STRATEGIC ENVIRONMENTAL ASSESSMENT REPORT
ON THE DRAFT POLAND-RUSSIA CROSS-BORDER
COORDINATION PROGRAMME 2014-2020

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ATMOTERM® S.A.

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LIST OF TERMS AND ABBREVIATIONS USED IN THE REPORT

B(a)P – Benzo(a)pyrene
BSPA - Baltic Sea Protected Areas
CO₂ - carbon dioxide
CAFÉ Directive - Directive 2008/50/EC on ambient air quality and cleaner air for Europe
EEA - European Environment Agency
GDOŚ - General Directorate for Environmental Protection (GDEP) (Poland)
GIOŚ - Chief Inspectorate for Environmental Protection (Poland)
GUS - Central Statistical Office (Poland)
jcw – Surface water bodies
jcwpd – Groundwater bodies
MGB - major groundwater basin
NOₓ - nitrogen oxides
NUTS - Nomenclature of Territorial Units for Statistics
RES - renewable energy sources
PI - Priority Investment of the Programme
PLB - Special Protection Areas (Birds)
PLH – Special areas of conservation (Habitat)
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 Poland – Russia 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).
1. INTRODUCTION

The aim of the Environmental Report on the draft Poland-Russia 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 Poland-Russia Cross-border Cooperation Programme 2014-2020 (hereinafter referred to as the Programme) has been drafted jointly by the Polish and Russian cooperation parties, in accordance with the relevant laws and regulations of both parties and the European Union, and will be jointly financed using EU funds.

The programme will cover the following areas with a total surface of 68,935 km² (including 53,852 km² on the Polish side, and 15,100 km² on the Russian side):

In Poland the following subregions (NUTS III):
- Gdańsk, Trójmiejski, Starogardzki subregion (Pomorskie region);
- Elbląski, Olsztyński, Elcki subregion (Warmińsko-Mazurskie region);
- Suwalski subregion (Podlaskie region).

In the Russian Federation:
- Kaliningrad Oblast.

The Programme area includes also major social, economic and cultural centres. and the following subregions (NUTS III) in Poland, as adjoining regions: Słupski subregion (Pomorskie region) and Białostocki subregion (Podlaskie region).

The main objective of the Programme is to support cross-border cooperation in the social, environmental, economic and institutional sphere.

The Programme provides support of activities in the following priorities:

**Priority 1.** Cooperating on historical, natural and cultural heritage for their preservation and cross-border development;

**Priority 2.** Cooperation for the clean natural environment in the cross-border area;

**Priority 3.** Accessible regions and sustainable cross-border transport and communication;

**Priority 4.** Joint actions for border efficiency and security.

Additionally, the Programme includes a list of large infrastructure projects.

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3 In order to facilitate reference to the Report, its summary is presented in the structure of the particular chapters.
The Report has been prepared in line with the agreed methodology. 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**

The Environmental 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 assessment⁴, 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 environment⁵. Then, under arrangements with the competent authorities, the Scoping Report developed on the basis of the above mentioned legislation was complemented by other essential elements resulting from legal provisions of the Russian Federation.

While developing the Report, impact on all elements of the environment was analysed in compliance with legal provisions and arrangements.


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 relating 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 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. The current state of the environment was also identified. On the one hand, it should serve such a

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⁴ Journal of Laws no. 199, item 1227, as amended.
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.

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 relating to renewable energy sources and realisation of infrastructure investments (in the scope of roads, water and waste management) but it does not means that such
impact will occur. It could be identified only on the basis of concrete project analyses. 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 energy 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 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 relating 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 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.
**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 difficult due to a general wording of most areas of support, and lack of indication of location of the majority of 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.

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.

**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 relating 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. Results of these analyses are included in the assessment of the Programme.


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 in the Programme. It was estimated that about EUR 37.8 million have been allocated to environmental protection. This represents about 47,1% of all funds allocated to the Programme (with 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 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 specified 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.

As an alternative a change of Programme is proposed to be considered 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 in most cases 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, using monitoring systems that exists in both countries.

9. Proposed environmental criteria for the evaluation of projects proposed to implementation

Based on environmental analyses, the environmental criteria have been 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.

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 Poland -Russia 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 associated with the improvement of the environment, however, some areas of support can also have a negative impact on particular elements of the environment. Specific conclusions in this regard are presented in relevant sections of the Report.
- General formulation of the Programme and no list of all 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 objective (which is to support cross-border cooperation in the social, environmental, economic and institutional sphere), 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.

- The analysis of internal consistency showed overall internal compliance of the Programme. A large group of priorities is complementary and/or enhances one another.
- 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 Russia and Poland 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 (Section 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 (Section 9). Given the generality of the Programme and the overwhelming number of so-called ‘soft’ measures, recommending compensatory measures at this stage was not considered reasonable.
- The analysis of the potential cross-border 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 impact at the stage of Programme’s strategic impact assessment. However, it may turn out that such impacts will occur at the stage of the environmental impact assessment carried out for a specific project.
1. INTRODUCTION

1.1 THE PURPOSE OF THE REPORT

The aim of the Environmental Report on the draft Poland-Russia 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 Poland-Russia Cross-border Cooperation Programme 2014-2020 (hereinafter referred to as the Programme) has been drafted jointly by the Polish and Russian cooperation parties, in accordance with the relevant laws and regulations of both parties and the European Union, and will be jointly financed using EU funds.

The programme will cover the following areas with a total surface of 68,935 km² (including 53,835 km² on the Polish side, and 15,100 km² on the Russian side):

In Poland the following subregions (NUTS III):
• Gdańsk, Trójmiejski, Starogardzki subregion (Pomorskie region);
• Elbląski, Olsztyński, Elcki subregion (Warmińsko-Mazurskie region);
• Suwalski subregion (Podlaskie region).

In the Russian Federation:
• Kaliningrad Oblast.

The Programme area includes also major social, economic and cultural centres and the following subregions (NUTS III) in Poland, as adjoining regions:
• Słupski subregion (Pomorskie region);
• Białostocki subregion (Podlaskie region).

The territorial range of the Programme is presented on the below map.
The main objective of the Programme is to support cross-border cooperation in the social, environmental, economic and institutional sphere.

The Programme provides support of activities in the following priorities:

**Priority 1.** Cooperating on historical, natural and cultural heritage for their preservation and cross-border development;

**Priority 2.** Cooperation for the clean natural environment in the cross-border area;

**Priority 3.** Accessible regions and sustainable cross-border transport and communication;

**Priority 4.** Joint actions for border efficiency and security.

The Programme will implement thematic objectives and investment priorities set out in relevant EU regulations on the European Neighbourhood and Partnership Instrument (ENPI Regulation\(^7\)), European Regional Development Fund\(^8\). Image of Poland and the Russian Federation.

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\(^6\) Source: draft Poland – Russia Cross-border Cooperation Programme 2014-2020


\(^8\) a) 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.
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 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 relating 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 done 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. 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 is presented in Annex 1 to the Report.

2. Legal Basis and Agreements Relating to the Scope of the Report

The Environmental 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\textsuperscript{9}, 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.\textsuperscript{10}. Then, under arrangements with the competent authorities, the Scoping Report developed on the basis of the above mentioned legislation was complemented by other essential elements resulting from legal provisions of the Russian Federation.

In accordance with the aforementioned law and the EU legislation, 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 relating 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:

- 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\textsuperscript{11},
- 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,

\textsuperscript{9} Journal of Laws no. 199, item 1227, as amended.
\textsuperscript{11} Journal of Laws of 2013, item 627, as amended.
— 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\textsuperscript{12}, material goods, considering the interrelationship between the above-mentioned elements of environment, and interactions between these elements.

The Report also presents:

- 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.

In addition, agreements were made on the scope and the level of detail of the Report in relation to the Russian Federation at the expert level, cause according to the legislation, there is no obligation to agree it with the competent authorities. Comments received from the competent authorities on the agreed scope of the Report are presented in the table below.

\textsuperscript{12} The term also includes archaeological heritage objects
Table 1 Indications and comments of the competent authorities of the countries participating in the Programme.

<table>
<thead>
<tr>
<th>Name of the Institution</th>
<th>No.</th>
<th>The content of the comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL DIRECTOR FOR ENVIRONMENTAL PROTECTION (10.04.2015)</td>
<td>1.1</td>
<td>In order to meet obligations of the Polish law, 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.</td>
</tr>
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<td></td>
<td>1.2</td>
<td>Information contained in the Report should be developed according to the current state of knowledge and methods of assessment, and tailored to the content and level of detail of the proposed document, as well as to the phase of its approval in the process of developing documents relating to the mentioned one.</td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>The Environmental Report should take into account information contained in other environmental reports that have already been adopted and are relevant to the draft document which is the subject matter of the proceedings.</td>
</tr>
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<td></td>
<td>1.4</td>
<td>It should be emphasised 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.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>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. This should include possible impacts on marine sites.</td>
</tr>
<tr>
<td></td>
<td>1.6</td>
<td>The presentation of the spatial phenomena and interactions between them should be made in a graphic (maps) form.</td>
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<td></td>
<td>1.7</td>
<td>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.</td>
</tr>
<tr>
<td>CHIEF SANITARY INSPECTOR (07.04.2015)</td>
<td>2.1</td>
<td>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.</td>
</tr>
</tbody>
</table>

POLAND
Development of the Environmental Report will use guidelines on strategic environmental assessments and guidance on integrating climate change and biodiversity into strategic environmental assessment.

The work on the Report, to ensure consistency, uses existing projections that covered similar activities in the region covered by the Programme, in particular, the Environmental report on the South Baltic Cross-border Cooperation Programme 2014-2020 that was prepared in 2014 and includes a summary of all the other environmental reports made so far, and the Environmental Report prepared for the Lithuania - Poland - Russia Cross-border Cooperation Programme 2007-2013.

The Report will cover the analysis of EU strategic documents in terms of the Programme’s compliance with these documents, particularly in the scope of implementation of environmental goals, and will cover the analysis of most important strategic documents of countries that are participating in the Programme. List of the analysed documents will be presented in Section 3 of the Report.

3. ANALYSIS OF THE PROGRAMME

3.1 THE VISION, OBJECTIVES AND MEASURES PROPOSED IN THE PROGRAMME

The main objective of the Programme is to support cross-border cooperation in the social, environmental, economic and institutional sphere.

The Programme provides support of activities in the following priorities:

**Priority 1.** Cooperating on historical, natural and cultural heritage for their preservation and cross-border development;

**Priority 2.** Cooperation for the clean natural environment in the cross-border area;

**Priority 3.** Accessible regions and sustainable cross-border transport and communication;

**Priority 4.** Joint actions for border efficiency and security.

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

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in the form of a table that determines 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 Poland–Russia 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 which may have a negative impact on the environment, but this impact probably will not be significant.
- **orange colour** shows areas of support likely to have significant effects on the environment. 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. 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.

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16 Listed in Annex I of the above mentioned Directive.
Table 2 Description of the Programme and the potential fields of intervention in the environment.

<table>
<thead>
<tr>
<th>Code (priority/measure)</th>
<th>The field of intervention, measures, and typical projects</th>
<th>Short name of the measure</th>
<th>Possible territorial coverage of impacts</th>
<th>Potential impacts on the environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority 1. Cooperating on historical, natural and cultural heritage for their preservation and cross-border development;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Joint initiatives and events to promote preservation of local culture, history and nature, Joint projects of support, promotion and protection of traditional crafts.</td>
<td>Promotion of the cultural and natural heritage protection</td>
<td>The entire Programme eligible area</td>
<td>Positive impact on all elements of the environment</td>
</tr>
<tr>
<td>1.2</td>
<td>Joint projects on preparation and implementation of investments in tourism infrastructure and services relating to the use of cultural and natural heritage (i.a. bike paths, waterways, nature study and educational pathways etc.) taking into account persons with disabilities. Protection, preservation and adaptation of cultural, historical and natural heritage objects For social, cultural, educational and other purposes</td>
<td>Project preparation and implementation of infrastructure relating to cultural and environmental heritage</td>
<td>Depending on an individual project</td>
<td>Possible negative impacts depending on project types</td>
</tr>
<tr>
<td>1.3</td>
<td>Joint trainings, staff exchange in order to strengthen cultural and natural heritage management. Creation of a system of cultural information, Protection of natural heritage of common ecological value (e.g. nature reserves, national parks, etc.). Development of analyses, research studies, strategies and programmes for heritage protection</td>
<td>Cooperation in the field of cultural and natural heritage management</td>
<td>The entire Programme eligible area</td>
<td>Positive impact on all elements of the environment</td>
</tr>
<tr>
<td>1.4</td>
<td>Protection, restoration and reconstruction of cultural and historical heritage objects, monuments and their surroundings.</td>
<td>Protection, restoration and reconstruction of cultural, historical and natural heritage objects.</td>
<td>The entire Programme eligible area</td>
<td>Possible negative impacts depending on project types</td>
</tr>
</tbody>
</table>
## Priority 2. Cooperation for the clean natural environment in the cross-border area

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Projects on the protection and use of natural values</th>
<th>Depending on an individual project</th>
<th>Positive impact depending on project type</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Joint projects on the protection and a sustainable use of such natural values as parks, water supply systems etc.</td>
<td>Projects on the protection and use of natural values</td>
<td>Depending on an individual project</td>
<td>Positive impact depending on project type</td>
</tr>
<tr>
<td>2.2</td>
<td>Cross-border projects for the protection of valuable ecosystems and endangered species</td>
<td>Protection of valuable ecosystems and endangered species</td>
<td>Areas of the border region</td>
<td>Positive impact depending on project type</td>
</tr>
<tr>
<td>2.3</td>
<td>Development of water management infrastructure, waste management, air protection, etc. (e.g. water supply systems, sewage treatment plants, waste collection and recycling systems.)</td>
<td>Projects relating to the following: a) water and wastewater management b) waste management</td>
<td>Depending on an individual project</td>
<td>Positive impact depending on project type. However, significant negative impacts are also possible</td>
</tr>
<tr>
<td>2.4</td>
<td>Joint water management facilities (relating to climate change (floods, droughts, water deficits))</td>
<td>Water management facilities relating to climate change</td>
<td>Depending on an individual project</td>
<td>Possible negative impacts depending on the project</td>
</tr>
<tr>
<td>2.5</td>
<td>Joint monitoring of the environment (water, air)</td>
<td>Environmental monitoring</td>
<td>The entire Programme eligible area</td>
<td>Positive impact on environmental quality management</td>
</tr>
<tr>
<td>2.6</td>
<td>Joint trainings, meetings, exchange of good practices. Joint development of strategies, raising the level of knowledge, cooperation between local and regional authorities in the field of environmental management Development of spatial plans, common strategies, crisis management systems, warning systems on climate change and adaptation to climate change</td>
<td>Cooperation at local and regional level in the field of environmental protection and climate change</td>
<td>The entire Programme eligible area</td>
<td>Positive impact on environmental quality management</td>
</tr>
<tr>
<td>2.7</td>
<td>Joint efforts for the protection of the coastal zone, including the effective management of the Baltic Sea environment. Joint actions on climate change mitigation and adaptation in agriculture, fisheries and forestry Supporting actions addressing health threats. Revitalisation of polluted and degraded areas.</td>
<td>Joint actions in the field of environmental protection and climate change</td>
<td>Depending on an individual project</td>
<td>Positive impact depending on project type</td>
</tr>
<tr>
<td>2.8</td>
<td>Joint projects supporting energy saving, and the use of renewable (solar, hydro, wind, biomass) energy sources (RES)</td>
<td>Projects relating to the use of: a) wind power b) biomass, c) thermal power, d) hydropower</td>
<td>Depending on an individual project</td>
<td>Possible potentially significant impacts depending on the project. However, positive impacts are also possible</td>
</tr>
</tbody>
</table>

**Priority 3. Accessible regions and sustainable cross-border transport and communication**

| 3.1 | Joint projects relating to quality and the availability of social and economic infrastructure | Projects relating to the availability of social and economic infrastructure | Depending on an individual project | No impact. |
| 3.2 | Joint development of a multimedia system | Development of a multimedia system | Depending on an individual project | Possible negative impacts depending on project types |
| 3.3 | Joint development and improvement of quality and safety of transport connections. | Development and improvement of quality and safety of transport connections | Depending on an individual project | No impact. |
| 3.4 | Joint studies, project development, and environmental impact assessment for transport systems and wide area networks, and their implementation | Joint studies, project development, and environmental impact assessment for transport systems | Depending on an individual project | Positive impact |
| 3.5 | Joint promotion of sustainable transport of passengers and goods Development and improvement of transportation systems in order to change them into more environmentally friendly (taking noise into account as well) and less emissive | The promotion of sustainable transport of passengers and goods | Depending on an individual project | Positive impact |
### Joint projects to improve mobility

- Projects to improve mobility
- Depending on an individual project
- Possible no impact, however, specific projects are not known

### Joint initiatives in the field of development and improvement of the ICT infrastructure quality

- Development and improvement of ICT infrastructure
- Depending on an individual project
- No impact.

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### Priority 4. Joint actions for border efficiency and security

<table>
<thead>
<tr>
<th>4.1</th>
<th>Joint initiatives on improvement of the infrastructure of border crossings.</th>
<th>Improvement of the infrastructure of border crossings</th>
<th>Depending on an individual project</th>
<th>Possible negative impacts depending on project types</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2</td>
<td>Joint initiatives on adaptation and extension of the existing border crossings in terms of pedestrian and bicycle traffic</td>
<td>Adaptation and extension of the existing border crossings in terms of pedestrian and bicycle traffic</td>
<td>In terms of border crossings</td>
<td>No impact</td>
</tr>
<tr>
<td>4.3</td>
<td>Joint creation of a coherent system of signs and signals at border crossings</td>
<td>Creation of a coherent system of signs and signals at border crossings</td>
<td>In terms of border crossings</td>
<td>No impact.</td>
</tr>
<tr>
<td>4.4</td>
<td>Joint projects in the field of equipping border crossings for a better flow of border traffic</td>
<td>Joint projects in the field of equipping border crossings</td>
<td>In terms of border crossings</td>
<td>No impact.</td>
</tr>
<tr>
<td>4.5</td>
<td>Joint development and modernisation of infrastructure supporting border crossings.</td>
<td>Development and modernisation of infrastructure supporting border crossings</td>
<td>In terms of border crossings</td>
<td>No impact.</td>
</tr>
</tbody>
</table>
### 4.6 Joint initiatives on facilitation of border crossing procedures and training border and customs services.

| Border service cooperation | In terms of border crossings | No impact. |

### 4.7 Joint initiatives to support border management in the fight against illegal migration, human trafficking and organised crime.

| Support of management in the fight against illegal migration, human trafficking and organised crime. | Border areas | No impact. |

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### 5. Large infrastructure projects (LIPs)

<table>
<thead>
<tr>
<th>5.1 Promotion of the &quot;Amber is a gemstone of the Baltic Sea&quot; movement in the tourism industry, as a unique and important development direction of the tourism industry in border regions of the Kaliningrad and Poland (Budget approx. EUR 5.1 million)</th>
<th>Promotion of the &quot;Amber is a gemstone of the Baltic Sea&quot; movement</th>
<th>Border areas</th>
<th>No impact.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2 Cross-border cycling paths for promotion and sustainable use of cultural heritage (Budget approx. EUR 4.5 million)</td>
<td>Cross-border cycling paths</td>
<td>Depending on an individual project</td>
<td>Possible impacts depending on project</td>
</tr>
<tr>
<td>5.3 Development of tourist and recreational potential in the area of Svetly and Malbork (Budget approx. EUR 5.1 million)</td>
<td>Development of tourist and recreational potential in the area of Svetly and Malbork</td>
<td>Areas around Svetly and Malbork</td>
<td>Possible impacts depending on project</td>
</tr>
<tr>
<td>5.4 Partnership for water conservation in the cross-border area (Budget of EUR 7.6 million)</td>
<td>Construction of a sewage system in the town of Gusev</td>
<td>The Pissa river</td>
<td>Possible potentially significant impacts depending on the project</td>
</tr>
<tr>
<td>5.5 Improvement of water condition of the Baltic Sea basin including Vistula/Kaliningrad Lagoon and Curonian Lagoon (Budget EUR 8.3 million)</td>
<td>Construction of a sewage treatment plant or a sewage system in the town of Tolkmicko</td>
<td>The Vistula River and the Gulf of Kaliningrad</td>
<td>Possible potentially significant impacts depending on the project</td>
</tr>
<tr>
<td>5.6</td>
<td>Improvement of water quality and reduction of losses in the Central Żuławy Water Supply System (Budget EUR 6.5 million)</td>
<td>Improvement of water quality and reduction of losses in the Central Żuławy Water Supply System</td>
<td>Żuławy region</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5.7</td>
<td>Reconstruction of provincial road 512 (Budget approx. EUR 8.0 million)</td>
<td>Reconstruction of provincial road 512</td>
<td>Areas along the road</td>
</tr>
<tr>
<td>5.8</td>
<td>Reconstruction of national road 65, section Kowale Oleckie - Olecko - 21 km (Budget approx. EUR 10.0 million)</td>
<td>Reconstruction of national road 65, section Kowale Oleckie - Olecko</td>
<td>Areas along the road</td>
</tr>
<tr>
<td>5.9</td>
<td>Bypass of Filipów, reconstruction of provincial road 652 (Budget approx. EUR 7.0 million)</td>
<td>Bypass of Filipów, reconstruction of provincial road 652</td>
<td>Areas along the road</td>
</tr>
<tr>
<td>5.10</td>
<td>Reconstruction of Buczka street from the border of the city of Suwałki to Leśna street as part of the provincial road 655, and reconstruction of Pobedy Lane to the industrial park of Cherniakhovsk (Budget approx. EUR 5.7 million)</td>
<td>Reconstruction of Buczka street from the border of the city of Suwałki to Leśna street as part of the provincial road 655, and reconstruction of Pobedy Lane to the industrial park of Cherniakhovsk</td>
<td>Suwałki region</td>
</tr>
<tr>
<td>5.11</td>
<td>BALTCON Improvement of road connections at the mouth of the Vistula river (Budget approx. EUR 8.0 million) (Project not agreed – still in discussion phase)</td>
<td>BALTCON Improvement of road connections at the mouth of the Vistula river</td>
<td>Region of the mouth of the Vistula</td>
</tr>
<tr>
<td>5.12</td>
<td>Reconstruction of the Bagrationovsk road border crossing (Budget approx. EUR 5.0 million)</td>
<td>Reconstruction of the Bagrationovsk road border crossing</td>
<td>Area of the border crossing</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>5.13</td>
<td>Reconstruction of the Mamonovo (Grzechotki) road border crossing (Budget approx. EUR 5.0 million)</td>
<td>Reconstruction of the Mamonovo (Grzechotki) road border crossing</td>
<td>Area of the border crossing</td>
</tr>
<tr>
<td>5.14</td>
<td>Reconstruction of the Mamonovo (Gronowo) road border crossing (Budget approx. EUR 3.0 million)</td>
<td>Reconstruction of the Mamonovo (Gronowo) road border crossing</td>
<td>Area of the border crossing</td>
</tr>
</tbody>
</table>
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 most of the Programme activities will have a positive impact on the environment (direct or indirect), or will be neutral with respect to the environment.

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* 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**\(^{18}\). 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**\(^{19}\). 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 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**\(^{20}\). 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

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\(^{18}\) [United Nations Framework Convention on Climate Change](http://isap.sejm.gov.pl/DetailsServlet?id=WDU19960530238)

\(^{19}\) [The Convention on Biological Diversity](http://isap.sejm.gov.pl/DetailsServlet?id=WDU20021841532)

\(^{20}\) [Convention on Wetlands of International Importance especially as Waterfowl Habitat](http://www.gdos.gov.pl/files/Konwencje/Konwencja-Ramsarska.pdf)
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. 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.

Convention on Long-range Transboundary Air Pollution (LRTAP). 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 regarding:

- Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-
range Transmission of Air Pollutants in Europe (EMEP),

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• Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 percent,
• Control of Nitrogen Oxides or their Transboundary Fluxes,
• Further Reduction of Sulphur Emissions,
• Heavy Metals,
• 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* 23 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:

• 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 24 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;

24 [http://www.bsap.pl](http://www.bsap.pl)
• 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.

![Diagram of EU strategy 2020 and flagship initiatives]

Figure 2 Relation of the Europe 2020 Strategy to other documents

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.
3. The EU strategy for adaptation to climate change.


6. Our life insurance, our natural capital - an EU biodiversity strategy to 2020.


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.
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.

26 Source: own work.
Summary
The following conclusions can be drawn from the analysis of the basic EU documents relating 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.

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 Poland -Russia 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:

Poland:

- Long-term National Development Strategy, Poland 2030, Third Wave of Modernity
- National Spatial Development Concept 2030 (NSDC),
- Medium-term National Development Strategy (MNDS) - National Development Strategy 2020,
- Strategy ‘Energy security and the environment’,
- Maritime Policy of the Republic of Poland until 2020,
- Energy Policy of Poland until 2030,
- The National Water and Environmental Programme, the draft National Water Policy, the National Programme for Municipal Wastewater Treatment,
- The National Waste Management Plan 2014,
- National Strategic Plan for Climate Change Adaptation for sensitive sectors and areas by 2020 and outlook 2030 (SPA 2020),
- Assumptions of the National Program for the Development of a Low Emission Economy,
• Spatial Development Plan of the Podlaskie Voivodeship,
• Spatial Development Plan of the Pomorskie Voivodeship,
• Spatial Development Plan of the Warmińsko-Mazurskie Voivodeship.

**Russian Federation:**

• Principles of State policy in the area of environmental development of the Russian Federation for the period up to the year 2030
• The Strategy of the Social and Economic development of the North-West Region of the Russian Federation
• Strategy for the social and economic development of the Russian Federation till 2020
• Concept for the Foreign policy of the Russian Federation adopted by the President of the Russian Federation on the 12 February 2013
• Draft strategy on Environmental safety till 2025
• State program of the Kaliningrad region «Environment» for 2014-2020
• Federal Target Program of the Kaliningrad region development
• Regional Programme in the field of energy saving and energy efficiency of the Kaliningrad region in 2010-2015 with the outlook for 2020,
• Regional target program on production and consumption - waste management in Kaliningrad region
• Maritime Doctrine of the Russian Federation,
• Climate Doctrine of the Russian Federation and Plan for Climate doctrine implementation till 2020

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.
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.

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) had formulated the following key areas:

- protecting the natural capital that supports economic prosperity and human well-being;
- stimulating resource-efficient, low-carbon economic and social development;
- safeguarding people from environmental health risks.

Deteriorative trend is predicted (for the next 20+ years) in terrestrial and freshwater biodiversity, as well as in land use and soil functions, and in climate change impacts on ecosystems. The good (in recent 5-10 years) trend in water quality and nutrient loading has deteriorated. Similar situation has been observed in air pollution and its ecosystem impacts. Currently, trends in these areas show mixed picture - partially on track to achieving key policy targets in the scope of environmental protection.

Activities implemented in the scope of resource efficiency and the low-carbon economy have negative impact on forecasting trends in greenhouse gas emissions and climate change mitigation, energy consumption and fossil fuel use, as well as in forecasting trends in transport demand and related environmental impacts. It is worth mentioning here, that in recent 5-10 years the above mentioned areas, except for transport, were characterised by improving trends. In the sector of waste management and industrial pollution to air, soil and water a deterioration was observed of the improving trends, and the sector trends show mixed picture with a chance of achieving the key targets.

The bad state of the environment also affects human health. The deteriorating trend in this area is still associated with climate change and its effects on human health. Other environmental threats to health include trends that show mixed picture. Even trend in the sector of water pollution and

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related environmental health risks (positively assessed in recent years) now has a more pessimistic forecast.

None of the partial trend assessments for the next 20+ years has been assessed positively (as improving).

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, as well as from countries participating in the Programme. 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 analysed 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 2015 SOER report.

4.1. PRESSURE 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 Baltic Sea is now considered the largest hypoxic marine area in the world (influenced by hypoxia). The strongest anthropopressure relates inter alia to the area covered by the Poland - Russia Cross-border Cooperation Programme 2014-2020, which is shown in the figure below.

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28 SOER 2015 (after Carstensen and others, 2014)
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;

Source: Own work based on data from HELCOM 2010, Ecosystem Health of the Baltic Sea. HELCOM Initial Holisitc Assessment, BSEP No. 122
The increasing investment activities in the scope of exploitation and transmission of oil and gas. Within the Programme eligible area there are 2 port terminals for transshipment of crude oil with

30 Source: HELCOM (2014), Annual report on shipping accidents in the Baltic Sea in 2013
a turnover of more than 3 million tonnes per year (Gdańsk, Kaliningrad), and drilling and production platforms for crude oil, respectively, in Polish and Russian exclusive economic zone.

- The increase in maritime traffic has impact on the growing (in recent years) number of registered accidents. In 2013, the highest (within the past decade) number of ship accidents was reported (150 events), as shown on the figure below.

Figure 6 Spatial distribution of shipping accidents in the Baltic Sea in 2013

Source: HELCOM (2014), Annual report on shipping accidents in the Baltic Sea in 2013
- fishing and overfishing 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);
- tourist use and alteration of the coastal zone, including pressure on naturally precious areas;
- development of wind energy in marine areas;
- littering the waters of the basin;
- risks associated with chemical munition 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\textsuperscript{32}):

- 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.

\textbf{4.2. NATURE AND BIODIVERSITY}

\textit{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, 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. Unfortunately, the forecast for the next twenty years are also negative because the factors causing the biodiversity loss do not show positive trends\textsuperscript{33}.

\textsuperscript{32} Parteka [ed.], 2010
\textsuperscript{33} SOER 2015
Despite 40 years of efforts to protect the environment of the Baltic Sea, the ecological status of the Baltic Sea has steadily deteriorated. According to a HELCOM study of 2010, attempting to assess the overall state of the environment of the Baltic Sea\(^\text{34}\), 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 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.

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\(^\text{2}\), 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 protected areas, including 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 ie: UNESCO biosphere reserves\(^\text{35}\), Ramsar wetlands\(^\text{36}\) and HELCOM Baltic Sea Protected Areas (BSPA)\(^\text{37}\) and forms of nature protection established at the national level (e.g. national and landscape parks).

\(^{34}\) HELCOM 2010, Ecosystem Health of the Baltic Sea 2003-2007. HELCOM Initial Holistic Assessment. BSEP No. 122
\(^{35}\) International Programme on Man and Biosphere - MAB ('Man and Biosphere'), launched by UNESCO in 1971.
\(^{36}\) The Ramsar Convention, or the Convention on Wetlands of International Importance especially as Waterfowl Habitat.
\(^{37}\) BSPA - Baltic Sea Protected Areas established under the Helsinki Convention.
At the moment 75 specially protected areas, with a total area of about 650 km² are located in the Kaliningrad region. The protected areas in the Kaliningrad region constitute 5% of the total area. On the Polish part of the Programme area the total protected areas cover about 30,800,000 km² and constitute about 57% of the Polish part of Programme. The most important protected areas are presented on the map below.

Figure 7 Domestic and international protected areas in the Programme area

**Natura 2000 sites**

Within the Programme (Poland - Russia Cross-border Cooperation Programme 2014-2020) 193 eligible areas Natura 2000 sites were established with a total surface area of about 19,500,000 km². 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

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degradation means enormous social and economic losses for the EU\textsuperscript{39}. Ensuring effective protection of the Natura 2000 sites is achieved through management plan. In Poland works are carried out on elaboration of environmental documentation and drafting of plans of protective tasks.

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\textsuperscript{40} 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 (EU) for the conservation of biodiversity for the period to 2020.

\textit{Baltic Sea Protected Areas}

As part of efforts to protect the biodiversity of the Baltic countries, HELCOM has established a coherent network of Baltic Sea Protected Areas\textsuperscript{41}.

By 2013, 163 BSPA areas were established, covering 11.7\% of the Baltic Sea surface area, i.e. about 54 thousand km\textsuperscript{2} (including about 5 thousand km\textsuperscript{2} of land). Management plans are under development for the established Baltic Sea Protected Areas. In 2013, HELCOM evaluated the status of the network of Baltic Sea marine protected areas (BSPA)\textsuperscript{42}. The report shows that the 10\% target for areal coverage of the Baltic Sea-wide network 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 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

\begin{itemize}
\item \textsuperscript{39} The EU biodiversity strategy to 2020
\item \textsuperscript{40} COM (2009) 358 final
\item \textsuperscript{41} Baltic Sea Protected Areas (BSPA)
\item \textsuperscript{42} HELCOM 2013a, Overview of the status of the network of Baltic Sea marine protected areas, Baltic Marine Environment Protection Commission
\end{itemize}
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.43

**Habitats and protected species**

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 and mapping of habitats. It 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.

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 fragmentation44.

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).

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. The figure below shows distribution of the various coast types of the Baltic Sea.

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43 Planning and management of Baltic Sea Protected Areas: guidelines and tools (typescript)
44 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.

Source: www.naszbaltyk.pl
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).

In the 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,\(^{46}\) 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. The protected marine species include: River Lamprey and Sea Lamprey, Twait Shad, Grey Seal and Harbour Porpoise. Within the bird areas, protection mainly covers ducks, gulls, terns, grebes and divers.\(^{47}\)

**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.

the management of Natura 2000 sites, particular attention was paid in the White Paper on Adaptation to Climate Change (European Framework for Action, 2009).

Determined in Poland network of ecological corridors combines valuable habitat areas in the region, and creates a network of connections across the country and internationally. From 7 major ecological corridors, 2 are on the analyzed area (Northern Corridor and North Central Corridor). In the Kaliningrad region a relevant system was developed. 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 are also no guidelines to maintain consistency of ecosystems and connectivity between populations.

\(^{46}\) HELCOM 2013b, HELCOM Red List of Baltic Sea species in danger of becoming extinct, BSEP No. 140

\(^{47}\) Marine Natura 2000, GDEP 2012
The figure above presents the ecological corridors 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, Vistula and Oder are of international rank. Other rivers constitute ecological corridors of national importance.

In the Kaliningrad Region the terminology differs due to the specific scientific approach by local scientists. The concept of a "natural framework" envisages a system formed naturally by natural systems connected by matter-energy flows. This natural framework includes three basic structural and functional components: supply areas of geosystem, migration corridors and areas of internal stability.


Nature of the Kaliningrad region. The key nature complexes, Kaliningrad 2014
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 dispersional migration. Often, they depend on hydrological conditions prevailing in the Baltic Sea (mainly salinity) and the state of water quality. 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 10 Bird migration routes in the South Baltic Sea region](image)

**Forests**

Forest 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.

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The Programme eligible area is dominated by agricultural and forest areas forming a mixed structure of land use. 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.

![Map of forest types in the Programme area](image)

Figure 11 Forest types in the Programme area

**Soils**

Soils have many functions very important and necessary for the existence of humans and ecosystem functions. 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 12). 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 Poland), 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 12 Soil types in the Programme area](image)

**Figure 12 Soil types in the Programme area**

**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.

52 Source: Own work based on data from [http://eusoils.jrc.ec.europa.eu](http://eusoils.jrc.ec.europa.eu)
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 analysed 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, as well as on the basis of data provided by countries participating in the Programme.

Table 3 The key drivers of changes in the nature.

<table>
<thead>
<tr>
<th>Changes in the nature</th>
<th>Drivers of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of non-forest and wetland birds habitats.</td>
<td>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.</td>
</tr>
<tr>
<td>Loss of coastal habitats for marine mammals and birds</td>
<td>Water sports: kitesurfing, windsurfing, jet-skis, yachts and other sports causing disturbance of birds and marine mammals infeeding, resting and breeding sites. Movement of vessels causing noise and disturbance.</td>
</tr>
<tr>
<td>Unification of marine habitats.</td>
<td>Standardisation of the physical and biological characteristics over large areas takes place in consequence of alteration of physical and chemical properties of water.</td>
</tr>
<tr>
<td>Changes in the nature</td>
<td>Drivers of change</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Natural seabed transformation, destruction of habitats</td>
<td>Extraction of sand and gravel, hydropower constructions, construction of pipelines, oil exploration, construction of wind farms.</td>
</tr>
<tr>
<td>Threat to populations of protected species of marine mammals and diving birds.</td>
<td>By-catch in fishing nets is considered the most significant threat to 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.</td>
</tr>
<tr>
<td>Fragmentation of habitats, including breaking down of ecological corridors.</td>
<td>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.</td>
</tr>
<tr>
<td>Secondary succession of non-forest habitats.</td>
<td>Abandonment of agricultural use, especially the abandonment of meadow use.</td>
</tr>
<tr>
<td>Qualitative and quantitative changes of natural habitats due to water eutrophication.</td>
<td>Excessive fertilisation and use of plant protection products, the lack of appropriate treatment systems in the field of wastewater management.</td>
</tr>
<tr>
<td>Mechanical damages to the rare plants and natural habitats.</td>
<td>Development of tourism and recreation.</td>
</tr>
<tr>
<td>Degradation of landscape features.</td>
<td>Construction of communication and tourism infrastructure, urbanisation.</td>
</tr>
</tbody>
</table>

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 protected areas including 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\textsuperscript{53}.

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\textsuperscript{54}. 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.

\textsuperscript{53} Our life insurance, our natural capital: an EU biodiversity strategy to 2020, COM (2011) 244.

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\(^{55}\) the average temperature of the Baltic Sea surface waters increases up to \(1\degree C\) 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*,\(^{56}\) the potential damages caused by weather phenomena were specified for the most vulnerable sectors.

Table 4 Weather and climatic events causing social and economic damages\(^{57}\)

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

\(^{55}\) Climate change in the Baltic Sea Area HELCOM thematic assessment in 2013, Baltic Sea Environmental proceeding No. 137

\(^{56}\) [http://www.mos.gov.pl/g2/big/2013_03/e436258f57966ff3703b84123f642e81.pdf](http://www.mos.gov.pl/g2/big/2013_03/e436258f57966ff3703b84123f642e81.pdf)

\(^{57}\) Source: National Strategic Plan for Climate Change Adaptation for sensitive sectors and areas by 2020 and outlook 2030, after E. Siwiec (IOŚ- PIB)
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\textsuperscript{58}.

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.

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

\textsuperscript{58} Ibid.
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 Programme area (including the Baltic Sea) i.e.: natural gas, crude oil, amber and mineral aggregates.

According to the *Baltic Sea Action Plan* 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. Currently, the exploration of oil still continues, also in other regions of the Baltic Sea, i.e. in the Russian zone, in the Kaliningrad region. One of the most important oil field (the Kravtsovskoye oilfield) is located, about 22 kilometers west of Russia's Kaliningrad Oblast. The Baltic Sea is also rich in building materials, such as: boulders, gravels, pebbles and sand. Resources of these materials appear in the area of Slupsk Bank. 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 Chłapowo to Sambia Peninsula (about 200 km²). 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 ferromanganese 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.

Mineral resources of the Kaliningrad region are represented by deposits of oil, amber, peat, sand and gravel, sand, clay, fresh and mineral water, curative mud, potassium salt, rock salt, brown coal. The main minerals that are attributable to the fuel and energy raw material is oil. According to the Ministry of Infrastructure Development of the Kaliningrad Region in 2014 new mineral deposits were explored in the region. 9 geological nature protected territories are formed in order to eliminate illegal amber mining.

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59 [http://www.bsap.pl/bogactwa-naturalne-morza-baltyckiego](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, studies report intensification of the process of resource depletion, and thus waste is more and more treated as a source of raw materials. Therefore, the EU takes actions to implement sustainable patterns of consumption and production, and a gradual shift to circular economy. In the near future effects of those activities shall be expected also in Poland. The potential of renewable energy resources is also significant.

Undertaken activities can be grouped into two main phases:
- waste prevention,
- waste management,

Waste management should adopt the following waste hierarchy:

Figure 13 Waste hierarchy

Source: Strategy ‘Energy security and the environment’. Outlook 2020, the Ministry of Economy and Ministry of Environment in Poland
The following list presents main problem areas in the field of waste management in the analyzed area:

- high proportion of waste disposal through landfilling,
- inefficient municipal waste recovery installations,
- lack of balance of installations for waste management in order to achieve the required levels of recovery and recycling,
- problem with the management of the increasing amount of sewage sludge,
- insufficient quality of recycled waste,
- lack of sufficient actions to prevent waste,
- lack of sufficient number of installations for incineration of waste (for Kaliningrad region only animal and healthcare waste incineration is considered and is not a solution for solid household waste and sewage sludge from waste water treatment plants, referring to the possible air pollution risks from incinerators activity.),
- low selective waste collection rates,
- insufficient recovery of industrial waste.

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.

In 2014, according to the atmospheric air monitoring data in residential areas the air quality in the Kaliningrad region remains satisfactory, the level of pollution is below the average for the Russian Federation.\(^62\)

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\(^62\) According to the Russian Ministry of Health "interim guidance" on PDKmr and MPCmr this limit is not immediately harmful to the population and may be exceeded dependent on the type of compounds including case
**PM\textsubscript{10} and PM\textsubscript{2.5} dust pollution**

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

The annual mean concentration of particulate matter (PM\textsubscript{10}) recorded in the Kaliningrad Region in 2014 is 15.7 µg/m\textsuperscript{3}, Permissible level (maximum limit) in Russia accounts to - 50 µg/m\textsuperscript{3}.

![Figure 14 Annual mean concentration of PM\textsubscript{10} in the Programme area](image)

Figure 14 Annual mean concentration of PM\textsubscript{10} in the Programme area

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**NO₂ 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/m³ <18 times and average annual 40 µg/m³) take place only in the larger cities in the areas of forced movement.

Annual mean concentration of NO₂ recorded in the Kaliningrad Region indicates the parameter measured as 6,5 µg/m³ in 2014 has almost no significant fluctuations, with the maximum permissible concentration one time exposure in Russia NO₂ - 20 µg/m³.

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

![Map of nitrogen dioxide concentration](image.png)

**Figure 15 Annual mean concentration of NO₂ in the Programme area**

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**O₃ air pollution**

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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/m³ by daily maxima of 8-hour concentrations. However the allowable number of days with exceedances of the limit is 25. Measurement data and the modelling results for the period 2009-2012 indicate that there were no exceedances in the Polish part of the Programme eligible area, and probably also in the Kaliningrad Region, 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. Exceedances of standards are reported in the Polish part of the analysed area.

The annual mean concentrations of B(a)P recorded in the Russian part of the Programme was on level of 1 700 ng/m³ in 2014 and was below maximum permissible concentration -5 000 ng/m³).

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65 In the Kaliningrad region the ozone concentrations are not measured
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 4.6 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 5 The key issues related to environmental quality in the Programme eligible area.

<table>
<thead>
<tr>
<th>Environmental quality issue</th>
<th>Drivers of change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air</strong></td>
<td></td>
</tr>
<tr>
<td>Exceedances of normative values of PM$<em>{10}$, PM$</em>{2.5}$, benzo(a)pyrene in the Polish part of the Programme.</td>
<td>Emissions from individual heat sources, individual waste incineration, traffic emission.</td>
</tr>
<tr>
<td>Exposure of residents of some cities (including sensitive groups) to excessive concentrations of air pollutants that cause serious health effects.</td>
<td>Dense urban setting, obsolete heating systems, socio-economic problem of the transition to cleaner forms of thermal energy.</td>
</tr>
<tr>
<td>The risk of long-term adverse health effects even at exposure below the pollutant’s limit values (eg NO$_2$).</td>
<td>Too heavy road traffic in city centres, emissions of pollutants into the air.</td>
</tr>
<tr>
<td><strong>Noise</strong></td>
<td></td>
</tr>
<tr>
<td>Exceedances of environmental noise limits observed in cities.</td>
<td>Sources of traffic noise emission (intensive road traffic, trams, less frequently rail).</td>
</tr>
<tr>
<td>Growing negative impact of aircraft noise.</td>
<td>Dynamic growth in international air traffic.</td>
</tr>
<tr>
<td><strong>Water</strong></td>
<td></td>
</tr>
<tr>
<td>Risk of exceedances of limits of nitrates in drinking water</td>
<td>Penetration of nitrates from agricultural fields into the soil, and then into surface water and groundwater.</td>
</tr>
<tr>
<td>Lack of access of inhabitants to collective supply of drinking water.</td>
<td>Infrastructural gaps, especially in small towns.</td>
</tr>
</tbody>
</table>
4.6. **WATER RESOURCES, FLOOD AND DROUGHT PREVENTION AND WATER MANAGEMENT ISSUES**

Nine highly developed industrial and agricultural countries are located in the area of the Baltic Sea basin, what have an important impact on the environmental state of the Baltic Sea. Most hazardous substances fall into waters of the southern and eastern Baltic Sea with the waters of large rivers. The largest rivers draining water from the Programme eligible area are Vistula and Pregolya. 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*\(^{67}\) 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\(^{68}\).

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\(^{69}\)) 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) of the 20th century)\(^{70}\).

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\(^{68}\) 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


\(^{70}\) www.bsap.pl
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), 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.

In 2012, state of the environment of Polish marine areas in terms of eutrophication was considered inappropriate. The problem of anthropogenic eutrophication is primarily concerned with the Curonian and Vistula lagoons, where there is a steady increase in the maximum concentrations

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73 Source: BASP [http://www.bsap.pl](http://www.bsap.pl)
of nutrients. Strengthening nutrients status of the lagoons is due to the highly contaminated area of the largest rivers - Neman and Pregolya, which receives untreated urban emissions occurring without a thorough treatment. All this has led to negative consequences in the ecosystem of the Baltic Sea. First of all, there is a significant variation in the biota in the Curonian Lagoon. The tables below show changes in the load of total nitrogen and total phosphorus discharged into the Baltic Sea.

Table 6 Total phosphorus load volumes, calculated respectively per basin surface area and per capita of selected countries in the Baltic Sea basin area

<table>
<thead>
<tr>
<th>Country</th>
<th>Total phosphorus load volumes discharged into the Baltic Sea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[t/year]</td>
</tr>
<tr>
<td>year</td>
<td>1995¹</td>
</tr>
<tr>
<td>Russia</td>
<td>7107</td>
</tr>
<tr>
<td>Poland</td>
<td>14208</td>
</tr>
</tbody>
</table>

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 7 Total nitrogen load volumes, calculated respectively per basin surface area and per capita of selected countries in the Baltic Sea basin area

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[t/year]</td>
</tr>
<tr>
<td>year</td>
<td>1995¹</td>
</tr>
<tr>
<td>Russia</td>
<td>84646</td>
</tr>
<tr>
<td>Poland</td>
<td>214718</td>
</tr>
</tbody>
</table>

[^75]: The main Problems of the Baltic Sea on the Local Level in Russia: The Case of Kalingrad Oblast, D. Nechiporuk and M. Nozhenko.
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 18 Spatial distribution of phosphate concentrations in the Programme area

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78 Source: Own work based on data from [http://maps.helcom.fi/website/mapservice/index.html](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. Therefore, under the CHEMSEA project an assessment was carried out on the risks associated with dumped chemical weapons, including mustard gas in the Baltic Sea. Maps were prepared showing the places of deposition of chemical weapons. The impact of spills on organisms also was prepared, together with guidelines for the fishermen.

**The quality of bathing waters**

In 2014, the EU Member States have designated 21 538 bathing areas, of which 21 255 were determined within the boundaries of 28 EU countries. In 2014, 95% of the EU bathing waters meet

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79 Source: Own work based on data from [http://maps.helcom.fi/website/mapservice/index.html](http://maps.helcom.fi/website/mapservice/index.html)

80 [http://chemsea.eu](http://chemsea.eu)
the minimum water quality standards set out by the Bathing Water Directive\textsuperscript{81}. Most Polish bathing waters were positively assessed.

Also in Kaliningrad Region, according to the Kaliningrad Department of Rospotrebnadzor in Kaliningrad region (Federal Service for Supervision of Consumer Rights Protection and Human Welfare Rospotrebnadzor in Kaliningrad Region) survey, majority of bathing places were positively assessed. Only the water in Tylzha reservoir is unsafe, so swimming is prohibited.\textsuperscript{82}

The main problem with bathing water quality is pollution by 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.

\textit{Surface water}

State of surface water bodies (\textit{jcw}) in the Polish part of the Programme is diverse. Studies carried out in 2010-2012 show that there are both units assessed positively, and those with poor assessment of water condition. The situation in the assessment of ecological status of lakes in the Polish part of the Programme is similar. They were assessed from ‘bad’ to ‘very good’.

In 2014, compared with 2013, the situation with the state of both underground and surface water sources centralized drinking water supply and water quality in places of water intake in Kaliningrad Region has not changed significantly and remains stable. It should be noted that in 2014 cases of high and extremely high-pollution of surface water is not fixed.

In 2012, in the scope of ecological status/potential coastal and transitional water bodies in more than 90% of the cases were assessed below good (according to the Water Framework Directive). The same rate was acquired by all coastal and transitional waters in the region of the southern Baltic Sea.

In most cases, the main threat to \textit{jcw} (surface water bodies) of lakes is an excessive loading with nutrient substances of both agricultural and municipal origin.

In the case of \textit{jcw} (surface water bodies) of rivers considered at risk of failing to achieve good state, in most cases the outcome of biological elements (phytobenthos and macrophytes) classification prejudged about the assessment result. In the group of physical and chemical factors, exceedances were most frequently relating to COD\textsubscript{Mn} and phosphates. Results of the evaluation of biological factors (flora) prejudged about the bad state of \textit{jcw} (surface water bodies) that constitute dammed

\textsuperscript{81} European bathing water quality in 2014, EEA Report 1/2015
\textsuperscript{82} \url{http://www.rosbalt.ru/kaliningrad/2015/06/10/1407369.html}
lakes. In the group of physical and chemical factors, exceedances were most frequently relating to such indicators as $\text{BOD}_5$, $\text{COD}_{\text{Mn}}$, and TOC.

**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 determined as bad. This is a result of various anthropogenic impacts of different sectors of the economy\(^8^3\).

In Poland, general condition (taking into account chemical and quantitative features) of the groundwater quality (jcwpd) can be described as good (according to The Water Framework Directive). According to research conducted in Poland in 2012, the state of jcwpd (groundwater bodies) in the Polish part of the Programme eligible area was good.

Groundwater in the Kaliningrad Region (Kaliningrad Oblast) is characterised by quite a stable situation. In 2013 contamination of groundwater were observed in the village Lazovsky (Guryevskiy district). The contamination was confirmed as a technogenic pollution with ammonium. It was stated that the pollution was of communal and agricultural types. The cause of contamination is the infiltration of pollutants from anthropogenic sources\(^8^4\). No petrochemical and other types of pollution were observed in 2013-2014.

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.


Figure 20 Overexploitation of groundwater resources and saltwater intrusion in the Baltic Sea region.
(EEA 1995)\textsuperscript{85}.

\textit{Flood risk}

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 saltwaters 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) they 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.


**Risk of coastal flooding (projected climate change and rising waters of the Baltic Sea)**

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, and the whole coastal area, with the highest population density in the area of the South Baltic Sea.

According to the Russian Hydrometeorological Service, Kaliningrad basin administration almost 10% of total region population could be exposed to hazardous hydrological processes. The most dangerous floods and surges usually occur at Deima, Matrosovka, Neman and Pregolya river deltas, flooding such cities as Kaliningrad and Polessk. Only approximately ¼ of all exposed settlements are located in high probability flooded zones. About 80% of the region area is covered with the drainage system, which guarantees normal functioning of regions economics. The drainage system was constructed in the beginning of XXth century and it is almost depreciated.

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86 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"

87 Zemtsov, Stepan, Kidyaeva, Vera and Fadeev, Maxim, (2013), *Socio-economic risk assessment of flooding for Russian coastal regions*, ERSA conference papers, European Regional Science Association

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.

Analyses (available in literature) of climate change in the Baltic Sea region indicate shorter transitional seasons (ie. spring and autumn), with a tendency of warm and cool season to dominate. 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).
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. 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 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.

89 http://floods.jrc.ec.europa.eu
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 8 Drivers of adverse changes in the aquatic environment\textsuperscript{90}

<table>
<thead>
<tr>
<th>Issue</th>
<th>Drivers of adverse changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine and surface waters</td>
<td>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.</td>
</tr>
<tr>
<td>Secondary pollution of the basin.</td>
<td>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.</td>
</tr>
</tbody>
</table>

\textsuperscript{90} Source: own work.
<table>
<thead>
<tr>
<th>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.</th>
<th>Pollution loads flowing with river waters, deposition of air pollutants, works in marine areas, marine pollution from maritime shipping, transormance of the shoreline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area source pollution, and to a lesser extent linear pollution.</td>
<td>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.</td>
</tr>
<tr>
<td>Increase of pressure on the water of the Baltic Sea.</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Groundwater</strong></td>
<td></td>
</tr>
<tr>
<td>Risk of deterioration of water quality, especially in the Quaternary deposits.</td>
<td>Waters poorly insulated from the ground are very sensitive to impurities migrating from the surface of the earth. Many MGB, representing 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 saltwaters and salty waters into aquifers. This event is caused by over-exploitation of groundwater in the coastal belt or the sea level rise.</td>
</tr>
<tr>
<td>Risk of over-exploitation, especially in hydrological drought conditions.</td>
<td>Excessive water intake in comparison to the possibility of restoration of water resources.</td>
</tr>
<tr>
<td>Extreme events and hydro-technical devices</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Increase of flood risk.</td>
<td>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.</td>
</tr>
<tr>
<td>Gradual reduction of the watershed retention.</td>
<td>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.</td>
</tr>
<tr>
<td>More frequent occurrence of the so-called urban flooding and severity of damages.</td>
<td>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.</td>
</tr>
<tr>
<td>The increasing frequency of droughts.</td>
<td>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.</td>
</tr>
<tr>
<td>Risk of coastal abrasion.</td>
<td>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. Cliff coasts are particularly at risk.</td>
</tr>
</tbody>
</table>

---

of abrasion. In turn, sandy beaches and dunes are exposed to wash out and wind erosion.

### Other issues

<table>
<thead>
<tr>
<th>Risk of overfishing.</th>
<th>The problem relates primarily to excessive use of cod stocks. In addition, illegal fishing is a serious problem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous substances and chemical weapons in the waters of the Baltic Sea.</td>
<td>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.&lt;sup&gt;92&lt;/sup&gt; In addition, a potential threat to organisms is represented by spills of chemical weapons dumped in the Baltic Sea.</td>
</tr>
</tbody>
</table>

#### 4.7. **Historical Heritage Objects**<sup>93</sup>

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.

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<sup>92</sup> Commission Staff Working Document of December 2010 accompanying the communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee the Committee of the Regions concerning the European Union Strategy for the Baltic Sea Region

<sup>93</sup> 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.

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Figure 23 The approximate locations for the '100' most valuable underwater cultural heritage sites in the Baltic Sea\textsuperscript{95}

\textsuperscript{95} 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 nr 1267/03-51, 2006
4.8. **Summary**

The four main 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.

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5. **The Environmental Report**

5.1 **General Assessment, Description and Summary Assessment Matrix**

Environmental impact assessment for the draft Poland - Russia Cross-border Cooperation 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 assumed criteria for assessing impact of each individual element of the environment are presented in the following table.
Table 9 Selected criteria for assessing impact of the Programme on individual elements of the environment.

<table>
<thead>
<tr>
<th>No.</th>
<th>Elements of environment subject to research</th>
<th>Evaluation criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Biodiversity</td>
<td>The impact on species and habitats protected, in particular, under the Natura 2000 network and the BSPA</td>
</tr>
<tr>
<td>2</td>
<td>Fauna</td>
<td>Impact on protected species</td>
</tr>
<tr>
<td>3</td>
<td>Flora</td>
<td>Impact on natural habitats</td>
</tr>
<tr>
<td>4</td>
<td>Impact on the integrity of protected areas</td>
<td>Impact on maintaining consistency of the protected areas, and generally on passable condition of the ecological corridors</td>
</tr>
</tbody>
</table>
| 5   | Water                                      | 1. Impact on the quality of surface water and groundwater  
2. Impact on marine waters  
3. Impact on increasing the risk of floods and floodings; |
| 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 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) |
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

1. Impact on the maintenance of good technical condition of culture heritage objects;
2. Impact on improving functionality and public accessibility of the culture heritage objects, and consolidating the aesthetics in the public space;
3. Impact of the construction works on the condition of the culture heritage objects located in the neighbourhood;
4. Impact of location of new investment on the exposure of a culture heritage object that constitutes local dominant feature.

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 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 10 Matrix of relation of environmental elements and investment priorities that are likely to have significant impact on the environment.

<table>
<thead>
<tr>
<th>Code (priority, measure)</th>
<th>Field of intervention</th>
<th>Elements of environment subject to impact assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2.3.a</td>
<td>Development of water management infrastructure, waste management, air protection, etc.</td>
<td>+, &gt;&gt;&gt;, P</td>
</tr>
<tr>
<td>a) water and wastewater management</td>
<td></td>
<td>+, B,</td>
</tr>
<tr>
<td>2.3.b</td>
<td>Development of water management infrastructure, waste management, air protection, etc.</td>
<td>+, &gt;&gt;&gt;, P</td>
</tr>
<tr>
<td>b) waste management</td>
<td></td>
<td>+, B,</td>
</tr>
</tbody>
</table>

96 Including archaeological heritage objects
<table>
<thead>
<tr>
<th>Code (priority, measure)</th>
<th>Field of intervention</th>
<th>Elements of environment subject to impact assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>biodiversity</td>
</tr>
<tr>
<td>Code (priority, measure)</td>
<td>Field of intervention</td>
<td>Elements of environment subject to impact assessment</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Code</td>
<td>Field of intervention</td>
<td>Elements of environment subject to impact assessment</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Code (priority, measure)</td>
<td>biodiversity</td>
</tr>
<tr>
<td>5.7</td>
<td>Reconstruction of provincial road 512</td>
<td>- &gt;, &gt;, &gt;&gt;,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;&gt;&gt;, &lt;-, -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;, o, B,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P, skum.</td>
</tr>
<tr>
<td>5.8</td>
<td>Reconstruction of national road 65, section Kowale Oleckie - Olecko</td>
<td>- &gt;, &gt;, &gt;&gt;,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;&gt;&gt;, &lt;-, -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;, o, B,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P, skum.</td>
</tr>
<tr>
<td>5.9</td>
<td>Bypass of Filipów (provincial road 652)</td>
<td>- &gt;, &gt;, &gt;&gt;,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;&gt;&gt;, &lt;-, -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;, o, B,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>Code (priority, measure)</td>
<td>Field of intervention</td>
<td>Elements of environment subject to impact assessment</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Nature of impacts</td>
<td>Symbol</td>
<td>Type of impacts</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>positive</td>
<td>+</td>
<td>direct</td>
</tr>
<tr>
<td>possible negative</td>
<td>-</td>
<td>indirect</td>
</tr>
<tr>
<td>significant negative</td>
<td>-</td>
<td>secondary</td>
</tr>
<tr>
<td>both positive and possible negative</td>
<td>+, -</td>
<td>cumulative</td>
</tr>
<tr>
<td>no significant impacts</td>
<td>n/a</td>
<td>short-term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>medium-term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>long-term</td>
</tr>
<tr>
<td></td>
<td></td>
<td>permanent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>temporary</td>
</tr>
</tbody>
</table>
5.2 SUMMARY OF DETAILED STUDIES

The assessment examined potential environmental impact of different groups of actions likely to be funded under the Poland - Russia Cross-border Cooperation Programme 2014-2020 on all elements of the environment. Results of detailed analyses can be found in the Appendixes 4 and 5. In order to determine combined impact of the Programme, 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 is of a high level of generality and covers a significant area - approx. 68.9 thousand km². Given the non-specified nature and localisation of the majority of projects under the Programme, and large coverage of the supported area with Natura 2000 sites (in terms of their quantity) as well as other protected areas (including those in the Kaliningrad Region) and BSPAs, at this stage it is impossible to perform a detailed analysis of the impact on these areas, except for projects specifically located, as shown in Appendix 5 and on the map set out below.
Figure 24 Location of projects proposed for implementation under the Programme on the background of protected areas.

The aforementioned map can also be used to locate draft projects that will be proposed for implementation under the Programme in relation to protected areas.

Implementation of the Programme findings will primarily have indirect positive impact on biodiversity. Exemplary actions indicated in the Programme under particular priorities, and directions of intervention point for the promotion of green economy that uses natural resources in a sustainable manner. Other issues that are emphasised include limiting pressure of economic development on the environment, while maintaining ecosystem functions and services. Large part of funds is intended for protecting, promoting and developing natural and cultural heritage, 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 for protecting and enhancing biodiversity, nature conservation and green infrastructure, recultivation and sustainable use of natural heritage.

Potential threats to the conservation of biological diversity may include promoting and developing 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 protected areas, including 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 protected areas, including 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 projects in the field of renewable energy, that can have a negative impact on the environment, depending on their scale and location. In particular, the negative impact can refer to the impact of wind power on the coherence of protected areas and passable condition of the ecological corridors in the field of bird migration.

At the level of the entire Programme, no significant threats are identified to biodiversity and protected species of plants and animals in the Programme eligible area. The potential negative impacts of the project will be local, and should be analysed at the stage of the environmental impact assessment procedure.

Priority 1 Cooperating on cultural and historical heritage for their preservation and development;
This priority will mainly implement ‘soft’ measures with a positive or neutral impact on the environment, and with a focus on cooperation and joint initiatives, including those relating to environmental protection. The exception will be joint projects on preparation and implementation of investments in tourism infrastructure and protection, restoration and reconstruction of cultural heritage objects. These actions may have impact on nature, but it is not expected to be significant, however, individual project proposals in these areas should be analysed in terms of their potential effects or their impact on the accumulation of impacts.
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 advisable 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 protected areas, including Natura 2000 sites and BSPAs, made reference to existing management plans for these areas. It can be difficult due to the lack of existing management plans for a range of protected areas. It should be necessary to refer to the above management plans in projects involving activation of tourism based on natural heritage.

Priority 2 ‘Cooperation for the clean natural environment in the cross-border area’ will implement a whole range of measures involving cooperation on environmental protection (including nature conservation). They will undoubtedly have a positive impact on the environment. Efforts for the protection of the coastal zone are also worth emphasising.

Partially negative impact on nature is also possible and relating to the implementation of joint projects supporting the use of renewable energy sources, especially wind, biomass, water and geothermics.

In the field of wind turbines (apart from the risk of collision with birds) adverse effects may be caused by warning lights that can be bewildering for the birds. In the field of hydropower, adverse effects relate to the creation of barriers to the displacement of fish. Due to their scale, potential projects can be assessed that, in general, they will not have a significant negative impact on biodiversity and protected species of plants and animals. Possible negative impacts will be assessed for each project under the Environmental Impact Assessment, which aims to eliminate and reduce potential negative effects.

However, it should be noted that the mentioned actions will also have indirect positive nature, because they will contribute to reducing emissions of air pollutants and greenhouse gases.

Other measures that may have negative impacts on nature and its biodiversity include development of infrastructure for water management and waste management. Generally, these measures will
be indirectly positive for nature, because, they will indirectly contribute to the reduction of emissions to the environment (and mainly into the aquatic environment), but also, to a lesser extent, they can have a negative impact through the seizure of land and interactions occurring during construction.

**Priority 3** Accessible regions and sustainable cross-border transport and communication will mainly cover measures relating to the improvement of transport efficiency, and reduction of its adverse impact on the environment These actions should have indirect positive impact on limiting the transport pressure on nature, though, some of them, at the stage of project selection should be examined more thoroughly. This applies, in particular, to multimodal nodes that apart from positive indirect impact can also interact negatively, depending on their characteristics and location.

The measures proposed to be implemented under **Priority 4** ‘Joint actions for border efficiency and security’ mostly cover joint initiatives and projects in the field of border crossings. The analysis of potential projects for implementation shows that they should not have negative impact on nature, since they mainly relate to the existing infrastructure.

In the context of large infrastructure projects, the projects likely to have significant, negative impact on the environment which implementation is expected include: construction and modernisation of roads and construction of sewage treatment plants or sewage systems. The impact that wastewater management projects have on nature are discussed above.

In the scope of construction and modernisation of roads, most of the proposed projects were listed by name indicating location, which allowed to determine their possible impact on species and habitats in protected areas, including Natura 2000 network. Such analysis is presented in Appendix 5 (Protected areas that can be significantly affected by investments under Poland - Russia Cross-border Cooperation Programme 2014-2020), Appendix 4 (in-depth analyses), and on the map set out above.

It should be noted that most activities in this field is relating to the modernisation of existing roads, however, depending on the project, they can make the negative impacts to enlarge or reduce, so each project from this scope should be reviewed prior to acceptance. General analyses carried out at the Programme level of detail show, that the above listed actions rather should not have a significant negative impact on nature.

**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. If, however, during a detailed assessment of any of the proposed projects significant impact on Natura 2000 sites was identified,
then Polish Nature Protection Act should be taken into account. It states that it is prohibited to take actions that could have a significant negative impact on these areas, unless there is an overriding public interest in undertaking such measures.

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.

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: floods, flooding and landslides.

The legal provisions of all countries covered by the Programme and the EU legislation should not allow to implement projects that can deteriorate the state of surface water, marine water and groundwater in a qualitative and quantitative manner. The law should also prohibit 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. Measures of investment nature 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, regional (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 rather expects implementation of small-scale projects, so their impact on the environment can be small.

Potential negative impacts may be temporary or permanent. Projects approved for implementation and characterised by constant, significant 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. In terms of water quality, projects that may result in
failure to achieve environmental objectives contained in the river basin management plan, can be carried out under the conditions set out in Article 38j of the Water Law. Furthermore, while implementing projects under the Programme, attention should be given to the compliance with EU legislation, e.g. Water Framework Directive (2000/60/EC), Marine Directive (2008/56/EC) and relevant provisions of the countries participating in the Programme. Soft measures implemented under priorities 1 and 2 and relating to cooperation in the field of protection of natural and cultural heritage should not have direct negative impact on the environment, but can be of significant positive importance if they involve educational aspects related to the protection of the aquatic environment, particularly in the field of sustainable use of water resources. As a consequence, actions to be implemented will be able to stimulate pro-ecological behaviour and have an indirect positive impact on the environment. Such measures as joint development of cross-border research, strategies and plans, water management (and other) standards can have a particularly 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 investments enhancing green tourism infrastructure (Priority 1) can have a negative impact on water status, even if implemented on a small scale. This may for example involve the use of geothermal energy, 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 such 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

98 Journal of Laws of 2015, item 469, as amended
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 the Programme projects 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 some projects can significantly reduce the negative impact i.a. 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.

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, improvement of transport efficiency and promotion of green transport (Priority 3 + large projects) will have an indirect positive impact on the environment.

It should be emphasised that projects in the field of transport and 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 significant negative impact on the environment, the procedure of environmental impact assessment will be carried out.

Projects in the field of renewable energy (biomass, hydropower, wind power, 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. It should be noted, however, that on the other hand they will also have a positive impact on water by reducing air pollutant emissions from coal power plants (with the exception of biomass).
An important contribution to the aquatic environment will be given by activities relating to the construction of water and wastewater infrastructure (Priority 2 + large-scale projects), because, still, a large proportion of municipal wastewater is discharged into water without proper treatment. Similar positive impact can have measures in the field of waste management, that may protect groundwater against adverse effects associated with waste disposal or other processes of waste utilisation.

### 5.2.3. Air (including noise)

The areas of intervention, envisaged in the Programme, influence air quality in various ways, depending on the characteristics and location of the project proposed for funding. Soft projects implemented under priorities 1 and 2 and relating to cooperation in the field of natural and cultural heritage and environmental protection can have impact on increasing knowledge about the environment and its effective management. For this reason, it is expected that they will also have a positive impact on improving air quality.

Significant positive impact on air protection will be presented by projects implemented under Priority 2 and relating to implementation of investments 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 (Priority 1), 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.

Special attention should be paid to the negative direct impact causing noise and vibrations, especially in the case of wind power.
Also within the scope of projects improving transport efficiency it can be said that the implementation of projects will have a positive impact on reducing emission of air pollutants, because it will be associated with the reduction of energy intensity of transport. 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. Similar positive and negative effects may occur in case of implementation of road projects (Priority 3 + large investments).

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.

Investments in water and wastewater management (Priority 2 + large investments) can affect the air only locally in the case of sewage treatment plant or waste management facilities. This could refer, first and foremost, to odour emissions.

### 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.

Priorities 1 and 2 will implement a number of ‘soft’ projects on cooperation in the field of natural and cultural heritage and environmental protection. These actions should have a positive impact on all elements of the environment (including the reduction of air emissions), and thus on health.

Significant positive impact on health protection will be presented by projects in the scope of the use of renewable energy sources (Priority 2). 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 (Priority 1), 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).

It should be emphasised that measures from the scope of transport improvement (Priority 3 + large investments) 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 priority 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.

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.

Projects relating to water and wastewater management (Priority 2 + large investments) will have a positive impact on health, because they should reduce emissions of pollutants into the environment, although in the project neighbourhood some negative effects can be observed in the form of odours.

### 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.

‘Soft’ measures specified in the priorities 1 and 2 are not expected to have a negative impact on the landscape. However, they can (by increasing public awareness, and the awareness of managers at various levels and local administrative centres) have a positive impact on developing the landscape when implementing other projects - outside the Programme.

Projects, especially in the scope of the use of renewable energy sources (Priority 2), can have a negative impact on 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 culture heritage objects representing spatial dominant or valuable urban compositions (e.g. viewing axes, historic urban layout).

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 (Priority 3 + large projects) can also 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 the detailed analyses have sought to take these issues into account.

Priorities 1, 2, 4 envisage a range of soft measures for cooperation for protection and promotion of natural and cultural heritage, cooperation for clean environment, joint actions for border efficiency and security. Negative impact of those measures on the climate is not expected. However, they can (by increasing public awareness, and managers awareness at various levels, and local administrative

99 Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment, European Commission 2013
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.

Projects possible to implementation under Priority 1, relating to the use of renewable energy sources, will clearly have impact on reduction of greenhouse gas emissions, including impact on tackling climate change.

In contrast, promotion, protection and dissemination of natural and cultural heritage (Priority 1), associated with the development of tourism, can improve the mobility, and that may lead to additional greenhouse gas emissions.

Improvement of the quality of cross-border transport (Priority 3 + large projects) 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.

Projects in the field of water and wastewater management will also have a positive impact on reducing greenhouse gas emissions.

5.2.7. Soil

Most of the activities that can be implemented under the Programme (particularly under the priorities 1 and 2) will be of ‘soft’ nature, meaning that they will relate to: the protection and use of natural and cultural heritage, the increase the capacity of cooperation of local entities. Those measures will not involve construction works, and therefore will not have a direct impact on the surface. 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.

Measures 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. Similar impacts will be observed in the scope of roads (Priority 3 + large investments).
5.2.8. Natural Resources

All soft measures within the priorities 1 and 2 associated with: the strengthening of international activity and innovation capacity of the region, improving the capacity of local entities’ cooperation for the protection of natural and cultural heritage will not entail direct consumption 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 and transition towards a circular economy.

Projects possible to implementation, especially in the scope of the use of renewable energy sources (Priority 1), 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.

This will particularly apply to investment projects in the field of roads, water and wastewater management (Priorities 1, 2 + large investments). These actions may, however, be compensated by public transport improvements, water saving etc.

Measures relating to the development of environmentally-friendly low-emission transport systems and transport links 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. Culture Heritage Objects

The term culture 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.

In general, assessing the measures under Priorities 1 and 2 (strengthening cooperation for the protection of natural and cultural heritage and cooperation for a clean environment) it can be said that they will have a positive impact on the cultural heritage objects, and this impact will be both direct (improvement of the condition of cultural heritage objects as a result of joint actions) and
indirect as a result of limiting negative impact of the polluted environment on cultural heritage objects.

Many measures will be directly relating to the promotion and protection of cultural heritage, including historical heritage objects. They may involve the restoration and conservation of culture 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 (Priority 2). 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 culture heritage object. This issue was partly taken into account when discussing the impact on the landscape.

Measures from the scope of transport (Priority 3+large investments) should not have a negative impact on culture heritage objects, however, it should be considered, that they will increase accessibility of culture 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 culture 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 (Priority 1) 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 (Priority 3 + large investments) 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.

Water and wastewater management objects (Priority 2 + large investments) can have similar impact - they equip the areas with infrastructure, but on the other hand, presence of a sewage treatment plant or a waste management facility can be of concern for the attractiveness of the area and because of the odours.

5.2.11. Relation between individual elements of environment and impacts on those elements

Appendix 4 to the Report (in-depth analyses) presents results of the assessment of the possible impact of projects identified as potentially possible to be implemented under the Programme on individual elements of the environment (flora, fauna, humans, air, etc.).

On the basis of the aforementioned analyses, section 5.2 summarises impact in relation to individual elements of the environment, trying to present a synthetic view of interactions. The analyses considered all potential impacts classifying them as: direct, indirect, secondary, cumulative, short-term, long-term, permanent, temporary, etc.

Efforts were made at the same time to take into account the interrelationships between elements of the environment to the extent allowed by the general nature of the Programme. However, it should be noted that all components of the environment are interrelated and form a single ecosystem a general scale and associated local ecosystems. By ensuring balance and continuity of functioning, the ecosystems provide services essential for life on Earth (also for humans). There are many relations between impact on one environmental element and the relationship between its change and the transformation of other elements of the ecosystem as well as services provided by this system. Emission of pollutants into the air can constitute an example. Let us track just one process of impact, except for the impact on human health which is commonly known. As a result of chemical transformations, air pollutants settle on the soils and waters causing their acidification. This directly affects plants, and thus the crops, and also has detrimental impact on the sustainability of species that live in the soil. It has impact on functions that these species play in the soil by changing its properties. As a result, changes can be expected in its productivity, which may be important for agriculture efficiency and conservation of biodiversity (important for other reasons). There are many of such linkages, and it is possible to trace them and to assess impact on them by using model studies of ecosystems. However, it requires knowledge about a specific ecosystem and its interactions, which is associated with the location of the project and its characteristics. Due
to the general nature of the Programme, it would be difficult to carry out such analyses, however, it is recommended to think about it when deciding on the implementation of individual projects.

### 5.3 **Assessment of the Cumulative Impacts**

Cumulative effects 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 mostly 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 software 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 25 Possible cumulative impacts on the background of existing infrastructure, location of projects proposed for implementation under Programme and protected areas

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.

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.

The strongest impact on the environmental changes 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.

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 (except large infrastructure 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 stormwater 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. However, it is impossible to determine impact of the Programme on the probability of their occurrence.
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 difficult due to a very general wording of most areas of support, and a failure to indicate location of all projects that can be supported. The analysis of potential measures under the Programme and large infrastructural projects 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.

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.

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.

Taking the above into account, and based on analysis carried out at the Programme level of detail, no evidence of its cross-border impact is found. However, it cannot be excluded that such effects can occur in the case of individual projects, and that will be analysed individually in the process of project preparation. Taking into account the exemplary projects presented in the Programme, it is, however, 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 at the stage of the Scoping Report.
Results of these studies are presented in the table set out below.

Table 11 Results of problem analyses, including those arising from the comments of the competent authorities of countries covered by the Programme.

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<th>No.</th>
<th>Issues covered by detailed analyses</th>
<th>The results of analyses</th>
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<tbody>
<tr>
<td>1</td>
<td>Does the Programme include and propose pro-environmental objectives relevant to the needs in this regard?</td>
<td>The aim of the Programme is to support cross-border cooperation in the social, environmental and economic area, however, its Priority 2 covers cooperation for the clean natural environment in the cross-border area. It includes measures that have direct impact on the improvement of the environment. In addition, many actions of the other priorities will have indirect positive impact on state of the environment. 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 Programme eligible area. However this will have impact on its behaviour and improvement.</td>
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<tr>
<td>2</td>
<td>Have the sustainable development indices been proposed?</td>
<td>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.</td>
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<tr>
<td>3</td>
<td>Will the proposed actions contribute to effective use of natural resources, including changes of production and consumption patterns and to management of demand for 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</td>
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<td>No.</td>
<td>Issues covered by detailed analyses</td>
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<td>these resources?</td>
<td>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 funded.</td>
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<td>4</td>
<td>Will the proposed activities contribute to the implementation of eco-innovative solutions?</td>
<td>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. The degree of innovation will depend on the selection of projects. However, it can be said that cooperation and exchange of experience will have a positive impact on the introduction of effective innovations both in specific projects and management.</td>
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<td>5</td>
<td>Will the planned activities contribute to the improvement of air, surface water and groundwater, or soil?</td>
<td>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.</td>
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<th>No.</th>
<th>Issues covered by detailed analyses</th>
<th>The results of analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>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?</td>
<td>Measures proposed in the Programme 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. Some categories of intervention listed in the Programme point to the possibility of allocation of 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.</td>
</tr>
<tr>
<td>7</td>
<td>Will the proposed actions affect human health, and if so, then in what manner?</td>
<td>Measures proposed in the Programme should have at least a partial impact on the elimination of pollutants, 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.</td>
</tr>
<tr>
<td>8</td>
<td>Will the proposed activities contribute to the conservation of cultural values?</td>
<td>The proposed measures should contribute directly to conservation of cultural values. However, the results in this scope (and their scale) will depend on the selection of projects to be implemented.</td>
</tr>
<tr>
<td>No.</td>
<td>Issues covered by detailed analyses</td>
<td>The results of analyses</td>
</tr>
<tr>
<td>-----</td>
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</tr>
<tr>
<td>9</td>
<td>Will the proposed activities contribute to raising the ecological awareness?</td>
<td>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 the region, pilot solutions, and education by definition should include elements of environmental education if we take into account the objectives of the Programme.</td>
</tr>
<tr>
<td>10</td>
<td>Will the Programme implementation contribute to improvement of the state of environment or its deterioration?</td>
<td>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.</td>
</tr>
<tr>
<td>11</td>
<td>In order to meet obligations of the Polish law, the Environmental Report, prepared in the course of the strategic environmental assessment, should fully comply with the requirements deriving from Article 51</td>
<td>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</td>
</tr>
<tr>
<td>No.</td>
<td>Issues covered by detailed analyses</td>
<td>The results of analyses</td>
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<tr>
<td>-----</td>
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<td>-------------------------</td>
</tr>
<tr>
<td></td>
<td>paragraph 2 of the Act on EIA, under the conditions referred to in Article 52 paragraphs 1 and 2 of the above mentioned law (GDEP 1.1).</td>
<td>presented in section 3.1 of the Report.</td>
</tr>
<tr>
<td>12</td>
<td>Information contained in the Report should be developed according to the current state of knowledge and methods of assessment, and tailored to the content and level of detail of the proposed document, as well as to the phase of its approval in the process of developing documents relating to the mentioned one (GDEP 1.2).</td>
<td>Due to the general nature of the Programme, the Report development applied a similar degree of generality, and took into account relating documents.</td>
</tr>
<tr>
<td>13</td>
<td>The Environmental Report should take into account information contained in other environmental reports that have already been adopted and are relevant to the draft document which is the subject matter of the proceedings (Poland GDEP 1.3).</td>
<td>The work on the Report used, in particular, the Environmental Report on the South Baltic Cross-border Cooperation Programme 2014-2020 that was prepared in 2014 and includes a summary of all the other environmental reports made so far, and the Environmental Report prepared for the Lithuania - Poland - Russia Cross-border Cooperation Programme 2007-2013.</td>
</tr>
<tr>
<td>14</td>
<td>It should be emphasised 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 (GDEP 1.4).</td>
<td>The Environmental Report covers full, current version of the Programme</td>
</tr>
<tr>
<td>15</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>No.</td>
<td>Issues covered by detailed analyses</td>
<td>The results of analyses</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>the territories of countries not covered by the draft <em>Programme</em>. This should include possible impacts on marine sites (GDEP 1.5).</td>
<td>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.</td>
</tr>
<tr>
<td>16</td>
<td>The presentation of the spatial phenomena and interactions between them should be made in a graphic (maps) form (GDEP 1.6).</td>
<td>Graphic techniques were used (where possible) in the Report, including GIS tool.</td>
</tr>
<tr>
<td>17</td>
<td>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. (GDEP 1.7)</td>
<td>The European Commission guidelines were used together with other methodological materials.</td>
</tr>
<tr>
<td>18</td>
<td>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 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 (GIS 2.1).</td>
<td>Impact on health has been analysed and presented in the relevant sections of the Report.</td>
</tr>
</tbody>
</table>

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 resulted in determination of the approximate amount of funds allocated to environmental measures. Results are presented in the table set out below.

Table 12 Allocation of funds for environmental protection and climate change under the Programme

<table>
<thead>
<tr>
<th>Priority</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme funds [million EUR]</td>
<td>21,9</td>
<td>18,7</td>
<td>15,6</td>
<td>6,2</td>
<td>67,6*</td>
</tr>
<tr>
<td>The financial support for environmental protection (direct + indirect) [million EUR]</td>
<td>10,9</td>
<td>18,7</td>
<td>1,6</td>
<td>0,3</td>
<td>31,5</td>
</tr>
<tr>
<td>The share of support allocated to environmental protection in particular priority axes</td>
<td>50%</td>
<td>100%</td>
<td>10%</td>
<td>5%</td>
<td>46,6%</td>
</tr>
<tr>
<td>Estimated amount of support to be used for purposes related to climate change (million EUR)102</td>
<td>4,4</td>
<td>9,3</td>
<td>3,7</td>
<td>0</td>
<td>17,4</td>
</tr>
</tbody>
</table>

The analyses show that about EUR 31.5 million have been allocated to environmental protection, which represents about 46.6% of all funds allocated to the Programme (with technical assistance). However, about EUR 17.4 million have been allocated to projects related to tackling climate change, which represents about 22.5% of all funds allocated to the Programme (with 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. The exception is the priority 4, in which it is difficult to identify environmental measures, although it can be expected that cooperation in the field of border crossings improvement and modernisation can contribute to reducing the pressure on the environment. Although some programming activities may have negative impact on the environment, especially in the use of renewable energy resources (wind, geothermal energy, water), the general impact of the Programme on the environment will be positive, particularly as these are small-scale actions. All the positive environmental effects of particular groups of projects implemented under the Programme are listed i.a. in section 3.1. Significant positive impact will be associated with measure 2 - Cooperation for the clean natural environment in the cross-border area. 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 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 specified 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 protected sites, including 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 the majority 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.

Change of Programme is proposed as an alternative 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 majority of 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 individual countries, 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$_{10}$, 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;
• surface water quality improvement,
• improvement of the ecological status of the Baltic Sea,
• increase in the share of protected areas (including Natura 2000 sites) in the territory of Poland and the Kaliningrad Region,
• increase in the number of management plans for the established protected areas, including Natura 2000 sites.

Development of plans for the conservation of protected areas (including 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 tourism together with promotion of the natural and cultural 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 and cultural heritage) in a sustainable manner, it is necessary to take into account conservation plans for protected sites, including 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 Poland - Russia 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 the 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 the protected areas, including 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) land 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 (including plans of conservation tasks), 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 the currently known eco-innovations;
• 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 and soil protection against pollutants;
• 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 transformation and interference in valuable natural habitats, particularly habitats listed in Annex I of the Habitats Directive, for the protection of which Natura 2000 sites are determined, and valuable habitats located within the boundaries of other protected areas, i.a. 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 culture heritage objects);
• consideration of the need to conduct 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:
• 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 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 cooperation projects:
• consideration of environmental issues in all measures.
• use of joint actions for environmental education

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

Recommendations

Taking into account the possible impact of potential projects under the Programme on individual elements of the environment, recommendations can be formed for the Programme implementation - from the point of view of minimising their impact on the environment.
Table 13 Specific conclusions and recommendations.

<table>
<thead>
<tr>
<th>No.</th>
<th>Conclusions</th>
<th>Justification</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Projects implemented under the Programme should be selected with consideration of their impact on protected areas.</td>
<td>According to the environmental policies of countries participating in the Programme, and the EU legislation, the potential negative impact on the achievement of the conservation objectives for all protected areas should be limited to the maximum extent.</td>
<td>Further programming documents* should take into account minimisation of the potential negative impacts on the achievement of conservation objectives for individual protected areas.</td>
</tr>
<tr>
<td>2</td>
<td>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.</td>
<td>Despite the progress, still a low level of environmental awareness is reported.</td>
<td>Further programming documents* recommend to include (within the scope of the Priorities 3 and 4) impact on raising the level of environmental awareness of public administration, business and society.</td>
</tr>
<tr>
<td>3</td>
<td>When assessing the impact of the proposed projects, also proposed protected areas should be taken into consideration.</td>
<td>There is a high probability that the proposed protected areas will be considered protected (in legal terms), and therefore</td>
<td>Further programming documents* recommend to take into account impact also on the proposed protected areas.</td>
</tr>
<tr>
<td></td>
<td>account, including NATURA 2000 sites.</td>
<td>consideration of this fact at the stage of project selection can prevent them from a significant impact.</td>
<td></td>
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<tr>
<td>4</td>
<td>When preparing specific projects it is recommended to take into account best practices of both countries and the Baltic countries in the scope of protecting natural and cultural heritage.</td>
<td>The Programme creates great opportunities for cooperation and use of the most effective practices in the protection of natural and cultural heritage.</td>
<td>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) <a href="http://www.nba.fi/fi/File/701/copuch-ohjeistus.pdf">http://www.nba.fi/fi/File/701/copuch-ohjeistus.pdf</a>, or Transboundary Management of Transitional Water - Code of Conduct and Good Practice Examples <a href="http://www.balticlagoons.net/artwei/wp-content/uploads/2010/04/Polish-Code-of-Conduct_ARTWEI.pdf">http://www.balticlagoons.net/artwei/wp-content/uploads/2010/04/Polish-Code-of-Conduct_ARTWEI.pdf</a></td>
</tr>
<tr>
<td>5</td>
<td>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.</td>
<td>It is recommended for the exemplary measures to include those activities which are to be funded under the Programme.</td>
<td>It is proposed to add appropriate wording in the text of the Programme.</td>
</tr>
<tr>
<td></td>
<td>Further programming documents recommend to promote integrated projects.</td>
<td>Such projects represent greater environmental, economic and social efficiency.</td>
<td>further programming documents recommend to consider this criterion in projects selection.</td>
</tr>
<tr>
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</tr>
<tr>
<td>6</td>
<td>Great attention should be paid to projects related to cooperation in the field of nature conservation, and their impact on the environment.</td>
<td>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.</td>
<td>It is important to pay attention to justification of projects, and relevant assessment of environmental impacts.</td>
</tr>
</tbody>
</table>

103 Further programme documents include programme manual and project selection criteria. They will be developed in the next stage of Programme preparation for the implementation.
Conclusions
The following general conclusions can be drawn on the basis of analyses performed in the course of works on the Environmental Report on the Poland-Russia 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 associated with the improvement of the environment, however, some areas of support can also have a negative impact on particular elements of the environment. Specific conclusions in this regard are presented in relevant sections of the Report.
- General formulation of the Programme and no list of all 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 objective (which is to support cross-border cooperation in the social, environmental, economic and institutional sphere), 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.
- The analysis of internal consistency showed overall internal compliance of the Programme. A large group of priorities is complementary and/or enhances one another.
- 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 Russia and Poland 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 (Section 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 (Section 9). Given the generality of the Programme and the overwhelming number of so-called ‘soft’ measures, recommending compensatory measures at this stage was not considered reasonable.
- The analysis of the potential cross-border 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 impact at the stage of Programme’s strategic impact assessment. However, it may turn out that such impacts will occur at the stage of the environmental impact assessment carried out for a specific project.
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