including impact on tackling climate change.

In contrast, promotion, protection and dissemination of natural and cultural heritage, associated with the development of tourism, can improve the mobility, and that may lead to additional greenhouse gas emissions.

Priority Axis 3: Improving cross-border connectivity for a functional blue and green transport area

Generally, improvement of the quality of cross-border transport will have impact on increasing its efficiency (including energy efficiency) and that will lead to reduction of greenhouse gas emissions. On the other hand, it will have impact on improvement of transport attractiveness, which may contribute to an increase in traffic and thus increase emissions.

5.2.7. SOIL

Most of the actions that may be implemented under the Programme are of 'soft' nature, which means that they are related to: exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth (Axis 1), boosting human resource capacities for the area's blue and green economy (Axis 4), increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth (Axis 5). They will not have the nature of construction work, and therefore will not have a direct impact on the soil. However, they may be important in improving general ecological knowledge, which in the future may contribute to reduction of impact of the works (performed in other projects implemented outside the Programme) on the soil.

Only measures under **Axis 2** ***Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth*** in the scope of the use of renewable energy sources may be partially associated with transformations of the soil.

In the course of the construction work, a temporary change of terrain topography may proceed. Excavations, foundations, embankments and cuttings will arise, and land and soil will be moved. Part of the spatial changes will disappear after completion of the construction works, and the terrain will be restored to the original state or close to its environment. However, many transformations will result in a lasting change in terrain. It is difficult, however, (given the general nature of the Programme and lack of knowledge in the scope of its specific projects) to determine which of the above effects is likely occur.

Axis 3 Improving cross-border connectivity for a functional blue and green transport area

Similar effects may occur under this axis, but in this case (given even more general specification of measures) it is even more difficult to determine whether the projects that have negative impacts on the environment will be implemented.

5.2.8. NATURAL RESOURCES

Expected to be implemented under axes 1, 4 and 5 are only 'soft' actions related to: strengthening international activeness and innovation capacity of the South Baltic, boosting human resource capacities for the area's blue and green economy, increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth. These actions will not involve direct use of raw materials, fuels and other natural resources. However, improving general and ecological knowledge, and increasing efficiency of activities (including measures for the sustainable development of the region) may have a significant positive impact on the conservation of natural resources.

Priority Axis 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

Projects possible to implementation under this axis (especially in the scope of the use of renewable energy sources) will have a positive impact on reduction of energy consumption by minimisation of share of the conventional energy mainly based on fossil raw materials. Small negative impact may only result from the consumption of building materials in the construction phase.

Similarly positive impact will constitute a part of a number of 'soft' measures to be implemented under this axis, such as 'enhancing management of natural and cultural heritage sites, transfer of knowledge, and the promotion of environmental management'. Their effects are similar to those described above for axes 1, 4 and 5.

Important for the efficient use of natural resources and the realisation of one of the leading projects *'Europe 2020'* (Europe effectively using its resources) will be projects relating to development, demonstration and implementation of green technologies (e.g. reuse, recycling and recovery of waste) .

Besides the benefits of promoting the use and development of the environmental and cultural potential, activities in this area may result in increased mobility in the region, and that can be related to an increase in fuel consumption. These actions may, however, be compensated improving public transport under the axis 3.

Priority Axis 3: Improving cross-border connectivity for a functional blue and green transport area

Activities under this axis are associated with the development of environmentally-friendly, low-carbon transport systems (i.a. river and maritime transport, multimodal connections). They shall include transport improvements, greening of transport, and increase of its accessibility. These actions will improve energy efficiency, which will result in fuel savings. A similar effect will be represented by actions aiming at improvement of public transport and making it more attractive (including intermodal transport).

However, these actions, on the other hand, will raise transport attractiveness, which will increase traffic and can have impact on the growth of fuel consumption.

5.2.9. HISTORICAL HERITAGE OBJECTS

The term historic heritage object should be understood as any product of human activity, giving evidence to his past activities, which has historical, scientific, artistic or emotional value. This could include e.g. buildings (including industrial ones), urban complexes, landscape etc. The analysis cannot exclude archaeological heritage objects, both discovered and undiscovered, located onshore and offshore.

Generally, actions expected to be implemented under axes 1, 4 and 5 (related to strengthening international activeness and innovation capacity of the South Baltic, boosting human resource capacities for the area's blue and green economy, increasing cooperation capacity of local actors in the South Baltic area for the blue and green growth) will be of 'soft' nature and will have no impact on historical heritage objects. However, some of them may have an indirect positive impact on them, e.g. cross-border training programmes in the field of language and cross-cultural skills, joint actions of local self-governments, networking, etc.

Priority Axis 2: Exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth

Many of the activities under this axis is directly related to the promotion and protection of cultural heritage, including historical heritage objects. They may involve the restoration and conservation of historic heritage objects, which will undoubtedly have a positive impact on the overall condition of those buildings. They may also relate to their sharing, which on the one hand, can be positive because this may have impact on the availability of funds for maintenance. On the other hand, more tourist pressure may be posed on them.

Execution of certain activities in the field of renewable energy can cause special effects. In view of the general nature of the Programme, a specific impact of these projects cannot be determined, and

attention should be paid to this issue while implementing the projects. The elements to be taken into account should include visual effects e.g. relating to the exposure of a historical heritage object. This issue was partly taken into account when discussing the impact on the landscape.

Priority Axis 3: Improving cross-border connectivity for a functional blue and green transport area

Measures implemented under this axis should not have a negative impact on historical heritage objects, however, it should be considered, that they will increase accessibility of historical heritage objects. As mentioned above, this will be associated with positive aspects on one side (such as increased revenue for conservation and maintenance), and increased pressure of tourists, on the other side.

Complete assessment requires knowledge of the location and nature of projects to be implemented under the Programme.

5.2.10. MATERIAL GOODS

The Programme impact on material goods will be both positive and negative. Negative impact associated with the possible decline in property value (buildings and land) due to unwanted neighbourhood of new investments, which degrade the attractiveness (landscape and functional) of the site in public opinion, and vice versa location and access to historical heritage objects, valuable natural areas and means of communication - all have impact on increasing value of the property..

All activities related to the protection and development of cultural heritage will normally have indirect positive impact on the value of modernised facilities, and ability to increase financial income from the provision of the services they offer. Indirectly, they also affect real estates located in their neighbourhood by ‘attracting’ and increasing the income of companies providing ancillary services e.g. catering or accommodation services.

Improvement of transport efficiency and development of multimodal nodes may also have impact on the increase of the value of commercial buildings. On the other hand, this may have a negative impact on the properties, around which the modernisation of the transport system caused an increase in vehicular traffic.

The analysis shows that large investments are unlikely to be implemented under the Programme, so it is estimated that most of the impacts will be positive.

5.3 ASSESSMENT OF THE CUMULATIVE IMPACTS

Cumulative effects of the analysed Programme are defined as changes in the environment caused by the influence of actions proposed in the Programme in conjunction with other existing effects and impacts of projects to be implemented in the future.

The starting point for analysis of the possible cumulative impact of the Programme was based on the following:

- analysis of possible environmental impacts of projects that are likely to be implemented under the Programme,
- environmental impact of existing infrastructure and
- environmental impact of projects planned for realisation but other than those proposed in the Programme.

The analysis of the impacts that the Programme is likely to have on the environment, and that can be combined with other effects was carried out on the basis of identified projects that could be funded under the Programme (section 3.1) and the results of analyses presented in section 5.2 of the Report.

The Programme has a general nature and does not clarify characteristics nor location of projects to be funded. In this situation we can only evaluate the accumulation of interactions that can occur if projects are located within the existing or planned cumulative impact areas of the existing or planned infrastructure.

GIS method can be used for determining cumulative impacts. By applying maps of different content (e.g. existing infrastructure - map posted below, and maps of protected areas - in chapter 4) and maps of projects planned to be implemented.

In order to determine places of possible accumulation, materials available in particular countries were used, relating to existing and planned infrastructure.

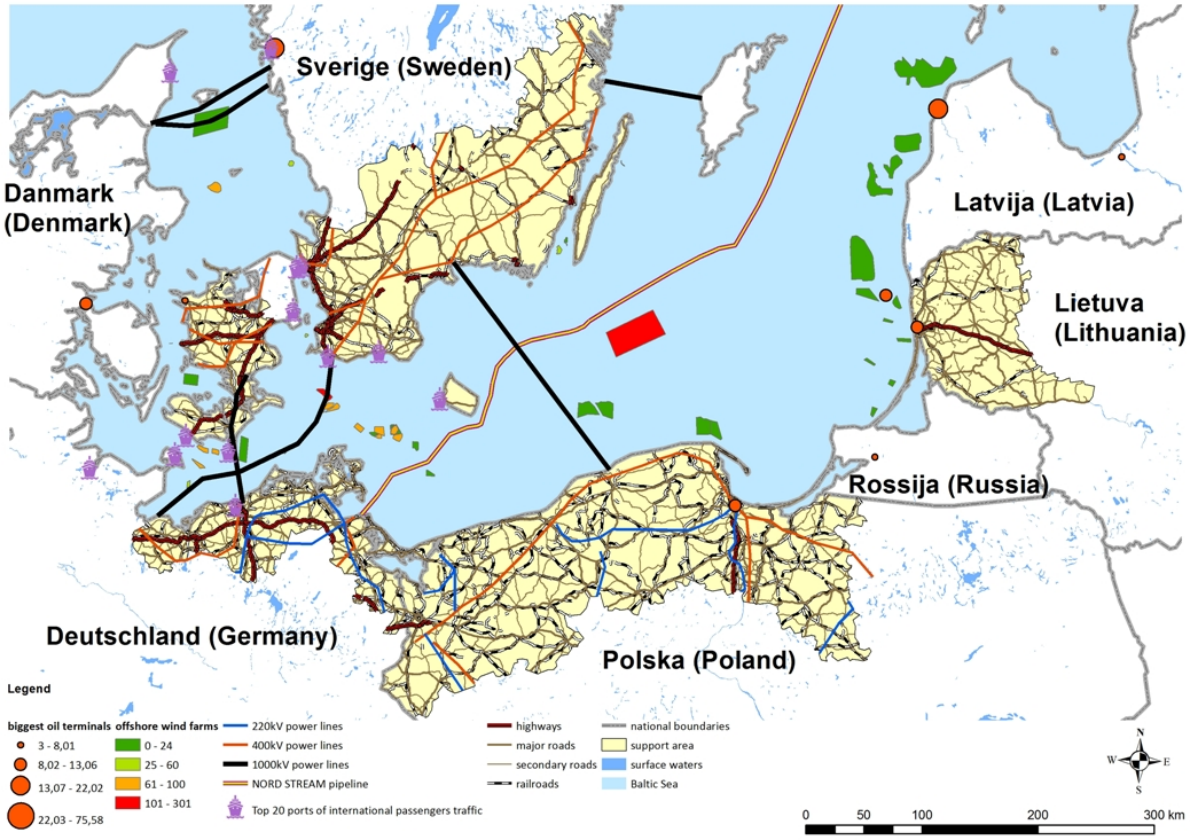

Figure 28 Existing infrastructure and areas with higher probability of cumulative impacts.

The greatest possibility of cumulative impacts may occur when the programming actions will be located within the larger urban centres, ports, terminals for transshipment of crude oil (objects are shown on the map attached above) and at the same time within the area of protected sites or nearby.

Accumulation of impacts may also refer to the coastal zone which is indicated as one of the areas mostly endangered by biodiversity loss in the EU. Strong tourist, shipping, fishing, industrial pressure and construction of devices protecting the sea coast create area of conflict between the need to protect this fragile environment and the need of its exploitation and penetration. Currently the Baltic Sea coast is extensively used for the purposes of recreation (a large number of bathing areas), small fishing ports and harbours (within the area covered by the Programme there is a total of 135 ports, including 92 small ports).

Land use and the required protection against the effects of extreme events and rising sea levels make it necessary to introduce coast protection development that will however result in a significant transformation of the natural sea coast.

The Programme will allocate large part of funds to sustainable development of tourism. This could potentially cause increased pressure within the protected areas.

In case of the analysed Programme, the strongest impact on the environment can be represented by: land conversion, gradual area urbanisation, new communication solutions, changes in climatic conditions, changes in wind conditions, changes in water conditions, natural disasters, industrial disasters, transport disasters, emergencies, etc.

The following list shows general recommendations for selecting projects for implementation from the point of view of minimising the accumulation of impacts in connection with their implementation:

a) design phase:

- change of investment location, in order to eliminate the effect of cumulative impacts,
- change in technical parameters of the proposed investment in order to reduce pressure on the environment,
- change of plant/installation technology,
- introduction of additional technical solutions to protect sensitive components of the environment;

b) realisation phase (construction):

- use of construction technologies, machines and substances that are safe for the environment,
- consideration of the time of year and day when planning deadline for completion of construction works, and division of works into phases and combining similar works in order to eliminate duplication of activities (e.g. excavation),
- application of additional security measures at the construction site, on the access roads and in the immediate environment (e.g., in the form of tree trunk covers);

d) operation phase (exploitation):

- temporary or seasonal changes in the operating parameters of the facility;

e) liquidation phase:

- carrying out demolition works according to the schedule that takes into account drivers of pressure on the sensitive elements of the environment, and periods in which these elements may be significantly deteriorated.

Due to the lack of specification of the location and characteristics of projects supported by the Programme, it is difficult to determine the possible accumulation of their impact with other effects.

However, the nature of the Programme shows that even if some measures could to some extent affect the environment, the scope of its impact will be rather limited, because the projects will be implemented on a small scale (as indicated in the Programme), and the accumulation of their impacts will depend mostly on location.

Particular attention shall be paid primarily on the possibility of cumulating impact on protected areas, including ecological corridors and cities.

Within protected areas and ecological corridors, concentration of investments may be of crucial importance, and result in the following:

- additional fragmentation of areas through linear investments,
- cutting ecological corridors with new investments, overlapping investments, increasing traffic volume on the existing transportation routes,
- air pollution and its impact on protected areas, particularly in transport route nodes,
- noise caused by overlapping investments.

In municipalities, accumulation of effects may concern, in particular:

- increase in air pollution from new overlapping investments, and so significant air pollution in cities,
- increase in noise, which itself constitutes an independent problem,
- changes in water condition of groundwater,
- reduction in retention capacity of the basin, causing increase in speed of storm water runoff and an increased flood risk.

Serious damages relating to projects that are completed or during implementation can play significant role from the point of view of cumulative and direct impacts. Due to the generality of the Programme, the likelihood of major damages and their consequences cannot be analysed.

Specific recommendations should be indicated at the stage of the environmental impact assessment of individual projects, if such is required, due to the project scale and location.

5.4 ANALYSIS OF THE POTENTIAL CROSS-BORDER IMPACT OF THE PROGRAMME

As part of works on the Report, the possibility of cross-border environmental impacts was analysed both between countries participating in the Programme, as well as cross-border impact of the Programme on the environment in neighbouring countries. Identification of nature and scale of potential transboundary impacts is extremely difficult due to a very general wording of most areas of support, and location of individual projects that can be supported. The analysis of potential measures

under the Programme shows that the actions are unlikely to cause environmental impacts across borders. However, an overall assessment that excludes cross-border impacts can be performed only on the basis a detailed analysis of the characteristics of individual investments and their location.

It should also be emphasised that the above considerations on the possibility of occurrence of transboundary impacts are merely hypothetical and it does now constitute the possibility of their occurrence or exclusion.

However, it should be remembered, that the final decision on the possibility of implementing the investment will be made on the basis of detailed analysis (including environmental analyses) that will be performed at the preparation stage of all projects to be implemented in accordance with the applicable provisions of countries participating in the Programme (based on EU regulations).

When an environmental report finds a possible transboundary impact of a given investment, in accordance with the regulations in force, it will be necessary to conduct adequate cross-border proceedings in respect to such a project.

Given the above, it is not possible to make final evaluation of the potential cross-border impacts at the stage of Programme's strategic impact assessment. However it may be required during environmental impact assessment carried out for individual projects, but taking into account the exemplary projects presented in the Programme it is very unlikely to happen..

5.5 THE RESULTS OF ANALYSES OF RESEARCH ISSUES

As part of additional research analysis was performed relating to research problems posed in the form of research questions, problems and comments made by competent authorities of the participating countries at the stage of the Scoping Report.

Results of these studies are presented in the table set out below.

Table 15 Results of detailed analyses, including those arising from the comments of the competent authorities of countries covered by the Programme.

No.	Issues covered by detailed analyses	The results of analyses
1	Does the Programme include and propose pro-environmental objectives relevant to the needs in this regard?	The aim of the Programme is to increase the 'blue' and 'green 'growth potential of the South Baltic area through cross-border cooperation, however, its axis 2 (exploiting the environmental and cultural potential of the South Baltic area for the blue and green growth) includes measures that have a direct impact on improvement of the environment. In addition, many actions of the other axes will have indirect positive impact on its condition. It is possible to increase the positive indirect impact on the environment by increasing internal coherence of the Programme particularly in the priority axis 2, and by integrating soft issues with those related to environmental protection. Given the main objective of the Programme and its limited nature (including financial) it cannot be expected that the Programme will solve all the problems of the environment occurring in the South Baltic area. However this will have impact on its behaviour and improvement.
2	Have the sustainable development indices been proposed?	Indices proposed in the Programme indicators do not relate directly to the environment. This should be explained by the fact that the Programme (e.g. due to limited resources) only partially implement the objectives of environmental protection, and activities taking place outside the Programme shall be of crucial importance for the environment.

No.	Issues covered by detailed analyses	The results of analyses
3	Is there contingency between diagnosis, objectives, proposed actions and monitoring indices in the context of sustainable development?	The analysis of the environment status identified the most important environmental issues in the Programme area. They were confronted with the objectives and possible measures that are likely to be implemented under the Programme. It can be concluded that in general the Programme will contribute to the sustainable development of the region, although it will not be the only driver of such development. Generally, while assessing the Programme we can find a balance between the fundamentals of sustainable development (social, environmental and economic), but its effects will depend on the projects that will be implemented under the Programme. Some inconsistency was diagnosed in the Programme in terms of exemplary activities and areas of interventions under the priority axis 2. To ensure positive impact of the Programme on the environment it would be advisable to extend the exemplary measures under the priority axis 2 by activities related to the improvement of the state of protected areas and the development of green infrastructure
4	Will the proposed actions contribute to effective use of natural resources, including changes of production and consumption patterns and to management of demand for these resources?	It can be said that part of the activities in each of the programming axes may have impact on raising the environmental awareness, including the rational approach to the efficient use of natural resources and the change of patterns of production and consumption into more environmentally friendly ones. However, the results in this scope will depend on the selection of projects to be

No.	Issues covered by detailed analyses	The results of analyses
		funded.
5	Will the proposed activities contribute to replacing the use of non-renewable resources with renewable resources, and thus contribute directly or indirectly to reduction of the negative impact on the individual components of the environment, and the environment as a whole?	Activities implemented under axis 2 are associated with specific steps towards the use of renewable energy sources, which will undoubtedly contribute to reduce the consumption of fossil fuels. Undoubtedly, the measures under Axis raise the environmental efficiency of transport, which will also reduce consumption of fossil resources. In addition, many actions planned to be implemented under the remaining axes will have a positive impact on the rationalisation of resource use, and reduction of pressure on the environment. However, as already indicated above, it should be noted that due to the limited nature of the Programme, this effect cannot be significant, but is important.
6	Will the proposed activities contribute to the implementation of eco-innovative solutions?	Eco-innovation is a move towards progress in achieving the objectives of sustainable development through the reduction of negative impacts on the environment or achieving a more efficient and more responsible use of resources.[99] The Investment Priority: Promoting innovative technologies in environmental protection and resource efficiency will be implemented within the Axis 2. Moreover, a number of other activities

[99] http://ec.europa.eu/environment/eco-innovation/faq/index_en.htm

No.	Issues covered by detailed analyses	The results of analyses
		(even if associated with boosting competitiveness of the region) must contain elements of innovation
7	Will the planned activities contribute to the improvement of air, surface water and groundwater, or soil?	Detailed analysis of the impact on the individual elements of the environment indicate that a number of activities that can be supported under the Programme may contribute to the improvement of the environmental components. A very positive (but also negative) impact on components of the environment is presented in the sheets of in-depth analysis and in the summary table in section 5.1. Generally, the analysis determines a positive impact of the Programme on the environment, although some projects may also have a negative impact on some elements of the environment.
8	Do the proposed actions regard the need for protection of nature and landscape and whether they will support creation and appropriate functioning of protected areas within the system of Natura 2000?	Measures proposed in the Programme (especially in Axis 2) may have a positive impact on nature and landscape protection and the functioning of protected areas covered by the Natura 2000 scheme. This will depend, however, on the selection of projects to be implemented. Therefore, it is proposed that the project selection should consider criterion of the positive impact on protected areas. Categories of intervention listed in the Programme point to the allocation of significant funds for protecting and enhancing biodiversity, nature conservation and green infrastructure, which will contribute to the implementation of the EU Biodiversity Strategy to 2020. The Programme should, however, make a

No.	Issues covered by detailed analyses	The results of analyses
		catalogue of exemplary measures for investment priority 6(c) - conserving, protecting, promoting and developing natural and cultural heritage by the activities directly related to the protection and strengthening of biodiversity. The internal cnsistency of the Programme will increase in terms of positive impact on nature.
9	Will the proposed actions affect human health, and if so, then in what manner?	Measures proposed in the Programe should have at least a partial impact on the elimination of pollutants (especially under Axis 1 and 2), and that would also have an impact on human health. In addition, the Programme should create better conditions for resting and spending leisure time, and that will also have a positive impact on health (physical and mental). The impact of individual actions of the Programme on health has been presented in detail in the analytical section of the Report.
10	Will the proposed activities contribute to the conservation of cultural values?	Measures proposed under the axis 2 should contribute directly to conservation of cultural values. A number of actions under other axes should also have a positive impact on cultural heritage. However, the results in this scope will depend on the selection of projects to be implemented.
11	Will the proposed activities contribute to raising the acological awareness?	A number of activities under the Programme will be related to education, both at the level of business and society. Although the Programme does not directly include actions in the scope of environmental education, however, indirectly all projects related to increasing competitiveness of

No.	Issues covered by detailed analyses	The results of analyses
		the region, pilot solutions, and education by definition must include elements of environmental education if we take into account the objectives of the Programme.
12	Will the Programme implementation contribute to improvement of the state of environment or its deterioration? What drivers will cause such environmental condition, and how to enhance/eliminate them?	The diagnosis of the environment status identified the most important environmental issues in the area covered by the Programme. It is generally assessed (as results from the detailed analyses and presented proposals) that the Programme will have a positive impact on the state of the environment in the region, but some activities may have negative effects on some elements of the environment. However, detailed assessment of this issue is not possible given the general specification of the Programme. In order to improve the environmental efficiency of the Programme, a number of recommendations is proposed, including selection criteria for projects to be implementation.
13	According to the presented assumptions, the activities covered by the draft Programme, especially in the field of new technological developments, tourism development, environmental protection as well as waste management and transport development, may have form of actions or activities that are likely to have significant environmental effects within the meaning of the Act on EIA (Poland GDOŚ (General Directorate for Environmental Protection - GDEP)).	As part of the analysis, the Programme measures were identified, which may have a significant impact on the environment according to the criteria of the following directives: 2001/42/EC and 2011/92/EU, as well as the EIA Act. They are presented in section 3.1 of the Report.

No.	Issues covered by detailed analyses	The results of analyses
14	Given the framework nature of the presented assumptions, the lack of a list of projects and project selection criteria, and the lack of spatial indications, the following recommendations are presented for the development of the environmental report (Poland GDOŚ (General Directorate for Environmental Protection - GDEP)).	Due to the general nature of the Programme, the Report development applied a similar degree of generality.
15	The Environmental Report, prepared in the course of the strategic environmental assessment, should fully comply with the requirements deriving from Article 51 paragraph 2 of the Act on EIA, under the conditions referred to in Article 52 paragraphs 1 and 2 of the above mentioned law. It should be emphasized that the Report should refer to the full version of the proposed Programme and cover all the planned activities that are likely to have significant environmental effects. In accordance with Article 52 paragraph 1 of the EIA Act, the level of detail in analyses and recommendations carried out in the Report should be adjusted to the level of detail of the provisions of the draft document (Poland GDOŚ (General Directorate for Environmental Protection - GDEP))..	The Scoping Report covers all requirements of directives 2001/42/EC and 2011/92/EU, as well as the EIA Act. It also considers requirements of other countries participating in the Programme. The scope was subject to consultation in these countries in accordance with their regulations. The received opinions and comments have been taken into account in the Scoping Report, and when developing the Report.
16	During the preparation of the Report, the analysis should include other provisions related to this area of strategic, national	Development of the Report included analysis of the indicated documents. The results of the detailed analysis are provided in the appendix 3 of the

No.	Issues covered by detailed analyses	The results of analyses
	and transnational documents, as well as provisions of their environmental reports (as far as strategic assessment was conducted) (Poland GDOŚ (General Directorate for Environmental Protection - GDEP)).	Report and the results are presented in section 3.
17	In view of the spatial range of the draft Programme, it is recommended to pay special attention to interactions that may occur in the border area of the project area, and to the potential cross-border effects on the territories of countries not covered by the draft Programme (Poland GDOŚ (General Directorate for Environmental Protection - GDEP)).	In the course of works on the Report, the possibility of cross-border environmental impacts was analysed both between countries participating in the Programme, as well as in relation to the countries covered by the Programme. At this stage of the analysis, given the global nature of the Programme, no such effects were found, however, in the evaluation of individual projects such effects can not be excluded.
18	The presentation of the spatial phenomena and interactions between them should be made in a graphic (maps) form (Poland GDOŚ (General Directorate for Environmental Protection - GDEP)).	Graphic techniques were used (where possible) in the Report, including GIS tool.
19	Development of the Report should take into account the guidelines of the European Commission on strategic environmental assessment in terms of integrating climate change and biodiversity. (Poland GDOŚ (General Directorate for Environmental Protection - GDEP))	The European Commission guidelines were used.
20	The Scoping Report shall consider art. 3 par. 2 of the Act of 3 October 2008 on the provision of information about the environment and its protection, public	Impact on health has been analysed and presented in the relevant sections of the Report.

No.	Issues covered by detailed analyses	The results of analyses
	participation in environmental protection and environmental impact assessment (Journal of Laws of 2013, item 1235, as amended), which states that whenever the Act refers to the impact on the environment it shall also mean the impact on human health (Poland GIS).	
21	The Environmental Report shall meet the requirements deriving from Article 51 paragraph 2 of the Act of 3 October 2010 on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment (Journal of Laws of 2008 No. 199, item 1227, as amended), considering the requirements set out in Article 52 of the Act (Poland GIS).	As indicated above, the scope of analysis covered provisions set out in Directives 2001/42/EC and 2011/92/EU, as well as in the EIA Act.
22	The Report shall, in particular: c) identify, analyse and assess the anticipated significant environmental effects resulting from the proposed use of the land, including impact on biodiversity, humans, water, soil, landscape, natural resources, historical heritage objects, material goods, and considering the interrelationship between the above mentioned elements of environment and interactions between these elements; d) present solutions envisaged to prevent,	In accordance with the aforementioned provisions, the scope of analysis covered all the mentioned elements, and the results for each of these elements are presented in the Report.

No.	Issues covered by detailed analyses	The results of analyses
	reduce or offset any significant adverse effects on the environment resulting from implementing the draft plan (Poland GIS).	
23	In accordance with the requirements of Article 57 paragraph 2 of the EIA Act, where the planned execution of a document relates to marine areas, the authority competent to make opinions and agreements within the strategic environmental impact assessments shall also be the director of maritime office (Poland UM Słupsk).	Scoping Report has been evaluated by the maritime offices in Slupsk, Gdynia and Szczecin.
24	Therefore, the local Authority reports that in addition to the information referred to in Article 51 paragraph 2 of the EIA Act, in relation to issues affecting Polish maritime areas referred to in the Act of 21 March 1991 on the Polish maritime areas and the maritime administration (Journal of Laws of 2013 item 934), the environmental Report shall include and refer to the following comments: • identify the impact of the provisions of the document on the marine environment, including natural features and designation purposes of marine Natura 2000 sites, as well as the integrity and cohesion of these areas; • provide solutions envisaged to prevent, reduce or offset any significant adverse	The comment has been, for the most part, taken into account. The relevant sections of the Report present diagnosis of the current state, impact on biodiversity considering natural values of the Baltic Sea and the coastal zone, and the relationship between those areas. The Report proposes mitigation measures to tackle potential negative impacts of the Programme. Due to the large-scale of the Programme, covering a region of five countries (an area of 118.5 thousand Km^2), over a thousand of Natura 2000 sites, and dozens of BSPAs, the eport does not include drafted and proposed protected areas. The Report uses digital databases of HELCOM and the European Environment Agency, that do not include projected and proposed areas for protection.

No.	Issues covered by detailed analyses	The results of analyses
	effects on the environment resulting from implementing the document; • take into account existing and planned or proposed protected areas referred to in Article 6 of the Act of 16 April 2004 on Nature Conservation (Journal of Laws of 2013 item 627) located in marine areas and coastal zone; • take into account the effects of the implementation of the document on the coastal zone and the processes of sea-land interaction (the integrity of the marine and terrestrial ecosystems).	Consideration of such areas is recommended at the stage of localisation analysis for individual projects .
25	The Report should refer to the full version of the proposed Programme and cover all the planned activities that are likely to have significant environmental effects, and not just the actions provided for financing (Poland UM Słupsk).	The Report refers to the complete, current version of the Programme, and covers all of the identified measures.
26	In addition, the analysis should take into account the impact (and the accumulation of impacts) associated with the existing, implemented or planned activities and projects in the area covered by the document, including activities and projects not covered by the draft document (Poland UM Słupsk).	The comment has been taken into account. The Report conducted assessment of cumulative impacts considering conflict situations at the point of junction between the economic exploitation of the Baltic Sea, and the need to protect its assets. The Report has taken into account, inter alia, wind farms planned in the Baltic Sea, and development of green and blue tourism.
27	In addition, the local Authority in accordance with Article 27a paragraph 2 of the Act of 16 April 2004 on Nature	The Report generally refers to conservation plans for Natura 2000 sites, and risks associated with the

No.	Issues covered by detailed analyses	The results of analyses
	Conservation (Journal of Laws of 2013 item 627) supervises the marine Natura 2000 sites: • Pomeranian Bay PLB 990003 - partially, • Słupsk Bank PLC 990001 - in full, • Coastal Waters of the Baltic Sea PLB 990002 - partially. It is advisable to take into account in the Environmental Report - data and conclusions, worked out at the stage of preparing environmental documentation and draft conservation plans for the above mentioned Natura 2000 sites (Słupsk City Hall).	implementation of the Programme. Potential threats to these areas are indicated in connection with implementation of the Programme under evaluation. This is mainly due to the scale and nature of the assessed Programme. The Program eligible area covers over a thousand of Natura 2000 sites, and the Programme implements mainly soft measures. That is why there was no possibility to make reference to specific areas of Natura 2000.
28	The Report shall be prepared in line with the requirements defined in Article 51 paragraph 2 of the Act of 3 October 2008 on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessment, considering the impact of the Programme on the marine environment of the Gdańsk Bay and the Vistula Lagoon (including - the impact on Natura 2000 sites) (Gdynia City Hall).	The comment has been partially taken into account. The Report generally refers to impact assessment relating to Natura 2000 sites and the Baltic Sea, indicating potential risks and opportunities for their mitigation. The assessment made no reference to the particular areas of the Natura 2000 for the reasons mentioned above.
29	Information included in the Report, in accordance with Article 52 paragraph 1 of the above mentioned Act, should be adjusted to the content and level of detail of the South Baltic Cross-Border	The comment has been taken into account. The Report takes into account cumulative impacts. Both the level of detail of the Programme and its contents make the Report to generally refer to the impact on the Baltic Sea environment.

No.	Issues covered by detailed analyses	The results of analyses
	Cooperation Programme 2014-2020. The Report should determine the cumulative impact of activities (planned to be implemented under the Programme) on the marine environment of the Vistula Lagoon and the Gdańsk Bay (Gdynia City Hall).	
30	Implementation of the Programme, i.a. through the promotion of underwater cultural and natural features as well as the development of tourism and port infrastructure, can contribute to the growth of tourism flows and transport traffic in the Gdańsk Bay and the Vistula Lagoon, which potentially will be associated with an increased pressure on maritime areas. Therefore, the Report must consider the impact of the Programme implementation on the marine environment, including the Natura 2000 sites (Gdynia City Hall).	The comment has been taken into account. The Report refers to the potential impacts of the increased pressure of tourism on areas of natural and cultural heritage at a level of detail referring to the scale and content of the Programme.
31	At the same time the local Authority reports that in addition to the information referred to in Article 51 paragraph 2 of the EIA Act, in relation to issues affecting Polish maritime areas referred to in the Act of 21 March 1991 on the Polish maritime areas and the maritime administration (Journal of Laws of 2013 item 934), the environmental Report shall include and refer to the following comments: Take into account existing and planned or proposed protected areas referred to in	Due to the large-scale of the Programme, covering a region of five countries (an area of 118.5 thousand Km^2), over a thousand of Natura 2000 sites, and dozens of BSPAs, the Report does not include drafted and proposed protected areas. The Report uses digital databases of HELCOM and the European Environment Agency, that do not include projected and proposed areas for protection. Consideration of such areas is recommended at the stage of localisation analysis for individual projects .

No.	Issues covered by detailed analyses	The results of analyses
	Article 6 of the Act of 16 April 2004 on Nature Conservation (Journal of Laws of 2013 item 627) located in marine areas and coastal zone (Szczecin City Hall).	
32	Cover all the planned activities that are likely to have significant environmental effects. In addition, the analysis should take into account the impact (and the accumulation of impacts) associated with the existing, implemented or planned activities and projects in the area covered by the document (Szczecin City Hall).	The comment has been taken into account. The Report examines the impact of projects that are likely to have impact on the environment, and cumulative impacts at a level of detail referring to the scale and content of the Programme.
33	Identify the impact of the draft document on the marine environment, including natural habitats, plant and animal species and their habitats, for which marine Natura 2000 sites were designated, as well as the impact on integrity and cohesion of these areas (Szczecin City Hall).	The comment has been taken into account. The Report examines the potential impact of the Programme's agreements on the marine environment, plant and animal species and their habitats at a level of detail referring to the scale and content of the Programme.
34	In addition, the local Authority in accordance with Article 27a paragraph 2 of the Act of 16 April 2004 on Nature Conservation (Journal of Laws of 2013 item 627) supervises the marine Natura 2000 sites. Therefore, in view of Article 29 paragraph 1 of the above mentioned Act, preparation of the environmental documentation and draft conservation plans was started for the following Natura 2000 sites: • special protection areas - 'Pomeranian	The Report generally refers to conservation plans for Natura 2000 sites, and risks associated with the implementation of the Programme. Potential threats to these areas are indicated in connection with implementation of the Programme under evaluation. This is mainly due to the scale and nature of the assessed Programme. The Program eligible area covers over a thousand of Natura 2000 sites, and the Programme implements mainly soft measures. Therefore, no reference is made to specific areas of Natura 2000.

No.	Issues covered by detailed analyses	The results of analyses
	Bay' (area code PLB990003), 'Szczecin Lagoon' (PLB320009), and 'Kamieński and Dziwna Lagoon' (PLB320011); • areas of Community importance / special areas of conservation - 'refuge in the Pomeranian Bay' (area code PLH990002) and 'Mouth of the Oder River and the Szczecin Lagoon' (PLH320018). It is advisable to take into account in the Environmental Report - data and conclusions, worked out at the stage of preparing environmental documentation and draft conservation plans for the above mentioned Natura 2000 sites (Szczecin City Hall).	
35	Determination of the scope of strategic environmental assessment in Denmark must be performed in accordance with the Act No. 939 of 07.03.2013 on environmental assessment Act No. 939 of 07.03.2013 of plans and programmes. Content and analyses proposed for the Environmental Report are compliant with Danish legislation, and only one issue shall be emphasised - inclusion of 'human health' to the list of issues to be evaluated (Denmark National Coordinator for the South Baltic Cross-Border Cooperation Programme).	Health impact assessment is one of the assessment elements in the Report.
36	The Environmental Report consultation process in Denmark will be led by the	Information will be taken into account.

No.	Issues covered by detailed analyses	The results of analyses
	National Coordinator for the South Baltic Cross-Border Cooperation Programme. In addition to the Danish Nature Agency, direct consultations will be carried out also with the Danish Environmental Protection Agency, Ministry of Transport, the Danish Business Authority and the Danish Maritime Agency, Denmark National Coordinator for the South Baltic Cross-Border Cooperation Programme)	
37	Generally, the term 'historical heritage objects' does not have to contain archaeological heritage, which is why it is important to either give a detailed explanation of the term 'historical heritage objects', so that it was clear that the archaeological heritage falls within the definition of this term, or add 'archaeological heritage' to the list of environmental elements under consideration (Germany, State Agency for Culture and the Environment of Mecklenburg-Vorpommern)	The recommendation has been taken into account by adding (in all appropriate places) information that the term historical heritage (and similar expressions) also means archaeological heritage.
38	In terms of assessing the impact of the Programme on the sea basin in coastal areas as well as on underwater habitats, it is absolutely necessary to refer to a code of good management practices, in line with the development of Underwater Cultural Heritage in the Baltic Sea Region (COPUCH, http://www.nba.fi/fi/File/701/copuch-	The recommendation has been taken into account in the course of in-depth analysis of the potential negative impacts of the Programme. It has also been included in recommendations and conclusions of the Report.

No.	Issues covered by detailed analyses	The results of analyses
	ohjeistus.pdf), which sets out common standards and goals for the countries of the Baltic Sea region (Germany State Agency for Culture and the Environment of Mecklenburg-Vorpommern).	
39	The scope and level of detail of the analysis will be subject to individual assessment, in accordance with the level of planning (under the Programme). It is important to distinguish historical archaeological heritage that cannot be changed because of their unique scientific and historical importance, from historical archaeological heritage that can be changed but only after obtaining a permission (Germany, State Agency for Culture and the Environment of Mecklenburg-Vorpommern).	The comment has been considered in the analyses
40	Archaeological heritage sites that cannot be changed are generally defined as objects visible on the ground, such as burial mounds, megalithic tombs, fortifications, etc. Protection includes both their object and its appearance, which means that there must be a certain distance between the monument and the planned activities (under the Programme) to avoid a significant change in appearance (landscape). These conditions must be taken into account from the beginning of any planning operations (Germany, State Agency for Culture and the Environment of	Impact on the exposure of fixed historical heritage objects has been taken into account in the assessment of both the historical heritage objects, and the landscape.

No.	Issues covered by detailed analyses	The results of analyses
	Mecklenburg-Vorpommern).	
41	Archaeological heritage sites, that can be changed after obtaining authorisation, must be extracted (discovered, tested) before the start of any construction works, in a professional manner, and the work cost shall be paid by the investor, including documentation costs (§ 6 Abs 5 DenkmalschutzgesetzMecklenburg-Vorpommern, http://www.landesrecht-mv.de/jportal/portal/page/bsmvprod.psml;jsessionid=88B85A142CBE04FA8F2B4AABF75DCB38.jp55?showdoccase=1&doc.id=jlr-DSchGMVrahmen&doc.part=X&doc.origin=bs&st=lr (Germany, State Agency for Culture and the Environment of Mecklenburg-Vorpommern).	The comment has been adopted for recommendation

6. ASSESSMENT OF THE EFFECTS IN THE ABSENCE OF IMPLEMENTATION OF THE PROGRAMME AND THE BENEFITS OF ITS IMPLEMENTATION

In assessing the impact of the lack of implementation of the Programme the following two analyses were conducted: analysis of share of funds allocated to environmental protection in relation to the total funds planned for each priority axis in the Programme, and analysis of the negative and positive environmental impact which was defined in section 5.

Own analyses conducted on the basis of data included in the Programme (particularly in section 2.A.8) resulted in determination of the approximate amount of funds allocated to environmental measures. Results are presented in the table set out below.

Table 16 Allocation of funds for environmental protection under the Programme.

Priority Axis	I Strengthening international activeness and innovation capacity	II Exploiting the environmental and cultural potential	III Improving cross-border connectivity	IV Boosting human resource capacities	V Increasing cooperation capacity
EU ERDF funds[100]	9 972 000	39 888 000	15 789 000	8 310 000	4 155 355
The share of funds in relation to the entire Programme	12 %	48 %	19 %	10 %	5 %
The financial support for environmental protection (direct + indirect)	2 400 000	13 512 000	6 589 000 + 700 000	600 000	0
The share of support allocated to environmental	24 %	34 %	46 %	7 %	0 %

[100] European Regional Development Fund (financial resources are given in EUR).

protection in particular priority axes					
Estimated amount of support to be used for purposes related to climate change (in EUR)[101]	2 820 000	7 212 000	7 209 000	0	0
The share of resources used for purposes relating to climate change in the total Programme allocation (%)	28 %	18 %	46 %	0	0

The analyses show that about EUR 23.8 million have been allocated to environmental protection, which represents about 30% of all funds allocated to the Programme (without technical assistance). However, about EUR 17.2 million have been allocated to projects related to tackling climate change, which represents about 22% of all funds allocated to the Programme (without technical assistance).

Based on the analyses it can be concluded that measures provided for in the Programme, will have a positive impact on the environment almost under every axis. In most cases, the impact will be indirect.

Axis 5 is the exception, because it is difficult to identify its activities related to the environment, although it can be expected that increasing cooperation capacity of local actors will include environmental cooperation. It will undoubtedly have impact on solving environmental problems.

Although some programming activities may have negative impact on the environment, especially in the use of renewable energy resources (wind energy onshore and offshore, geothermal energy), the general impact of the Programme on the environment will be positive, particularly as these are small-

[101] Calculated in accordance with Commission Implementing Regulation (EU) No 288/2014 of 25 February 2014. (Official Journal of the EU L 87/1 of 22.03.2014).

scale actions. All the positive environmental effects of particular groups of projects implemented under the Programme are listed in section 3.1.

Particularly positive impact will be related to the implementation of Axis 2 dedicated to the protection, promotion and development of natural and cultural heritage.

It is important to keep in mind that the Programme (given its objectives, nature and scope of financing) cannot solve all environmental problems in the region and can only be complementary to other regional, national or local programmes.

In the absence of implementation of the Programme, the activities covered by the Programme will not be performed, or will be implemented in a much smaller scale with the support of other funds.

In particular, it may have impact on the following:

- slower rate of improvement of nature conservation status in the region;
- slowdown of the Baltic Sea water quality improvement;
- limiting improvement of local air quality in terms of gas pollution in areas of intensive residential development;
- slower rate of greenhouse gas emissions reduction;
- pace of investment in green and blue infrastructure;
- public access to the infrastructure of the leisure industry;
- less progress in the protection of natural and cultural heritage.

Analysis of the effects of non-implementation of the Programme may lead to conclusion that the failure to execute investments supported in the document may induce primarily negative effects, despite the fact that some activities, as shown in the analysis, can simultaneously have a negative impact on some elements of the environment.

In conclusion, it can be said, that achieving goals described in the Programme is favourable to natural, social and economic environment, when preserving the principle of sustainable development at the same time.

7. PRESENTATION OF ALTERNATIVES

The Environmental Report, in accordance with the SEA Directive (and national law) must present alternatives to the findings of the draft document, taking into account the objectives and the geographical scope of the document, the objectives and subject of protection of for Natura 2000 sites and the integrity of the area. Alternatives to the solutions should contain reasons for their

selection, and a description of evaluation methods leading to this choice or explanation for the absence of alternative solutions, including any difficulties encountered due to technical deficiencies or gaps in modern knowledge.

Given the general nature of the Programme, no specification of projects to be implemented and lack of their location, the Report graphically presents locations of protected areas and possible locations of cumulative impacts. This creates the possibility of an approximate evaluation of the use of alternatives in order to eliminate or reduce negative impacts caused by the implementation of the proposed projects in given areas. These indications could be used in the selection of projects or their variants at the stage of Programme implementation.

Currently, the following options can be considered an alternative to the currently proposed version of the Programme:

- Lack of implementation of the Programme, analysed in Section 6. The analyses show that it is definitely detrimental to the quality of the environment and nature protection.
- Change of Programme in order to increase allocation of funds (within this document) for protection of the environment and nature, because the analysis showed that the needs in this area are justified by large natural values of the region. Moreover, the analysis revealed occurrence of important environmental problems (requiring actions) in the form of: water quality , air quality, waste management, and more.

8. PROPOSED METHODS OF EVALUATING THE EFFECTS OF THE PROGRAMME IMPLEMENTATION

During the implementation of the Programme the most important are the process control, and impact assessment of the tasks covered by the financial support within the specific areas of support. Therefore, it is necessary to develop proposals of the analysis methods that will allow to evaluate implementation process and control realisation of the objectives established under the Programme, i.a. through monitoring of the environmental effects and changes in the environment.

However, the Programme is developed on a high level of generality, and it does not specify projects that will be funded, nor their specific location. Moreover, it should be noted that it has limited impact on solving environmental problems, due to its fixed financial scope, and its role is rather to initiate follow-up and exemplary measures and to strengthen cooperation in achieving common environmental objectives. From this point of view, its effects can be difficult to quantify and exceed results of particular ongoing projects, and their results may be noticeable after a long period of time.

Another problem in assessing possible effects of its impact is the distribution of measures over a large area covered by the Programme.

Given the above, it would be difficult to justify development of a special system for monitoring environmental effects of the Programme. Therefore, it is proposed to monitor its impact on the environment at the level of individual projects in two stages:

- during the selection of projects, taking into account the proposed selection criteria and evaluating the effects indicatively, and
- after the completion of the project, when the project may affect the environment, which should be stated in the selection phase.

It would also be advisable to conduct a comprehensive evaluation of the effects of the Programme implementation - from the point of view of the environment, after completion of the Programme.

For this purpose, the assessment should be carried out by the European Environment Agency and within the framework of the Helsinki Convention, and should refer to drivers in assessing the state of the environment presented in section 4.

Assessment of the Programme's implementation should particularly include:

- greenhouse gas emission reduction,
- air pollutants emission reduction (dust PM_{10} i $PM_{2,5}$, NO_2, B(a)P),
- reduction of phosphates and nitrates flowing into the Baltic Sea,
- energy production from renewable energy sources,
- energy saving achieved as a result of activities related to the improvement of energy efficiency, including transport;
- increasing the share of surface water bodies presenting a good ecological status,
- improvement of the ecological status of the Baltic Sea,
- increase of the share of Natura 2000 sites in the territory of Poland and Lithuania,
- extension of the BSPA area in the Baltic Sea,
- increase in the number of management plans for the established Natura 2000 sites,
- development of management plans for all BSPAs.

Development of plans for the protection of Natura 2000 sites and BSPA management plans is important to reduce potential threats to biodiversity, associated with the implementation of the Programme. Expected development of green and blue tourism together with promotion of the natural heritage can cause uncontrolled increase of tourism pressure on valuable habitats and

species of the coastal zone. In order perform development of tourism (that promotes natural heritage) in a sustainable manner, it is necessary to take into account conservation plans for Natura 2000 sites, which indicate locations of the most valuable and most threatened habitats and species, including injunctions and prohibitions related to their protection.

9. PROPOSED ENVIRONMENTAL CRITERIA FOR THE EVALUATION OF PROPOSED PROJECTS

Based on environmental analyses, the environmental criteria can be determined which should be met by projects implemented under the Programme.

Meeting the criteria should ensure that the projects conducted under the Programme will be ecological, oriented to minimise burdensome impact on the environment and human health, or directly favourable to the environment.

When defining environmental criteria for projects implemented under the South Baltic Cross-Border Cooperation Programme 2014-2020, the general principles of 'green public procurement' should be applied, that have been identified in recent years at the European and national level. It is also important to maintain compliance with existing or projected strategies, European and national programmes in the area of environmental protection.

Environmental criteria proposed to be used under he Programme can be divided into the following two groups:

- General criteria;
- Specific criteria - defined for specific types of projects.

9.1. GENERAL CRITERIA

Formal and legal criteria:

- preliminary assessment (screening) of projects qualified as projects likely to have a significant impact on the environment or on the Natura 2000 sites;
- assessment of the project impact on Natura 2000 sites, if it's likely to have a significant impact on the area conservation objectives;
- full procedure of environmental impact assessment in cases where projects (investment intention) are subject to such a procedure;

- assessment of compliance with environmental quality standards in the implementation phase of the project and after its completion;
- assessment of compliance with the emission standards in the case of emissions into the environment.

Planning and strategic criteria:

- compliance with existing (at the time of project evaluation) strategies and national programmes for the environmental protection;
- compliance with existing (at the time of project evaluation) loand use plans;
- in the case of actions promoting the use of natural heritage or projects located within the Natura 2000 sites, BSPAs, or other protected areas: compliance with the existing and drafted plans for the protection of Natura 2000 sites, management plans for Baltic Sea Protected Areas (BSPA), and other plans for nature protection (if any are developed),
- in the case of projects related to the use of water, that may affect the status of water: compliance with water management plans for river basin;
- in the case of projects related to the use of water, that may affect the status of water: compliance with the conditions of water use in the water region or basin area (if such exist at the time of project assessment);
- in the case of projects located in areas at particular risk of flooding, assessment should be carried out relating to their impact on increasing flood risk, and their vulnerability to flooding.

Technical and technological criteria:

- application of best available techniques in case the project includes construction or modernisation of installation that is likely to have significant impact on the environment as a whole;
- implementation of eco-innovation;
- application of solutions that ensure savings in energy and raw materials, including water;
- implementation of low- and non-waste technologies;
- respect for the hierarchy of waste management practices and principles of waste prevention;
- long life cycle (durability) of objects and installations developed (modernised) under the project;
- the use of appropriate methods of wastewater treatment, in particular to ensure their proper state and composition before their discharge into the environment;

- in the case of projects the implementation of which leads to reduction in the retention capacity of the basin - using appropriate compensatory solutions. Derogation from this rule should be well justified. It should be remembered that the reduction in the retention capacity of the upper part of the basin pose a threat to lower-lying areas;
- in the case of projects relating to the construction works - using technology works to ensure water protection against pollution;
- promoting education projects containing elements of citizen science;
- biomass installations should be subject to special verification in terms of their impact on air quality. Selection of projects should take into account such parameters as: the amount of emissions of PM_{10} and $PM_{2,5,}$ NO_2 , and B(a)P, the location due to existing abnormal concentrations of pollutants.

Health and social criteria:

- providing full information to the public about the impact of the project on the environment - at the stage of implementation and after completion of the project;
- no (minimisation of) environmental and social conflicts related to the implementation of the project;
- minimisation of the population exposed to the impact of factors that are harmful to health (air pollution, noise) and that are generated by the project;
- the use of non-toxic building and insulation materials, obtained and produced in a sustainable manner;
- application of mitigation measures during the investment works (construction).

Natural criteria:

- minimising disruptions within ecosystems (e.g. intersections of ecological corridors);
- avoiding interference and transformation of Natura 2000 habitats that are at the higher risk of losing biodiversity in the EU: coastal habitats, wetlands and meadow areas;
- preference for projects improving state of biodiversity and green infrastructure;
- preference for projects in the coastal zone limiting the discharge of pollutants (especially nutrients) into the water;
- preservation of landscape in case of projects that may cause conflicts of nature and landscape (also taking into account the exposure of historical heritage objects);
- consideration of the need to co9nduct environmental compensation;

- consideration of the need to monitor (pre-and post-execution monitoring) projects colliding with the need to protect species and habitats.

Criteria for environmental management:

- application of a system approach to environmental management during construction and operation of facilities financed under the Programme;
- proper identification of environmental aspects associated with the construction and operation of the above mentioned objects;
- application of the principle of continuous reduction of impact on the environment and human health in objects and processes that have received financial support of the Programme;
- preference for integrated projects that take into account several objectives of the Programme.

9.2. SPECIFIC CRITERIA

The eco-energy criteria for buildings (including tourist facilities and associated cultural heritage objects):

- optimisation of energy performance of buildings;
- ensuring high standards of energy efficiency in relation to the heating, cooling, ventilation, hot water supply and electronic devices;
- implementation of agreements taking into account environmental effects of energy service companies;
- the use of renewable energy sources.

Criteria for projects relating to the development of environmentally friendly and low-carbon transport systems (Axis 3) onshore:

- maximisation of air pollutants emission reduction, including greenhouse gases;
- minimisation of impacts on protected areas and ecological corridors;
- the use of appropriate mitigation measures in the noise-sensitive areas.

Criteria for projects relating to the development of environmentally friendly and low-carbon transport systems (Axis 3) in the scope of blue economy:

- maximisation of air pollutants emission reduction, including greenhouse gases;
- minimisation of impacts on protected areas and ecological corridors;
- avoiding physical transformation of the sea coast and riverbeds;
- reduction of the risk of spills of petroleum substances;
- limitation of discharge of sanitary and ballast water pollutants.

Criteria for RES installations:

- minimisation of environmental impacts;
- minimisation of air pollutants emissions, including greenhouse gases
- economic efficiency.

Criteria for educational projects:

- consideration of environmental issues in all educational programmes.

Criteria in the scope of supporting green and blue economy:

- application of the principles of environmental management;
- maximisation of environmental effects.

10. CONCLUSIONS AND RECOMMENDATIONS

The following general conclusions can be drawn on the basis of analyses performed in the course of works on the Environmental Report on the South Baltic Cross-Border Cooperation Programme 2014-2020:

- It is estimated, that the Programme as a whole has a positive impact on the environment and will help to solve some problems related to improvement of the environment, however, some areas of support can have also a negative impact on particular elements of the environment. Specific conclusions in this regard are presented in relevant chapters of the Report.
- General formulation of the Programme and lack no list of specific projects that will be funded under the Programme, do not allow a more detailed assessment of the possible environmental impacts. Therefore, the Report has been developed at a similar level of generality as the Programme.
- Due to the limited funds of the Programme and its main goal to *improve an economic, social and territorial cohesion of the area and – at the same time – to contribute to the European Union's 2020 Strategy for smart, sustainable and inclusive growth,* no significant impact shall be expected on solving all environmental issues in the Programme eligible area. Actions in this area should be seen as complementary to other projects. Nevertheless, it seems that the Programme should stronger emphasise those measures from the scope of environmental protection which from the point of view of its status and problems would be most desirable in the region. This applies, in particular, to measures improving water quality of the Baltic Sea.
- The analysis of internal consistency showed overall internal compliance of the Programme. A large part of the investment priorities of individual axes is complementary and/or enhances

one another, however, it would be advisable to coordinate the exemplary measures listed for each priority in section 2.A.6.1 with the categories of intervention from section 2.A.8 which includes allocation of resources to particular fields of intervention.

- Based on the analysis of the objectives of the EU strategic documents, it can be stated that the Programme achieves these goals.
- Similarly, analysis of the objectives of the strategic papers of Denmark, Lithuania, Germany, Poland and Sweden showed that the Programme generally achieves their goals.
- In order to reduce negative impact that the Programme may have on the environment, the following were proposed: rules for monitoring effects of the Programme implementation (Chapter 8), a set of recommendations for potential negative impact reduction or possible alternatives (for in-depth analyses of individual measures) as well as project selection criteria (Chapter 9). Given the generality of the Programme and the overwhelming number of so-called 'soft' actions, recommending compensatory measures at this stage was not considered reasonable.
- The analysis of the potential transboundary environmental impact of the Programme found no such effects. However, it should be taken into account that the Programme has a general nature and thus it is not possible to make final evaluation of the potential cross-border impacts at the stage of Programme's strategic impact assessment. However, it may turn out that, at the stage of the environmental impact assessment carried out for a specific project, such impacts will occur.

The table below presents summary of the specific conclusions and recommendations. They arise from the various studies described in more detail in the individual sections of the Report.

Table 17 Specific conclusions and recommendations.

No.	Conclusions	Justification	Recommendations
1	Projects implemented under the Programme should be selected with consideration of their impact on protected areas.	According to the environmental policies of countries participating in the Programme, and the EU legislation, the potential negative	Further programming documents should take into account minimisation of the potential negative impacts on the achievement of conservation objectives for individual protected areas.

		impact on the achievement of the conservation objectives for all protected areas should be limited to the maximum extent.	
2	It is recommended to include in the Programme (in sections not related to environmental protection) also elements that have impact on raising environmental awareness (directly and indirectly) of the society.	Still, a low level of environmental awareness is reported.	Further programming documents recommend to include (within the scope of the axes 1, 4 and 5) impact on raising the level of environmental awareness of public administration, business and society.
3	When assessing the impact of the proposed projects, also proposed protected areas should be taken into account, including NATURA 2000 sites.	There is a high probability that the proposed protected areas will be considered protected (in legal terms), and therefore consideration of this fact at the stage of project selection can prevent them from a	Further programming documents recommend to take into account impact also on the proposed protected areas.

		significant impact	
4	When preparing specific projects, it is recommended to take into account best practices of all countries in the scope of protecting natural and cultural heritage.	The Programme creates great opportunities for cooperation and use of the most effective practices in the protection of natural and cultural heritage.	Further programming documents recommend to indicate the purpose of the use of existing evaluations in this scope, e.g. the Code of good Practice for the management of the Underwater Cultural Heritage in the Baltic Sea Region (COPUCH) http://www.nba.fi/fi/File/701/copuch-ohjeistus.pdf or Transboundary Management of Transitional Waters, the Code of Conduct and examples of good practices http://www.balticlagoons.net/artwei/wp-content/uploads/2010/04/Polish-Code-of-Conduct_ARTWEI.pdf
5	Categories of intervention listed in the Programme point to the allocation of a part of the funds for protecting and enhancing biodiversity, nature conservation and green infrastructure, which will contribute to the implementation of the EU Biodiversity Strategy to 2020.	It is recommended for the exemplary measures to include those activities which are to be funded under the Programme.	It is proposed to add appropriate wording in the text of the Programme.
6	Further programming documents recommend to	Such projects represent greater environmental,	Further programming documents recommend to consider this criterion in projects selection.

	promote integrated projects.	economic and social efficiency.	
7	Great attention should be paid to projects related to cooperation in the field of nature conservation, and their impact on the environment.	Practice shows that sometimes, even in the case of projects with an overall positive impact on the environment, they can also become a source of adverse changes in nature, e.g. during the restitution of species alien species should not be introduced.	It is important to pay attention to justification of projects, and relevant assessment of environmental impacts.

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TABLES

FIGURES

APPENDIXES

Appendix 1 Methodological Report

Appendix 2 Analysis of the Programme's compliance with strategic documents of the EU

Appendix 3 Analysis of the Programme's compliance with strategic documents of countries covered by the Programme

Appendix 4 In-depth analyses