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GOVERNMENT OF ROMANIA

GOVERNMENT OF BULGARIA

Strategic Environmental Assessment
of the
Romania-Bulgaria Cross Border Cooperation Programme 2014-2020

ENVIRONMENTAL REPORT

Version 0

International Consulting Expertise
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Cross Border Cooperation Programme
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Project Identification

Project title:	***"Ex-ante Evaluation and SEA of Romania-Bulgaria Cross Border Cooperation Programme 2014-2020"***
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Contracting Authority:	**Cross Border Cooperation Regional Office Călărași for Romania-Bulgaria Border** Chiciu area, part of the main building representing the Passengers and Goods Transport Public Service headquarter at CBCP Călărasi (Romania) – Silistra (Bulgaria), Călărasi County Tel. + 40 242 313 091, Fax: + 40 242 231 3092 www.calarasicbc.ro/www.cbcromaniabulgaria.eu
Contact person:	**Nicoleta MINCU** – Executive Director **Bogdan MUȘAT -** Head of Joint Technical Secretariat for Romania-Bulgaria Cross-Border Cooperation Programme 2007-2013
Implementing Authority:	**Ministry of Regional Development and Public Administration (MDRAP) – Managing Authority for the Romania-Bulgaria Cross-Border Cooperation Programme 2007-2013** Apolodor street, Bucuresti Tel: 004 0737 244 509; 0372 111 339; Fax: 004 0372 111 456 www.cbcromaniabulgaria.eu
Contact person:	**Ioana GLĂVAN** – Head of Unit
Contractor:	**International Consulting Expertise srl (ICE) (**Technical capacity third sustaining partner **ÖAR Regionalberatung GmbH)** Vasile Lascăr nr. 42-44, floor 7, apt.17-18, Sector 2, Bucuresti Tel: 021 201 65 14 / 021 201 65 15, Fax: 021 211 01 81 Email: office@iceconsult.ro, www.iceconsult.ro
Contact person:	**Maria TIMOFTE** – Head of Contract Management Department Tel: 0731 019412, E-mail: maria.timofte@eco3.ro

This Report has been prepared by the Technical Assistance team composed of Svetla TRAYCHEVA and Marilena PĂTRASCU – SEA Experts. The findings, conclusions and interpretations expressed in this document are those of the authors alone and should in no way be taken to reflect the policies or opinion of the European Commission or other parties.

Table of Contents

Appendices:

1. References and sources of information for the methods of environmental impact assessment
2. List of SEA team with signatures
3. Declarations pursuant to Article 16(1) of the Bulgarian EA Ordinance
4. List of consultations, statements and way of their integration in the EA Report

ACRONYMS

Acronym	Definition
AHR	*Average hourly rate*
ADR	*Average daily rate*
AYR	*Average yearly rate*
BG	*Bulgaria*
BD	*Basins Directorate*
BDA	*Biological Diversity Act*
BDW	*Biodegradable waste*
BSBD	*Black Sea Basin Directorate*
CBC	*Cross Border Cooperation*
CBD	*Convention on Biological Diversity.*
CF	*Cohesion Fund, a structural instrument that helps Member States to reduce economic and social disparities and to stabilise their economies since 1994. It finances large scale infrastructure projects in the environment and transport sectors.*
CRS	*Country Specific Recommendations*
DRBD	*Danube Region Basin Directorate*
EC	*European Commission.*
EEA	*European Environmental Agency/ Executive Environmental Agency*
EPA	*Environmental Protection Act*
ERDF	*European Regional Development Fund, one of the Structural Funds. The principal objective is to promote economic and social cohesion within the European Union through the reduction of imbalances between regions or social groups.*
ESF	*European Social Fund, one of the Structural Funds, aimed at realising the strategic objectives of EU employment policy.*
EU	*European Union.*
EU ETS	*The European Union Emission Trading System.*
FRMP	*Flood Risk Management Plans*
GHG	*Greenhouse gas*
GWB	*Groundwater body*
GWP	*Global warming potential.*
ICZM	*Integrated Coastal Zone Management*
IP	*Investment Priority.*
IPCC	*Intergovernmental Panel on Climate Change.*
IRBM	*Integrated River Basin Management*
MOECC	*Ministry of Environment and Climate Change*

Acronym	Definition
MOEW	*Ministry of Environment and Water*
NAPCC	*National Action Plan on Climate Change*
NCR	*North Central Region*
NCV	*National Cultural Valuables*
NDP	*National Development Programme*
NES	*National Environmental Strategy*
NER	*North East Region*
NIMH	*National Institute of Meteorology and Hydrology*
NRDS	*National Regional Development Strategy*
NSDF	*National Strategy for the Development of Forestry*
NSMDWS	*National Strategy for Management and Development of the Water Sector*
NWR	*North West Region*
OP	*Operational Programme*
OPE	*OP Environment*
OPGG	*OP Good Governance*
OPHRD	*OP Human Resource Development*
OPIC	*OP Innovation and competitiveness*
OPRG	*OP Regions in Growth*
OPSEIG	*OP Science and Education for Intelligent Growth*
OPTTI	*OP Transport and Transport Infrastructure*
PAA	*Protected Areas Act*
PM	*Particular matter*
PMAF	*Program for Maritime Affairs and Fisheries*
PP	*Plan or programme.*
RAMAAQ	*Regions for assessment and management of ambient air quality*
RO	*Romania*
RBMP	*River Basins Management Plan*
SAC	*Special Areas of Conservation designated under the Habitats Directive.*
SAPEPRBS	*Strategic Action Plan for Environmental Protection and Rehabilitation of the Black Sea*
SDTS	*Strategy for the Development of the Transport System*
SEA	*Strategic environmental assessment*
SG	*State Gazette*

Acronym	Definition
SO	*Strategic Objective*
SPA	*Special Protection Areas designated under the Birds Directive.*
TO	*Thematic Objective*
UNFCCC	*United Nations Framework Convention on Climate Change.*
WA	*Water Act*
WBA	*Water Basin Administration*
WFD	*Water Framework Directive*
WSS	*Water Supply and Sewerage*
WWTP	*Waste Water Treatment Plant*

GLOSSARY OF TERMS

Term	Definition
Adaptation (climate change)	*The term used to describe responses to the effects of climate change. The Intergovernmental Panel on Climate Change (IPCC) defines adaptation as 'adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.' Adaptation can also be thought of as learning how to live with the consequences of climate change.*
Adaptive capacity	*The ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities and to cope with the consequences. (CLIMATE-ADAPT Glossary)*
Adaptive management	*A systematic process for continually improving management policies and practices by learning from the outcomes of previous policies and practices.*
Article 6(3) appropriate assessment	*Article 6(3) of the Habitats Directive requires an appropriate assessment (also referred to as 'Habitats Directive assessment' or 'Natura 2000 assessment') to be carried out where any plans or projects that are not directly linked to the management of that site may have a significant effect on the conservation objectives and would ultimately affect the integrity of the site. Integrity can be defined as the ability of the site to fulfil its function to continue to support protected habitats or species. Annex I to the Habitats Directive includes a full list of protected habitats and Annex II of protected species.*
Baseline	*A description of the present and future state, if the plan or programme (PP) is not implemented, taking into account changes resulting from natural events and from other human activities.*
Biodiversity	*The Convention on Biological Diversity (CBD) defines biological diversity as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems' (Article 2).*
Biodiversity offsets	*Measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimised and/or rehabilitated or restored, in order to achieve 'no-net-loss' or a 'net-gain' of biodiversity. Offsets can take the form of positive management interventions such as restoration of degraded habitat, arrested degradation or averted risk, protecting areas where there is imminent or projected loss of biodiversity.*
Birds Directive	*Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds [codified version], OJ L 20, 26.1.2010, p. 7.*
Carbon sequestration	*The removal of carbon from the atmosphere and its storage in carbon sinks (such as oceans, forests or soils) through physical or biological processes, such as photosynthesis.*
Carbon sink	*An absorber of carbon (usually in the form of CO2). Natural carbon sinks include forests and other ecosystems that absorb carbon, thereby removing it from the atmosphere and offsetting CO2 emissions. (Modified from EEA Glossary)*

Term	Definition
Climate	*Usually defined as the 'average weather', or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities of variables such as temperature, precipitation, and wind, over a period of time. The conventional period of time over which weather is averaged to calculate climate is 30 years, as defined by the World Meteorological Organisation (WMO). (Modified from IPCC)*
Climate change	*The IPCC defines climate change as '...any change in climate over time, whether due to natural variability or as a result of human activity.' The United Nations Framework Convention on Climate Change (UNFCCC) defines it specifically in relation to human influence as: 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.'*
CO2 equivalent	*A metric measure used to compare emissions from various GHGs based upon their global warming potential (GWP). Carbon dioxide equivalents are commonly expressed as 'million metric tonnes of carbon dioxide equivalents (MMTCDE)'.*
Cumulative effects	*The incremental effects of an action PP when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.*
Direct effects	*Environmental effects caused directly by the implementation of a PP.*
Ecosystem services	*The Economics of Ecosystem Services and Biodiversity (TEEB) study defines ecosystem services as: 'the benefits people receive from ecosystems'.* *TEEB also sets out the basis of human dependence on the natural environment. The European-led study builds on the United Nations Millennium Ecosystem Assessment, which defined four categories of ecosystem services that contribute to human wellbeing:* *• provisioning services e.g. wild foods, crops, fresh water and plant-derived medicines;* *• regulating services e.g. filtration of pollutants by wetlands, climate regulation through carbon storage and water cycling, pollination and protection from disasters;* *• cultural services e.g. recreation, spiritual and aesthetic values, education;* *• supporting services e.g. soil formation, photosynthesis and nutrient cycling. (TEEB, 2010)*
Effort Sharing Decision	*A Decision that sets annual binding GHG emission targets for Member States for the 2013-2020 period. These targets concern emissions from sectors not included in the EU Emissions Trading System (ETS) — such as transport, buildings, agriculture and waste. It is part of a package of policies and measures on climate change and energy that will help transform Europe into a low-carbon economy and increase its energy security.*
EIA Directive	*Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment [codification], OJ*

Term	Definition
	L 26, 28.1.2012, p.1. The EIA Directive requires that Member States ensure that, before development consent is given, projects likely to have significant effects on the environment because of their nature, size or location are made subject to an assessment of the environmental effects.
Emission trading scheme and EU Emissions Trading system (EU ETS)	*A market mechanism that allows those bodies (such as countries, companies or manufacturing plants) that emit (release) GHGs into the atmosphere, to buy and sell these emissions (as permits or allowances) amongst themselves. Emissions mean the release of GHGs and/or their precursors into the atmosphere over a set area and period of time. The European Union Emission Trading System (EU ETS) is based on the idea that creating a price for carbon offers the most cost-effective way to achieve the significant cuts in global GHG emissions that are needed to prevent climate change from reaching dangerous levels.*
Environmental report	*Document required by the SEA Directive as part of an environmental assessment, which identifies, describes and evaluates the likely significant effects on the environment of implementing a PP. The SEA Directive states that the environmental report shall mean the part of the plan or programme documentation containing the information required in Article 5 and Annex I.*
European Climate Change Programme	*A programme launched by the European Commission in June 2000. Its goal is to identify and develop all the necessary elements of the EU strategy to implement the Kyoto Protocol.*
Fauna	*The animals of a particular region or habitat.*
Floods Directive	*Directive 2007/60/EC on the assessment and management of flood risks, OJ L288, 6.11.2007, p.27, requires Member States to assess if all water courses and coast lines are at risk from flooding; to map the flood extent and assets and humans at risk in these areas; and to take adequate and coordinated measures to reduce this flood risk. The Directive also reinforces the rights of the public to access this information and to have a say in the planning process.*
Flora	*The plants of a particular region or habitat.*
Green infrastructure	*Green infrastructure serves the interests of both people and nature. It can be defined as a strategically planned and delivered network of high quality green spaces and other environmental features. Green infrastructure includes natural and semi-natural areas, features and green spaces in rural and urban, terrestrial, freshwater, coastal and marine areas. It should be designed and managed as a multifunctional resource capable of delivering a wide range of benefits and services. Areas protected as Natura 2000 sites are at the core of green infrastructure.*
Greenhouse gas (GHG)	*Any atmospheric gas (either natural or anthropogenic in origin) which absorbs thermal radiation emitted by the Earth's surface. This traps heat in the atmosphere and keeps the surface at a warmer temperature than would otherwise be possible.*
Habitats Directive	*Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, as amended, OJ L 206, 22.7.1992, p.7.*
Indirect effects	*Effects that occur away from the immediate location or timing*

Term	Definition
	affected by the implementation of a PP, e.g. quarrying of aggregates elsewhere as a result of implementing new road proposals included in plan or programme (see also secondary effects).
Kyoto Protocol	*The Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC) was adopted in 1997 (Kyoto, Japan). It contains legally binding commitments, in addition to those included in the UNFCCC. Countries included in Annex B of the Protocol (most OECD countries and EITs) agreed to reduce their anthropogenic emissions of GHGs (CO2, CH4, N2O, HFCs, PFCs, and SF6) by at least 5 % below 1990 levels in the commitment period 2008 – 2012.*
Maladaptation	*An action or process that increases vulnerability to climate change-related hazards. Maladaptive actions and processes often include planned development policies and measures that deliver shortterm gains or economic benefits, but increase vulnerability in the medium to long-term.*
Maximum sustainable yield (MSY)	*Maximum sustainable yield (MSY) is the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions.*
Mitigation (climate change)	*A term used to describe the process of reducing GHG emissions that are contributing to climate change. It includes strategies to reduce GHG emissions and enhancing GHG sinks.*
Mitigation (SEA)	*Measures to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the PP. (SEA Directive)*
Natura 2000	*An EU-wide network of nature protection areas established under the Habitats Directive. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive.*
No-net-loss of Biodiversity	*The point where biodiversity gains from targeted conservation activities match the losses of biodiversity due to the impacts of a specific development project, so that there is no net reduction overall in the type, amount and condition (or quality) of biodiversity over space and time. A net gain means that biodiversity gains exceed a specific set of losses. The concept of no-net biodiversity loss lies at the heart of biodiversity offsetting. (Business and Biodiversity Offsets Programme)*
No-regret Measures	*'No-regret' measures are activities that yield benefits even in the absence of climate change. In many locations, the implementation of these actions constitutes a very efficient first step in a longterm adaptation strategy. For example, controlling leakages in water pipes or maintaining drainage channels is almost always considered a very good investment from a cost-benefit analysis perspective, even in absence of climate change. (CLIMATE-ADAPT relevant webpage)*
Precautionary Principle	*Principle adopted by the UN Conference on the Environment and Development (1992) that in order to protect the environment, a precautionary approach should be widely applied, meaning that*

Term	Definition
	where there are threats of serious or irreversible damage to the environment, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation. (EEA Glossary)
Proxy indicator	*Indirect measure that approximates or represents a phenomenon in the absence of a direct measure.*
Residual effects	*The ability of a social or ecological system to absorb disturbances, while retaining the same basic structure and ways of functioning, as well as its capacity to self-organise and adapt to stress and change. There are different ways in which resilience can be framed; the Dutch Climate Changes Spatial Planning research programme provides a list. (Adapted from CLIMATE-ADAPT Glossary). It can be also described as the amount of change a system can undergo without changing state.*
SEA Directive	*Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, OJ L 197, 21.7.2001, p.30. It requires the environmental effects of a broad range of plans and programmes to be assessed so they can be considered while plans are actually being developed, and in due course adopted. The public must also be consulted on the draft plans and the environmental assessment, and their views must be taken into account.*
Secondary effects	*Effects that occur as a consequence of a primary effect or as a result of a complex pathway (see also indirect effects).*
Sensitivity	*The degree to which a system is affected, either adversely or beneficially, by climate-related stimuli. The effect may be direct (e.g. a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g. damages caused by an increase in the frequency of coastal flooding due to sea level rise).*
Significant effects	*Effects that are significant in the context of the PP, i.e. a function not just of magnitude or size of effect, but of nature, sensitivity and scale of the receptor.*
Synergistic effects	*Effects that interact to produce a total effect greater (or less than) than the sum of the individual effects. Cumulative effects that result when the interaction of a number of impacts is greater than the sum of the individual impacts.*
Vulnerability	*The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate chane, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity. (CLIMATE-ADAPT Glossary)*

1 Introduction

1.1 Presentation of the Programme's Title-Holder

The Managing Authority of the Romania-Bulgaria Cross-Border Cooperation (RO-BG CBC) Programme 2014-2020 is the Ministry of Regional Development and Public Administration of Romania. The National Authority is the Ministry of Regional Development of Bulgaria. Contact details are listed in Table 1-1.

Table 1-1: Key Programme Authorities

Function	Contact Details
Managing Authority	**Ministry of Regional Development and Public Administration** Address: 17 Apolodor Street, Sector 5, 050741 Bucharest, Romania; www.mdrap.ro; www.cbcromaniabulgaria.eu Head of the Managing Authority: Mrs. Iulia HERTOG Contacts: 1. Ioana Glavan, head of unit 2. Ana Varnaiote, public manager 3. Simona Vatafu, public manager 4. Mihaela Piroi, councilor 5. Marcela Glodeanu, public manager 6. Valentina Visan, councilor 7. Anca Simion, councilor Phone: +40 372 111 339 ; Fax: 004 0372 111 456 E-mails: robg@mdrap.ro; ioana.glavan@mdrap.ro; ana.varnaiote@mdrap.ro; simona.vatafu@mdrap.ro; mihaela.piroi@mdrap.ro; marcela.glodeanu@mdrap.ro; valentina.visan@mdrap.ro; anca.simion@mdrap.ro
National Authority	**Ministry of Regional Development** Address: 1202 Sofia, 17-19 Kiril and Metodiy str., Bulgaria www.mrrb.government.bg Contacts: 1. Dimana Sadonkova, Deputy Director General, Governance of Territorial Cooperation General Directorate Phone: +359 9405 673; e-mail: DSadonkova@mrrb.government.bg 2. Milen Obretenov, Head of Department, Governance of Territorial Cooperation General Directorate Phone: +359 9405 592; e-mail: MObretenov@mrrb.government.bg
Adopting Authority	**European Commission** DG REGIO; DG ENVIRONMENT

1.2 Background of Programme's Development

The overall programme strategy has been formulated in direct response to the EU 2020 Strategy of smart, sustainable and inclusive growth. Within the EU 2020 Strategy, the EU has set ambitious objectives to be reached by 2020 in five main areas:

- Employment: 75% of the 20-64 year-olds to be employed
- Research and development: 3% of the EU's GDP to be invested in R&D
- Climate change and energy sustainability: greenhouse gas emissions 20% (or even 30%, if the conditions are right) lower than 1990; 20% of energy from renewables, 20% increase in energy efficiency
- Education: Reducing the rates of early school leavers below 10% and at least 40% of 30-34–year- olds completing third level education
- Fighting poverty and social exclusion: at least 20 million fewer people in or at risk of poverty and social exclusion

In this framework, the Romania-Bulgaria Cross-Border Cooperation Programme 2014-2020 aims to expand the regions' horizons, building on concrete outcomes and enabling the area to be a region to live, study, work, visit and invest in. The programme must sustain the process of creating competitive and sustainable communities, by harnessing innovation and seizing, in a resource efficient way, the unique growth initiatives and opportunities based on the development of transversal and horizontal flows on the area's backbone, the Danube/Black Sea corridor.

Therefore, according to the EU "Common Strategic Framework", five Thematic Objectives have been selected, amongst the eleven Thematic Objectives (TOs) corresponding to the priorities of the Europe 2020 Strategy, in order to address the identified key challenges and needs.

For each thematic objective, specific investment priorities (IP) have been selected amongst the pre-defined ones. The cornerstones for the selection of the Thematic Objectives and Investment Priorities were:

- The results of the Territorial Analysis of the Cross Border area
- The lessons learnt from the period 2007-2013
- The complementarity with other EU national, regional and transnational programmes
- The specificities of cross border cooperation programmes according to the Regulation (eu) No 1299/2013

The RO-BG Programme strategy builds on five TOs that are in line with issues identified as being most suitable to be tackled by cross border cooperation:

- **Thematic objective 5: Promoting climate change adaptation, risk prevention and management.**
- **Thematic objective 6: Preserving and protecting the environment and promoting resource efficiency**
- **Thematic objective 7: Promoting sustainable transport and removing bottlenecks in key network infrastructures**
- **Thematic objective 8: Promoting sustanaible and quality employment and supporting labour mobility**
- **Thematic objective 11: Enhancing institutional capacity of public authorities and stakeholders and efficient public administration through actions to strengthen the institutional capacity and the efficiency of public administrations and public services related to the implementation of the ERDF, and in support of actions under the ESF to strengthen the institutional capacity and the efficiency of public administration.**

The selected Thematic Objectives (TOs) have been translated into five priority axes, where Investments Priorities (IPs) were identified, which reflect the needs and challenges as identified in the analysis of the situation of the programme area. For each IP one or two specific objectives (SO) were defined. Both the IPs and SO are detailed in Item 2.2 below.

1.3 Methodology and Legal Framework

1.1.1 Environmental Policy and Objectives

The objectives of environmental protection at the international/ Community level are reflected in the international Conventions and EU policies on environment and sustainable development. The SEA report reviews the objectives of environmental protection at international level related to the 2014-2020 RO-BG CBC Programme and the way those objectives and any environmental considerations have been taken into account during the preparation of programme.

The key environmental protection objectives at **international / Community level** include those outlined in key strategies, programs and plans, such us: Strategy "Europe 2020", EU Biodiversity Strategy to 2020, EU White Paper on adapting to climate change, etc.

Environmental protection objectives at national level for both Romania and Bulgaria are also selected, as appropriate, and taken into account for the completion of both SEA and CBC programme.

For Romania, the National Sustainable Development Strategy 2013-2020-2030, together with other strategic programming documents regarding environmental protection, such us: National Strategy on Biodiversity 2013 – 2020, National Strategy on Climate Change 2013 – 2020, etc. are taken into account, as appropriate, for the selection of the environmental protection objectives established at national level, which are relevant to the programme.

For Bulgaria, the National Regional Development Strategy 2012 – 2022, together with other documents such as the District Strategy for Regional Development 2014-2020, the Programme for the Development of Rural Areas 2014 – 2020, the National Concept for spatial development for the period 2013 – 2025 are the leading strategic and programming documents, which specify the objectives of development policies of the country for the forthcoming period. National strategy for the protection of the biodiversity, Energy Strategy of Bulgaria to 2020, and other strategic documents listed in details below have also been considered in the SEA analysis of the programme compliance with the national commitments. The SEA report analyses the compliance of the provisions of the 2014-2020 RO-BG CBC Programme against the objectives of these documents, as well as with many other plans and programmes, identified in the scoping stage. The applicable national legislation with relevance to the Programme assessment has also been complied with.

1.1.2 Legislative Framework for SEA

The SEA is developed in accordance with the provisions of 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 (SEA Directive), as transposed into national legislations by Romania and Bulgaria.

In addition, the SEA complies with the following documents:

- EC Guidance on the implementation of the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment;
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and wild fauna and flora, as subsequently amended;
- Assessment of plans and projects significantly affecting Natura 2000 sites – 2002, Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC;

- Manual on SEA for cohesion policy 2007-2013" (SEA Handbook) – January 2006, "Greening Regional Development Programmes" Network;
- Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment – EU, 2013;
- Convention on environmental impact assessment in a transboundary context (EIA Convention), adopted in Espoo, Finland on 25 February 1991, ratified by Romania by Law no. 22 of 22 February 2001 and ratified in Bulgaria by a Law (SG. 86/ 1999);
- Protocol on Strategic Environmental Assessment to the Convention on environmental impact assessment in a transboundary context, adopted in Kiev, Ukraine, on 21 May 2003, ratified by Romania by Law no. 349 of 18 November 2009 and ratified in Bulgaria by a Law (SG, 97/ 2006).
- Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive). This Directive has been transposed in the national legislation of Romania and Bulgaria and national strategies for the protection of marine environment will be developed and implemented to meet its requirements.

National specific legislation, manuals and guidelines developed by Romania and Bulgaria are also taken into account. The list of key documents related to the SEA process is presented in boxes 1 & 2.

Box 1: Key Legal Framework – Romania

Romanian Legal Framework and Relevant Documents Related to SEA Process

- Environmental Protection Law – *promulgated by Government Emergency Ordinance (GEO) no. 195/2005, approved and modified by Law no. 265/2006 and further modified by GEOs nos. 57/2007; 114/2007 and 164/2008;*
- Legislation regarding the regime of natural protected areas, conservation of natural habitats and wild flora and fauna (transposing Directive 92/43/EEC, with its amendments) – promulgated by *Government Emergency Ordinance (GEO) no. 57/2007, approved and modified by Law no. 49/2011;*
- Methodological Guideline on the appropriate assessment of potential effects from plans/programmes and projects on the natural protected areas of Community interest – approved by the Ministerial Order no. 19/2010;
- Government Decision no. 1076/2004 regarding the procedure for undertaking the environmental assessment (SEA) for plans and programmes (transposing Directive 2001/42/EC);
- "Manual on the completion of the environmental assessment for plans and programmes" – 2006, approved by Ministerial Order no. 117/2006.
- "Generic Guidance for Strategic Environmental Assessment" – 2007, completed by Ramboll Consortium team within the project "Strengthening institutional capacity for implementing and enforcing SEA and Reporting Directives" - EuropeAid/121491/D/SER/RO (PHARE 2004/016 – 772.03.03);
- Guidelines on Strategic Environmental Assessment for the sectors: land use planning; transport and energy – 2007, completed by Ramboll Consortium team within the project "Strengthening institutional capacity for implementing and enforcing SEA and Reporting Directives" - EuropeAid/121491/D/SER/RO (PHARE 2004/016 – 772.03.03).

Box 2: Key Legal Framework – Bulgaria

Bulgarian Legal Framework and Relevant Documents Related to SEA Process

- "Manual for Environmental Assessment of Plans and Programmes in Bulgaria", 2002, elaborated by Consortium with participation of POVVIK OOS and with the collaboration of and under the editing of Ministry of Environment and Water, Bulgaria.;
- Environmental Protection Act (EPA) - promulgated in SG, issue 91/2002, last amended in SG 66/ 2013;
- Ordinance for the conditions and order for preparation Environmental Assessments of plans and programmes (EA Ordinance) – promulgated in SG, issue 57/ 2004, last amended in SG 94/2012;
- Biological Diversity Act (BDA) – promulgated in SG, issue 77 /2002, last amended in SG 66/ 2013;
- Water Act – promulgated in SG issue 67/1999, last amended in SG 26/2014;
- Ordinance for the conditions and order for performance of appropriate assessment of plans, progammes, projects and investment proposals with the subject and aims of preservation of the protection sites (AA Ordinance) - promulgated in SG, issue 73 /2007, last amended in SG 94/ 2012.

1.1.3 Methodological approach

In line with Article 5(4) of SEA Directive 2001/42 EC, scoping process was undertaken to decide on the scope and level of detail of the information which must be included in the Environmental Report. Correspondingly, a draft Scoping Report was developed and consulted with relevant authorities. All the recommendations and comments received are integrated in the revised (final) Scoping Report and taken into consideration in this Environmental Report.

Methods and techniques envisaged for the environmental assessment and for the environmental report's completion are those specified in the guidance documents and manuals listed in the previous section, and particularly in the following documents:

- Manual on SEA for cohesion policy 2007-2013" (SEA Handbook) – January 2006, "Greening Regional Development Programmes" Network;
- Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment – EU, 2013;

To enable the identification of interactions between the Programme and the environment, the SEA includes a review of the existing conditions (baseline) of environmental components and factors and assesses these against the Programme objectives.

The SEA report analyzes and assesses the likely significant environmental impacts, including secondary, cumulative, synergistic, short-term, medium and long-term, permanent and temporary, positive and negative effects of the activities under the priority axes of the 2014-2020 RO-BG CBC Programme, which are discussed in separate components (biodiversity, soil, water, air, etc.)

To enhance the environmental quality of the Programme document, recommendations on how to enhance the environmental impact of the Programme are given to the programming team based on the SEA analysis, including measures to prevent, reduce and offset adverse effects. Alternatives are also considered, including the zero-option, which is defined as the "baseline" for the overall assessment process.

1.1.4 Method of environmental assessment

The SEA evaluates possible environmental impacts related to priorities of the 2014-2020 CBC Programme Romania – Bulgaria and gives recommendations on how to enhance the quality of the Programme in respect to environmental aspects.

The development of the environmental issues and guiding questions/indicators in case that the Programme will not be implemented will create a "zero"-option which is defined as the "baseline" for the overall assessment process.

The assessment of positive and negative effects of the different Programme priorities and objectives is summarized in a **rating matrix** using the following scale:

Table 1-2: Rating matrix

+	Positive impact on the subject of protection expected
0/+	Tends to result in a positive impact on the subject of protection
/	No or negligible impact expected
0	In total no or negligible impact expected as positive and negative impacts cancel each other out
0/-	Tends to result in a negative impact on the subject of protection
-	Negative impact on the subject of protection expected
=	Impact on the subject of protection expected, but due to the degree of abstraction of the Programme an assessment of the impact is not possible

The rating matrix considers programme priorities and activity fields like illustrated below by way of example:

Table 1-3: Use of the table matrix (example)

Subject of Protection	Indicator	P1		P2		P3			P4	
		1.1	1.2	2.1	2.2	3.1	3.2	3.3	4.1	4.2
xxx	xxxx	0/+	+	0/+	/	/	/	/	/	/

In addition to this matrix, a qualitative description of possible positive or negative effects which are induced by the Programme priorities and sub-priorities is carried out, as well as proposed necessary mitigation measures. Direct and indirect, as well as cumulative impacts are assessed. Basis for the assessment is the expert knowledge of the project team.

The level of detail of the assessment is based on the level of detail the Programme provides.

Following a review of the measures outlined in the 2014-2020 RO-BG CBC Programme, the SEA Report measures the expected effects against the objectives of environmental protection. Additional measures are developed to prevent, reduce and as fully as possible offset any significant adverse effects on the environment resulting from the implementation of the 2014-2020 RO-BG CBC Programme, as well as to prevent or reduce the likely negative health effects. Further, measures required for the monitoring of the implementation of the 2014-2020 RO-BG CBC Programme are outlined.

2 Description of Romania - Bulgaria CBC Programme 2014-2020

2.1 Contents of the Programme

2.1.1 Introduction

First draft of the Programme was submitted to the SEA team on 01-Apr-2014 and final draft on 08-Jul-2014 respectively.

Table 2-1: Key Data

Item	Description
Sector	Regional development/ European territorial cooperation
Area likely to be affected	Around 69 285 km^2, of which 56.75 % belongs to Romania (39 320 km^2) and 43.25% to Bulgaria (29 965 km^2).
Population	5 million inhabitants.

2.1.2 Eligible geographic area

The eligible area of the Romania-Bulgaria Cross-Border Cooperation Programme includes 15 administrative units (NUTS III level) belonging to 6 regions (NUTS II level), as follows:

- in Romania (Counties): Mehedinti, Dolj, Olt, Teleorman, Giurgiu, Călărași, Constanța[1] and
- in Bulgaria (Districts): Vidin, Vraca, Montana, Pleven, Veliko Tarnovo, Ruse, Silistra, Dobrich[2]

2.1.3 Relevant period of time

The considered period of time for which positive and negative effects will be assessed is the programming period 2014-2020 plus three years, until the relevant projects will be completed: the relevant period of time therefore is 2014-2023.

2.2 Main objectives of the Programme

Thematic Objective (TO) 5: Promoting climate change adaptation, risk prevention and management.

Thematic Objective (TO) 6: Preserving and protecting the environment and promoting resource efficiency

Thematic Objective (TO) 7: Promoting sustainable transport and removing bottlenecks in key network infrastructures

Thematic Objective (TO) 8: Promoting sustanaible and quality employment and supporting labour mobility

[1] Mehedinti, Dolj and Olt counties belonging to Development Region South-West Oltenia; Teleorman, Giurgiu and Calarasi counties belonging to Development Region South Muntenia; Constanta county belonging to Developing Region South Est;
[2] Vidin, Vratza, Montana and Pleven districts belonging to North-West Planning Region; Veliko Turnovo, Ruse and Silistra districts belonging to Central-North Planning Region; Dobrich district belonging to North-West Planning Region.

Thematic Objective (TO) 11: Enhancing institutional capacity of public authorities and stakeholders and efficient public administration.

The objective of the Romania-Bulgaria Cross-Border Cooperation Programme 2014-2020 is to contribute to the area's integrated development thus contributing to the territorial cohesion across the Union. The priority axes, identified to this end, together with Investment Priorities and Specific Objectives, as listed in the Programme Final Draft of 08.07.2014, are as follows:

Priority Axis 1: A well connected region

Priority Axis 1 coresponds to TO 7: "Promoting sustainable transport and removing bottlenecks in key network infrastructures" from the Thematic Objectives defined through the EU Regulation 1301/2014, Art. 5. Within this Priority Axis, two Investment Prorities are selected: IP 7b and IP 7c and the Specific Objectives SO 1.1 and So 1.2, respectively were defined.

- **IP 7b: enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure, including multimodal nodes**

  SO 1.1: Improve the planning, development and coordination of cross border transport systems for better connections to TEN-T transport network

- **IP 7c: Developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility**

  SO 1.2: Increased transport safety on waterways and maritime transport routes

Priority axis 2: A green region

Priority Axis 2 coresponds to TO 6: "Preserving and protecting the environment and promoting resource efficiency" from the Thematic Objectives defined through the EU Regulation 1301/2014, Art. 5. Within this Priority Axis, two Investment Prorities are selected: IP 6c and IP 6d and the Specific Objectives SO 2.1 and So 2.2 respectively, were defined.

- **IP 6c: Conserving, protecting, promoting and developing natural and cultural heritage**

  SO 2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage

- **IP 6d: Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure**

  SO 2.2: To enhance the sustainable management of the ecosystems from the cross-border area

Priority axis 3: A safe region

Priority Axis 3 coresponds to TO 5 "Promoting climate change adaptation, risk prevention and management" from the Thematic Objectives defined through the EU Regulation 1301/2014, Art. 5. Within this Priority Axis, one Investment Prorities was selected: IP 5b and IP 6d and the Specific Objective SO 3.1 was defined.

- **IP 5b: Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems.**

  SO 3.1: To improve joint risk management in the cross-border area

Priority axis 4: A skilled and inclusive region

Priority Axis 4 coresponds to TO 8: "Promoting sustainable and quality employment and supporting labour mobility" from the Thematic Objectives defined through the EU Regulation 1301/2014, Art. 5. Within this Priority Axis, one Investment Prorities was selected: PI-8 (CTE[3]–i), and the Specific Objective SO 4.1 was defined.

- **IP 8i: Promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training**

  SO 4.1: To encourage the integration of the cross-border area in terms of employment and labour mobility

Priority axis 5: An efficient region

Priority Axis 5 coresponds to TO 11 "Enhancing institutional capacity of public authorities and stakeholders and efficient public administration through actions to strengthen the institutional capacity and the efficiency of public administrations and public services related to the implementation of the ERDF" from the Thematic Objectives defined through the EU Regulation 1301/2014, Art. 5. Within this Priority Axis, one Investment Prorities was selected: PI-11 (CTE[4]–iv) and the Specific Objective SO 5.1 was defined.

- **IP 11iv: Enhancing institutional capacity of public authorities and stakeholders and efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions**

  SO 5.1: To increase cooperation capacity and the efficiency of public institutions in a CBC context

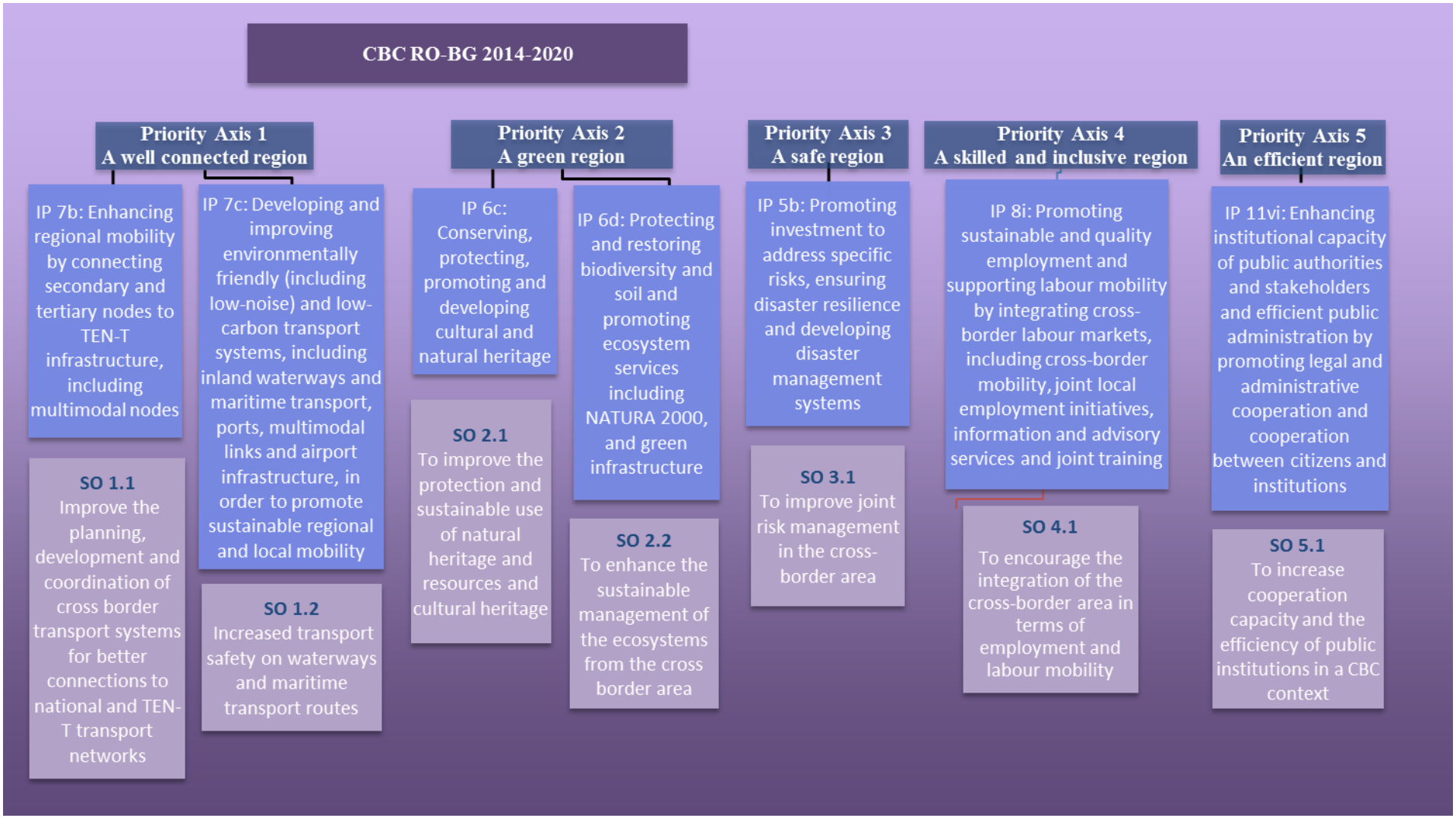
Graphic illustration of these Priority Axes, Investment Priorities and Specific Objectives is provided in Figure 1-1 below.

A priority axis dedicated to the technical assistance is also included in the programme. The Technical assistance will ensure the good management and implementation of the programme. The technical assistance will finance on one hand actions that enhance the capacity of applicants and beneficiaries to apply for and to use the programme funds and on the other hand, actions that improve the administrative procedures while ensuring a proper verification of project outputs and results under the quantitative and qualitative point of view. The activities implemented under this priority axis will have no impact on the environment, thus this priority axis shall not be analyzed in the following sections.

[3] According to the EU Regulation 1299/2014, Art. 7 (1)-(a/i).

[4] According to the EU Regulation 1299/2014, Art. 7 (1)-(a/iv).

Figure 1-1: Priority Axes, Investment Priorities and Specific Objectives of the Programme



2.3 Indicative actions/ measures under the Priority Axes

2.3.1 Actions under Priority Axis 1: A well connected region

Specific Objective 1.1: Improve the planning, development and coordination of cross border transport systems for better connections to TEN-T transport network

The support given through this specific objective contributes to the development of the cross-border transport system and to implement joint solutions and institutional, policy and legal framework mandatory for the emergence and development of a transport-integrated and/or "mobility friendly" cross-border area.

"Soft" measures and "hard" measures are eligible within the limit of the CBC Programme's budget allotted to this Specific Objective as they both answer to the need of an enhancing access to TEN-T transport network. All the "soft" activities financed under this Specific Objective (development and implementation of strategies, exchanges of knowledge, tools and pilot applications for improved cross-border mobility and accessibility, etc.) are expected to be clear steps towards direct investments in the accessibility of the cross-border area, in coherence with both national investment transport masterplans/strategies and cross-border accessibility challenges and needs.

Taking into consideration the socio-economic situation of the cross-border area as well as the needs to ensure increased workforce mobility (pursued as a distinct objective by the priority axis 4), the cross-border accessibility will be understood as a "public service". The enhancement of cross border public transport will thus benefit of special attention in any activity financed under this specific objective.

Indicative actions that will be supported under this specific objective:

Soft measures:

1. Developing cross-border/joint action-based solutions, management plans, strategies, feasibility studies, environment impact assessments etc., related to works projects for public infrastructure (waterways, roads etc.) in order to connect secondary and tertiary nodes to TEN-T infrastructure and to reduce transportation time and optimising logistics;
2. Developing co-ordinated concepts, standards and tools on the cross-border level for improved mobility services in the public interest (e.g. for disadvantaged groups, for shrinking regions);
3. Facilitating active cooperation among the providers of traffic and travel information and value added services in order to improve the local public transport in the cross-border area and the connection between twin cities (e.g., harmonisation of timetables, provision of bilingual information on cross-border timetables, operating cross-border transport public services especially between twin cities);
4. Exchanging experience and knowledge, including raising awareness (trainings, seminars, and workshops) in the field of traffic safety measures in the cross-border area (e.g., improved traffic network configurations, introduction of traffic calming measures, utilisation of roundabouts, speed cameras, safety barriers, and speed bumps, improvement of poor road surfaces to avoid e.g. wet-weather crashes, retro-reflective marking materials).

Hard measures:

5. Improving the cross-border secondary and tertiary nodes connections to TEN-T infrastructure (e.g., improve/build bicycle routes, bicycle-sheds, construction and modernization of road infrastructure)

Integrated measures:

6. Setting up of joint traffic management for smart mobility in the cross-border area (e.g., route guidance, incidents/emergencies detection and management, studies on traffic flows, traffic safety measures, black-spot maps)

Main target groups

The target groups are diverse and correspond to all the transport and mobility stakeholders groups in the cross-border area who would benefit from the improved connections to national and TEN-T transport networks: from different population groups (local commuters, business and leisure tourists, business owners, etc.) to national or county/district administrations in charge of infrastructure planning, public transport operators and private companies whose activities are heavily dependent on the accessibility of the cross-border territory. Also, the entire population of the eligible area shall benefit from these investments since an improved accessibility creates the mandatory premises for development.

Common and programme specific output indicators

- Total length of reconstructed or upgraded roads
- Number of joint mechanisms (e.g. route guidance, incidents/ emergencies detection and management, studies on traffic flows, feasibility studies addressing cross-border transport issues, traffic safety measures, black-spot maps, awareness raising activities); to facilitate the connection of secondary/tertiary nodes to TEN-T infrastructure

Specific Objective 1.2: Increased transport safety on waterways and maritime transport routes

The actions that will be financed by the SO 1.2 will seek to foster cross-border coordination in order to increase Danube navigation safety for freight and passenger traffic in the cross border area in order to transform the programming region in a strategic "Danube/Black Sea gateway" that will attract investments in various economic fields. This will be done by supporting port infrastructure renovation and development and measures for the improvement of the Danube navigability that is impeded by sediments, shifting river bed, variation of the water level and debit, bank erosion, seasonal water-level variation. The objectives will be achieved through the development and implementation of coordinated strategies, concepts and infrastructure and equipment for enhancing navigability and for the rehabilitation the port-infrastructures (in order to enable the access of the hinterland to the Danube and the access from the Danube to the resources and attractions of the cross-border hinterland), strengthening the multimodality in the ports and harmonizing standards and procedures (for crossing the Danube, navigation on both national sectors, managing freight traffic, enabling tourism on the river banks and on the river, etc.). Actions are further contributing to the improvement and testing of freight transport services and logistics planning, including pilot applications, which are supposed to trigger investments in the field.

In order to increase the freight and passenger traffic on the Danube, improving the mere navigability will not be sufficient. This is why the supported actions will include measures for the Black Sea ports and the navigability on the Black Sea coast that is inside the cross-border area, as the main transport corridor generating and giving economic relevance to the Danube.

Indicative actions that will be supported under this specific objective:

Soft measures:

1. Raising awareness regarding the importance of developing and improving environment-friendly transport systems in the cross-border area;

2. Exchanging experience, joint seminars, study visits, surveys and trainings leading to implementation of new methods in order to maintain the navigability of the Danube/Black Sea during winter as well.

Hard measures:

3. Investing (infrastructure and equipment) in improved freight and passenger river and sea transport on cross-border level;

Integrated measures:

4. Developing integrated plans and measures in order to improve the navigation conditions for the common sector of the Danube in the cross-border area (e.g., joint feasibility studies, engineering planning documents, morphological and hydrodynamic studies in establishing the sediment accumulation conditions, etc. on river regulation works, unify the reference system used in Romania and Bulgaria on the Danube and introduce the River Information system);
5. Developing and implementing joint co-ordinated strategies, tools and pilot applications to improve the development of multimodal nodes and port services;

Main target groups

The great diversity of the target groups of the measures supported under this objective include both the public and the private sectors: providers and operators of freight and passenger transport, logistics services (e.g. railway enterprises, shipping companies, ports, terminal operators, logistic service providers/logistic centers and platforms), institutions in charge of planning and managing freight and passenger transport, public infrastructure providers, fluvial transport associations and, in general, all the public and private stakeholders that can benefit from the increased transport activity on the Danube and the Black Sea.

The common and programme specific output indicator for these actions is:

- Number of studies, strategies and action plans to improve safety of the navigation on the Danube and the Black Sea supported

2.3.2 Actions under Priority Axis 2: A green region

Specific Objective 2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage

The actions that are foreseen to be supported under this specific objective will strengthen the capacities of relevant actors to restore, preserve and sustainably use the cultural and natural heritage of the Romania-Bulgaria cross-border area. The main emphasis will be on the joint management and coordination approaches that will ensure the decrease of the current pressure and avoid future usage conflicts. An important instrument for this will be the strong support of the Programme for the development of common tools and technologies for the management of natural and cultural heritage areas and sites affected either by local pressures or by climate change.

Sustainable management of natural and cultural heritage will be reinforced by both the joint approaches that will require each national partner to streamline its procedures and the tourism-based approach that will make mandatory the local economic relevance of protection and preservation and raise the local community's awareness on the importance of heritage preservation for its own livelihood.

Some indicative activities:

Soft measures:

1. Preparing joint studies, strategies, management plans etc. in the field of common preservation, development and utilisation of cultural/natural heritage
2. Raising awareness regarding the protection, promotion and development of natural and cultural heritage
3. Preserving, promoting and developing the intangible cultural heritage, mainly through cultural events with a cross-border dimension

Hard measures:

4. Supporting the promotion and utilisation of cultural/natural heritage potential by investments in joint and sustainable touristic infrastructure
5. Modernizing/constructing roads to natural and cultural heritage interest points that will be part of a cross-border tourism product
6. Reconstructing cultural infrastructure, recovery and promotion of cultural monuments based on relevant cross-border strategies/concepts

Integrated measures:

7. Developing common tourism products and services based on the natural and cultural heritage and joint promotion
8. Developing coordinated management of natural parks, nature reserves and other protected areas

Main target groups

Even though the target group is a very large one, including the residents of the cross-border area and the visitors (tourists), some specific groups will constitute the main focus of the activities indicated above. They are the main groups active in drafting and implementing policies in the cultural and natural heritage sector: public administrations relevant for the environment and cultural protection sectors, associations involved in the protection and valorisation of heritage and local communities living in contact with the heritage assets.

The common and programme specific output indicators for these actions are:

- Increase in expected number of visits to supported sites of cultural and natural heritage and attraction
- Number of integrated tourism products/services created
- Number of common strategies, policies or management plans for valorising (including raising awareness) the cultural and natural heritage through its restoration and promotion for sustainable economic uses

Specific Objective 2.2: To enhance the sustainable management of the ecosystems from the cross-border area

Cross-border cooperation in the field of NATURA 2000 sites protection can bring added value as many of these sites are closely connected over the border. The cooperation of cross-border diverse stakeholders in the field of environment protection and biodiversity promotion can better address the key issue of ecosystems connectivity in a region where the frontier encompasses such major natural elements as the Danube River and the Black Sea coast.

The actions that will be supported under this specific objective will make use of the cross-border cooperation in order to ensure that administrative and national boundaries do not become barriers for the ecosystem protection and that management of protected sites (especially NATURA 2000) can be more effective through flexible and adaptive cross-border cooperation. The joint development, testing (pilot actions) and implementation of innovative tools and mechanisms for the protection of NATURA 2000 sites and the reconnection of ecosystems in the cross-border area will be supported by the Programme.

This will seek to ensure a better cross-border protection of the ecosystems, in an area where the local awareness on nature protection is limited and the management of resulting anthropic pressures is very difficult.

All the supported actions seek to strengthen the environmental management capacities in the Romania-Bulgaria cross-border area:

Soft measures:

1. Coordinating actions and exchanging information to reinforce the implementation of relevant policies (Water Framework Directive), and biodiversity conservation (Habitat Directive and Birds Directive), organise knowledge transfer, exchange of good practice examples, networking and development of innovations on protecting/preserving ecosystems
2. Protecting ecosystems using classification, mapping and spatial planning and other structural cooperative measures in the field of nature and landscape protection
3. Preparing and implementing joint researches, studies, strategies, plans related to NATURA 2000 sites
4. Raising awareness for the general public by acknowledging and promoting the potentials related to NATURA 2000 sites
5. Joint designation and management of protected sites and species of the NATURA 2000 network

Hard measures:

6. Supporting and promoting cross-border investments regarding the green infrastructure (e.g. urban tree canopy, corridors connecting habitats)
7. Protecting/ preserving/ monitoring the ecosystems, especially in NATURA 2000 sites by purchasing the necessary equipment.
8. Creating/reinforcing cross-border coordinated infrastructure that protects/ restores biodiversity/ soil/promotes ecosystem services, including through NATURA 2000

Main target groups

The target groups are representing virtually all stakeholders involved in the protection of cross-border environment and the promotion of ecosystem services, from public administrations to private companies registered or working in the areas and from NGOs to the resident or visiting citizens.

Common and programme specific output indicator

- Surface area of habitats supported to attain a better conservation status (ha) (COI)

2.3.3 Actions under Priority Axis 3: A safe region

Specific Objective 3.1: To improve joint risk management in the cross-border area

The supported actions will use the cross-border cooperation framework to contribute to higher disaster resilience and higher mitigation capacity regarding the impacts of the climate change. The supported actions focus on both the joint planning and joint implementation of measures to monitor, prevent and mitigate the disaster risks. The cooperation in this field is essential as the geography of the cross-border area and the associated disaster risks (big river floods and landslides, heat waves and fires, earthquakes and industrial disaster risk) indicates a clear added-value in tackling together both the planning and the implementation of mitigation and disaster resilience measures.

Some examples of actions that are supported under this specific objective:

Soft measures:

1. Increasing co-ordination and efficient reactions of the authorities in the emergency situations caused by natural disasters (flood, fire, heat waves, earthquakes, storms), as well as setting up common rules/legislation on deforesting and construction in the areas affected by natural and anthropic hazards
2. Setting-up and integrating harmonized standards and systems for better forecasting and managing natural and anthropic hazards in the CBC area (flood, earthquake, fire, storms), including preparing/updating hazard maps and ecosystem-based solutions(for floodplains, wetland preservation, forest management)
3. Setting up of harmonised integrated tools for risk prevention and mitigation (including detection, early warning and alert systems, risk mapping and assessment) - creation of joint structures for urgent, unexpected situations (including highly specialized response units/civil protection modules), and development of small-scale regional level cross-border infrastructure in the field of emergency preparedness (e.g. transport accidents, disasters, etc.), including in cases of weather-related risks (such as storms, extreme temperature events, forest fires, droughts, floods) and geophysical risks (such as landslides, earthquakes).
4. Elaborating of joint detailed maps and data bases indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services;
5. Exchanging experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the cross-border area (including training and learning programmes, community-based training initiatives, bilingual maps, information sheets, brochures about natural and anthropic hazards) targeted at specific target groups (children/youth, development planners, emergency managers, local government officials, etc.)

   Hard mesures:

6. Land improving for regions with high and medium hazard risk level (including: sanitation and reforestation of river banks, building flood and coastal defence (dikes, reservoirs), forestation/reforestation of non-permanent vulnerable land to torrential formations, reducing desertification tendencies and high drought risks, replanting floodplain forests)
7. Supporting and promoting cross-border investments into the green infrastructure that helps reduce the risk and mitigate disasters (like systems for rainwater harvesting, reforestation)

   Integrated measures:

8. Measuring/monitoring environmental parameters that are important for early warning and effective mitigation measures (e.g. emission levels, water purity, analysis of soil and water samples etc.), through the purchasing of common equipment and joint assessment of results;

Main target groups

The main target groups of this measure are the decision makers at national, regional, county and local level in the area of disaster risk and emergency, the general resident population of the cross-border area and the institutions that are legally in charge of monitoring, assessing and addressing hazards, disaster risk and emergency.

Common and programme specific output indicators

- Population benefiting from actions of risk management
- Population benefiting from flood protection measures
- Population benefiting from forest fire protection measures
- Number of joint partnerships in the field of joint early warning and emergency response

2.3.4 Actions under Priority Axis 4: A skilled and inclusive region

Specific Objective 4.1: To encourage the integration of the cross-border area in terms of employment and labour mobility

The actions that will be supported under this specific objective seek to foster the development of a more integrated labour market in the cross border area. This will mainly be done through training and support mechanisms that have an empowerment and facilitating role for the labour force in the cross-border area.

Seeking to make the workforce seize cross-border jobs and entrepreneurship opportunities, the support will be concentrated around two main aspects: the provision of skills adapted to the cross-border economic resources and potential (for unleashing genuinely endogenous and sustainable economic potential, especially in areas where new SMEs and entrepreneurship can be developed) and the support to cross-border mobility enabling measures (language teaching, infrastructure and transport for border crossing, etc.).

All the actions that will be supported will contribute to improve the integration of cross-border labour markets and to enhance linkages between entrepreneurs on both sides of the border.

Examples of actions that will be supported:

Soft measures:

1. anticipating long-term employment opportunities created on both sides of the border by structural shifts in the labour market and developing services in the fields of lifelong guidance and lifelong learning to foster career transitions
2. developing joint strategies, plans, and studies related to the cross-border mobility and to identify the key branches that can activate workforce mobility
3. collaborating in offering services to employers and establishing partnerships with education institutes and other employment services to organise flexible, preventive and efficient service delivery
4. providing comprehensive and official information on social security, employment legislation and tax issues both in Romanian and Bulgarian border regions through regular training sessions and courses in relevant legal regulations to decrease the doubts of proper administrative units and employers concerning the manner of interpretation and application of specific regulations
5. developing and providing joint special programs in vocational training in sectors which lack specific skills
6. joint training and support, exchanges of good practices for a better integration in the labour market
7. raising awareness on employment opportunities throughout the CBC area
8. providing special language courses for mobile employees and people looking for work, which would potentially increase their chances to find employment in the eligible area.

Hard measures:

9. creating/developing infrastructure directly linked to increase labour mobility

Integrated measures:

10. developing joint strategies and measures for a better inclusion in the labour market of the disadvantaged categories of population

11. developing information and advice for cross-border commuters and potential employers by creating and developing joint databases in service of labour mobility
12. providing integrated support tailored to the needs of jobseekers on both sides of the border while extending service provision to job changers and supporting the inactive back to work
13. creating and developing cross border business incubators and virtual incubators for promoting employment of staff from both side of the border (companies based on local assets and local service needs such as innovative heritage tourism, nautical and water tourism and ecotourism products located in the region)

Main target groups

The main target groups of this axis will be the inactive working-age persons and the potential and active entrepreneurs of the cross-border area. Nevertheless the above working-age persons and the youth will also be targeted as they are very important for ensuring cohesive local communities (active ageing, lower dependency rates and increased revenues) and a future skilled and well-adapted workforce.

An important emphasis will also be made on the women and on the persons belonging to disadvantaged groups (ethnic minorities, disabled persons, etc.) in order to increase their employability and enable them to take advantage of the cross-border job-opportunities.

Common and programme specific output indicators

- No. of initiatives (trainings, education schemes, websites, agreements, networks, job-fairs etc.) that activate workforce mobility in the cross border area

2.3.5 Actions under Priority Axis 5: An efficient region

Specific Objective 5.1. To increase cooperation capacity and the efficiency of public institutions in a CBC context

The programme aims to assist institutions to deliver more efficient, adaptable and tailor-made policies and services with a comparable quality throughout the cross-border region. It also focuses on developing innovative solutions in the light of multi-level governance and cross border cooperation.

Furthermore, the programme expects that local stakeholders will collaborate with public authorities in order to identify innovative public services solutions.

The set of actions to be supported in the cross-border area, all corresponding to the specific objective “increase cooperation capacity and the efficiency of public institutions in a CBC context”, foresees the following:

Soft measures:

1. Analyzing and harmonizing the regulatory framework
2. Strengthening local/regional cross border networks
3. Designing implementation strategies, developing and transferring of best-practice models and solutions (including best-practices for the provision of public services through e-government tools and methods), organisational models, decision-making tools and promotion of pilot actions for a better participation of all groups of civil society in the cross-border and local decision and policy making process
4. Coordinating policies and investments in the programme area - developing common approaches to common problems - in areas such as social policies, education, health, employment, transport, environment and customs

5. Developing models for institutional co-operation and spatial organization for and between different territorial types
6. Training for public authorities' staff to increase capacity in view of implementing EU projects, legislation and managing public investments in a CBC context
7. Developing cross border models for the design, testing, up-scaling, comparison and evaluation of innovations (tools, processes, actors, organizations and interfaces) in the fields of services of general interest, social services and public administration
8. Up-skilling in the field of CBC policy development and implementation
9. Raising awareness regarding cross-border opportunities (employment, health care, education, etc.)

Integrated measures:

10. Supporting the modernisation of public services in areas such as customs, social policies, education, health and employment (including purchase of equipment and infrastructure development)
11. Developing of common structures, systems and tools that ensure continuity and allow to gradually step up the maturity of cross-border cooperation in the programme area
12. Promoting actions to reduce the administrative burden for citizens in a cross border context

Main target groups

These priority axis beneficiaries are any kind of public institutions or public service organizations (any non-profit organization with private or public law personality that delivers/provides a public service according to law). Given the fact that this represents a very large group of beneficiaries that is nevertheless very well defined, the target group of the activities financed under this axis is identical to the group of beneficiaries.

The target group and the potential beneficiaries include all the following sub categories:

- Local public administrations (e.g. municipalities, county councils, district administrations, etc.)
- Public institutions with key sectorial competencies in the cross-border area and their local bodies (e.g. river basin administrations, environmental agencies and inspectorates, public forestry administration, land improvement administrations/institutions, public weather agencies).
- NGOs with activities relevant for the cross-border area (e.g. NGOs delivering public interest services in the cross-border area (healthcare, old-age care, child-care, transportation services for disabled, other services for people with socio-economic difficulties, etc.)
- Deconcentrated bodies of public institutions like the customs, the border police, employment agencies, education inspectorates, healthcare directorates, etc.
- Public institutions that deliver public services such as: hospitals, universities, high schools, schools, local healthcare units, social service institutions, etc.

The common and programme specific output indicators for these actions are:

- Number of supported cross border mechanisms (agreements, networks, regulations, studies, policies, strategies, information exchange tools) to enhance cooperation capacity.

2.4 Relationship with other relevant plans and programmes

Identification of relationships between various relevant strategic documents and the programme being assessed serves the following purposes:

- Identifying the presence of potential synergies or potential discrepancies and constraints;
- identification of issues already covered by other policies, plans, programmes or projects;
- checking environmental information collected for the SEA of other policies, plans, programmes of projects, that may be used in the SEA of the programme being assessed;
- consideration of the cumulative effects on the key receptors of implementing multiple related plans/programmes, in order to substantiate the assessment of alternative options and specific impacts of the plan being assessed.

Plans, programmes and strategies likely to interact with the 2014-2020 RO-BG CBC Programme are reviewed in the following sections.

2.4.1 Main EU Strategic Documents

Europe 2020: An European strategy for smart, sustainable and inclusive growth

The Europe 2020 Strategy (EU 2020) is the European Union strategy that mainly aims to overcome the crisis that continues to affect the European economy. The strategy aims to do away with the deficiencies of the current development model and to create enabling conditions for smarter, more sustainable and inclusion friendly economic growth. In order to enable it, the European Union set 5 key objectives that it intends to
meet during this decade. They cover areas such as employment, education, research and innovation, social inclusion and poverty reduction and energy/climate.

The Europe 2020 strategy proposes three mutually supporting priorities:
1. smart growth – development of a knwledge and innovation-based economy;
2. sustainable growth - promoting a more resource-efficient ecological and competitive economy;
3. inclusion-friendly growth – promoting an economy with high employment rates, ensuring social and territorial cohesion.

An EU Strategy on adaptation to climate change

The overall aim of the EU Adaptation Strategy is to contribute to a more climate-resilient Europe. This means enhancing the preparedness and capacity to respond to the impacts of climate change at local, regional, national and EU levels, developing a coherent approach and improving coordination.

The Strategy sets out a framework and mechanisms for bringing the EU's preparedness for the current and future impacts of climate change up to a new level. It is proposed to do this by encouraging and supporting action by the EU Member States on adaptation, by creating a basis for better informed decision-making on adaptation in the years to come, and by making key economic and policy sectors more resilient to the effects of climate change.

The 2014-2020 RO-BG CBC Programme will contribute to the fulfillment of the relevant strategic objectives through its Priority Axis 2, more specifically through IP 2 (Developing environment-friendly and low-carbon transport systems, including river and sea transport, ports and multimodal links) as well as though Priority Axis 3 (in particular IP2 - Protecting and restoring biodiversity, soil protection and restoration and promoting ecosystem

services including Natura 2000 and green infrastructures) and Priority Axis 4 (IP 1-Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems).

The 7th EU Environmental Action Programme

The environmental action programmes have been shaping the EU environmental policies ever since the early 1970s. The 6th EU Environmental Action Programme was concluded in 2012. At the request of the stakeholders, including of the European Council and Parliament, in late 2012 the European Commission launched the 7th Environmental Action Programme that set the general framework for the EU environmental policy up to the end of the decade.

Its title – ***"Living well, within the limits of our planet"*** – stresses the importance that in future years will mark the reinforcement of ecological resilience in Europe and the transformation of the EU into a sustainable ecological and inclusion enabling economy.

The Action Programme sets **three thematic objectives** to guide environmental policy up to 2020:

- the first is to protect, preserve and increase the natural capital underpinning economic prosperity and our welfare;
- the second, as provided in the emblematic initiative for efficient resource use in Europe, promotes orientation toward an economy that uses all resources efficiently. This means full implementation of the packet of measures for climate and energy, reaching an agreement on the next steps in climate policy after 2020, improving the environmental performance of products throughout their life cycle and reducing the environmental impact of consumption;
- the third objective is based on the progress already made by the EU in benefits providing important health benefits to its citizens, boosting the efforts of combating air pollution, noise pollution and water pollution, improving the management of chemicals and preparation for the impacts of climate change.

Unlike in previous programmes, meeting these objectives will not depend on new major legislative initiatives, but will require instead correct implementation of the issues already agreed upon.

The new Environmental Action Programme - ***"Living well, within the limits of our planet"*** **,** proposed by the Commission puts forth a medium term environmental strategy that is sufficiently flexible to cope with future challenges.

2.4.2 National Strategies, Programmes and Plans in Romania

The National Sustainable Development Strategy of Romania 2013-2020-2030

The National Sustainable Development Strategy of Romania (2013-2020-2030) (SNDD) was developed by the Ministry of Environment and Sustainable Development with the United Nations Development Programme Romania (UNDP Romania).

As mentioned in the final document, approved under Government Decision No. 1.216/2007 approving the Memorandum of Understanding between the Central Public Authority for the Environment and the UN Development Programme Romania on revising the National Sustainable Development Strategy, SNDD considered:

- rational correlation of the development objectives, including investment programmes, with the supporting capacity of the natural capital;
- use of the best available technologies from an economic and ecological perspective, in investment decisions involving public funds; firm introduction of eco-efficiency criteria in all the production or service activities;

- anticipating the effects of climate change and preparing both long-term adaptation solutions and inter-sectoral contingency plans, to include alternative solution portfolios for crisis situations generated by natural or anthropogenic events.

Strategic objectives of the SNDD:
- *Horizon 2013: Organic incorporation of sustainable development principles and practices into all the public policies and programmes of Romania as a EU MS.*
- *Horizon 2020: Reaching the current EU average for the main sustainable development indicators.*
- *Horizon 2030: Romania's significantly approaching the year's EU average for the sustainable development indicators.*

The main directions for action, detailed by sector and by time horizon include:
- *Rational correlation of the development objectives, investment programmes, including at the inter-sectoral and regional level, with the potential and supporting capacity of the natural capital;*
- *Enhanced modernisation of the educational and professional training, health and social service systems, taking into account the demographic developments and their impact on the labour market;*
- *Generalised use of the existing best technologies from an economic and ecological perspective, in investment decisions involving public funds; firm introduction of eco-efficiency criteria in all the production or service activities;*
- *Anticipating the effects of climate change and preparing timely contingency plans for crisis situations generated by natural or anthropogenic events;*
- *Ensuring food safety and security by capitalising on Romania's competitive advantages, without giving up on the requirements to maintain soil fertility, preserve the biodiversity and protect the environment;*
- *Identifying additional funding resources for the implementation of large scale projects and programmes, especially in infrastructure, energy, environmental protection, food safety, education, health and social services;*
- *Protection and enhancement of the national cultural and natural heritage; harmonisation with the European norms and standards for the quality of life.*

Of relevance for the CBC RO-BG 2014-2020 project is the national objective set for Horizon 2020, practically summing up a series of general objectives related to energy efficiency and renewable resources, on the one hand, and climate change and climate change adaptation measures, on the other hand.

Horizon 2020. National Objective:

> *Providing efficient and safe operation of the national power system, reaching the current EU average energy intensity and efficiency; meeting Romania's obligations under the legislative package "Climate change and energy form renewable sources" and internationally, based on a new global agreement; promoting and implementing climate change adaptation measures and observing the principles of sustainable development.*

Actions:

• Integrating adaptation to climate change at the time of implementing and amending the current and future legislation and policies;

• Revising the budget, all the national strategies and programmes so as to ensure that they include adaptation in the sectoral policies;

• Establishing ways of communication in view of implementing adaptation measures at the local level. Many of the decisions that directly or indirectly impact on adaptation to climate change are made at the local level;

• Increasing awareness of the adaptation to climate change. Behavioural changes in societies and communities largely depend on awareness of the problem.

National Strategy for Climate Change (Romania) 2013-2020

The national GHG emission reduction policy follows he European approach, i.e. on the one hand, ensuring the participation of some of the business operators in the implementation of the GHG emission trading scheme, and on the other hand adopting sectoral policies and measures so that nationally the GHG emissions associated to such sectors may follow the linear direction of emission limits set under Decision No. 406/2009/EC.

The GHG emission objectives were presented for the following economic sectors:

1. Energy
2. Industrial processes
3. Use of other products and solvents
4. Agriculture
5. Land use, Change of land use, Forestry
6. Waste management

Nationally, emission capping and reduction will be provided by applying the GHG emission trading scheme (EU ETS) and by implementing the provisions of Decision No. 406/2009/EC.

The EU ETS regulates emissions from installations of high production capacity and emissions in the Energy and Industrial Processes sectors.

In order to optimise planned GHG emission reductions from the other sources not within the scope of EU ETS, it is necessary to correlate the annual sectoral plans for emissions from regulated sources by applying Decision No. 406/2009/EC (non EU ETS), and considering the emissions and reduction potential of each individual sector, and the national economic development priorities.

1. Electricity and Heat Generation

Strategic objectives proposed for electricity and heat generation:

A. Develop a sectoral strategy to reduce the greenhouse gas emissions

B. Capitalise on renewable energy resources

The legislative package Climate Change - Energy promoted Directive 28/2009/EC in establishing a legal framework for promoting energy from renewable sources and mandatory objectives for the share of energy form renewable sources in the final energy consumption, including the transport sector.

The contribution of our country in meeting the European objective by 2020 is for a minimum percentage of 24% of the final energy consumption to be generated from renewable energy sources (RES).

The main RES capitalisation objectives include:

- Integrating the renewable energy sources into the structure of the national power grid;
- Removing the technical-functional and psycho-social barriers in the process of capitalising on renewable energy sources and keeping within the limits of cost-efficiency;
- Promoting private investment and creating the conditions to facilitate foreign capital access to the renewable source market;

- Promoting sectoral policies that ensure energy security by increasing the share of renewable energies in the final energy consumption, reducing the dependency of the national economy on imports of primary energy;
- Ensuring supply of energy to the remote communities by tapping into the potential of local energy resources;
- Ensuring the conditions for Romania to participate on the European "green certificate" market for energy from renewable sources (when the market will exist).

C. Promoting smart systems for electricity production, transport, distribution and consumption

Smart systems allow for the development of electricity production activities at the point of consumption, with delivery to the grid when own consumption is less than the amount of electricity produced, and absorption from the grid when consumption exceeds production. These systems are managed by modern information technology tools and lead to important reductions of greenhouse gas emissions.

D. Improved energy efficiency

Extension of the implementation period of the National Energy Efficiency Programme will ensure co-financing of energy efficiency investment projects in the sectors of urban heating, public building rehabilitation and public lighting.

The Programme will also help cover the costs of rehabilitating heat transport and distribution systems. It has been considered that the presence of co-financing by the State will improve project attractiveness and so create options to attract additional funding sources from the private sector.

Also, judicious investments in the rehabilitation of lighting systems will help highlight the important potential of electricity savings. The saved electricity may then be used for public lighting in various towns and communes.

E. Implementing investments in installations and equipment for industrial enterprises leading to energy savings

At the level of business operators, investments in low energy consumption installations or equipment, in order to obtain energy savings, will result in reducing the final energy consumption, and implicitly in the reduction of GHG emissions.

The funding of such actions will be facilitated by the Ministry of Economy, Commerce and the Business Environment, who will provide funding lines from European financial instruments.

F. Improved energy efficiency in the Agricultural sector

Bio-fuels will be provided for mechanised farm works and land reclamation works.

Its transportation logistics will also be ensured, so as to minimise the transport distances and streamline the consumption of classic and bio-fuels

G. Ecological design

Implementation of the ecological design requirements for energy efficiency of products with energy impacts will result in an improved energy efficiency, which will then have a positive macroeconomic impact, given that energy saving is the most cost-efficient way to improve safety in energy supply and reduce dependence on imports. This effort will significantly help meet the community set objective of a 20% increase of energy efficiency by 2020.

H. Promoting high efficiency co-generation

As of 1 April 2011, the state aid scheme for the promotion of high efficiency co-generation has become operational and will be applied until 2023. The scheme provides for the granting of financial assistance to the producers of electricity and heat who own or operate highly efficient co-generation plants and achieve fuel savings of up to 10% compared to separate generation.

I. Carbon capture and storage - CCS in Romania

Taking into account that the national power system largely relies on the use of fossil fuels and that a change in this situation cannot be brought about rapidly, the implementation of carbon dioxide capture and geological storage will facilitate transition from an energy mix where fossil fuels prevail to an energy mix where they account for a low share. The carbon dioxide capture and storage objective is to reduce air emissions of carbon dioxide from important energy generation emission sources.

J. Continued public and business information campaigns on the importance of increasing energy efficiency

2. Transport

The general objective for the Transport-related area is to *develop a sustainable system to improve social cohesion, access to peripheral areas, reduce environmental impacts (including reduced GHG emissions), to promote economic competitiveness by improving infrastructure, providing an optimum fuel mix and using information and communications technology for an improvement of the sector.*

General EU Objective

It is expected that GHG emissions will be reduced by 20% in 2030 compared to the 2008 levels, and by 60% in 2050, compared to the emission level of 1990 (according to the Transport White Paper 2050).

Strategic objectives

A. Develop a sectoral strategy to reduce the greenhouse gas emissions

Promoting GHG emission reduction measures and sectoral planning of emissions in view of meeting the reduction objectives assumed at the international and European level will require a high degree of professionalism in the governmental authorities; improved relevant professional training will be achieved by promoting and funding adequate training and experience sharing programmes/projects with countries that have a high level of expertise in the field.

B. Road transport reduction

An important role in reducing greenhouse gas emissions in the transport sector is played by road transport. In this transport segment, public transport facilities will be optimised (trains, buses, trolleybuses, trams), as well as the necessary infrastructure for streamlining their operation and alternative transport will be encouraged (cyclism, car pooling, car sharing, etc.) to create an attractive alternative to individual motorised transport.

In order to reduce the road transport of goods, it is envisaged to improve and streamline the rail infrastructure and to provide incentives for the use of this form of transport. An important role will also be played by the development of inter-model transport infrastructure.

C. Use of environmentally-friendly vehicles

Road transport aims to use vehicles that generate lower environmental impacts than those using conventional petrol or diesel burning engines.

A very important role in achieving GHG emission reductions in road transport is played by the implementation of Directive 2009/33/EC on promoting "clean" and energy efficient road transport vehicles , of Regulation 443/2009/EC, targeting CO2 emissions from cars, providing for the reaching in 2020 of an emission threshold of 95 g CO2/km and Regulation 510/2011/CE, targeting CO2 emissions from light vehicles (vans), setting an emission threshold for 2020 of 147 g CO2/km.

D. Smart transport systems (STS)

In road transport, the areas of STS applications have been identified to be:

I: Optimum use of road traffic and travel data;

II: Development of traffic and goods management;

III: Ensuring road safety and security;

IV: Ensuring connection between the vehicle and the transport infrastructure.

Promotion of smart transport systems will substantially contribute to the optimisation of passenger and goods transport, the reduction of energy intensity and implicitly to the reduction of greenhouse gas emission reduction.

E. Streamlining rail transport

The necessary measures for the streamlining of rail transport will target both infrastructure improvement and the use of new low carbon technologies. In this regard, the following have been considered:

Rail transport infrastructure

Strategic measures to directly reduce greenhouse gas emissions

- *Integration of regulations on environmental protection in the process of designing and executing rail infrastructure rehabilitation, by preparing environmental impact studies, the documentations required for environmental licenses and permits (including Natura 2000), technical specifications for execution (construction);*
- *Use of information provided by the calculation of the CO2 footprint in selecting the design alternatives for rehabilitation and modernisation works;*
- *Implementation of eco-public procurement to promote sustainable development, and low carbon, respectively,*
- *Implementation of smart transport systems, impacting on traffic safety, and on reducing fuel consumption;*
- *Use of renewable energy technologies including: interior heating facilities based on the heat pump or solar panel technology, supplying the necessary electrical power in the railway stations form photovoltaic panels or other forms of renewable energy;*
- *Modernisation of the existing heating plants and/or replacement with higher efficiency plants;*
- *Modernisation of the heavy duty machinery fleet used in railway maintenance with higher performance equipment in point of technology and the environment, after decommissioning those of more than 20 years in operation;*
- *Continued electrification of about 900 km of railway. Electrification of traffic sections will help replace diesel engines by electrical ones.*

Strategic measures to increase energy efficiency on railway transport with indirect impact on greenhouse gas emission reduction:

- *The use of new technologies in interior and exterior lighting of railway stations (reduced electricity consumption by 30-40%, using LED light sources);*
- *Lighting installations in railway stations using photovoltaic panels or other forms of renewable energy.*

- *refurbishment of the engine fleet;*
- *use of high quality diesel fuel of high ecological performance;*
- *training engine drivers to use eco-efficient driving;*
- *study of the options to reduce down time in technological processes;*

Passenger transport

The environmental strategy for passenger rail transport is focused on promoting a sustainable passenger rail transport system.

The main direction of action to streamline the use of resources and reduce GHG emissions is **modernisation of passenger rail transport** achieved by:
- refurbishment of the rolling stock fleet and
- procurement of high energy performance rolling stock.

F. Greenhouse gas emission reduction in air transport

In order to reduce emissions in this sector, as of 2013, the air transport sector has been included in the EU ETS under an amendment of Decision 2003/87/EC transposed into national legislation by HG 399/2010.

G. Development of Intermodal Transport

Consideration will be given to promoting the Intermodal Transport Strategy in Romania 2020, approved in 2011, that includes the following measures:
- Re-launching RO-LA type traffic. CFR Marfă has considered re-launching RO-LA traffic on the CFR network, once measures are adopted to support this type of traffic by the application of governmental subsidies. In 2011, the Ministry of Environment and Forests (the name of the Ministry of Environment and Climate Change in 2011) initiated the first measures to prepare a State Aid Scheme for combined RO-LA type transport.
- Modernisation of terminals, construction of new terminals
- Providing a carriage fleet for combined transport, by repairing specialised carriages for this type of traffic, so that CFR Marfă may take over for transport all the customer requirements.

H. Use of bio-fuels

The level of the national objective for the share of energy from renewable sources used in transport by 2020 is at least 10% of the national final consumption.

In order to achieve this objective, the fuel suppliers have the obligation to phase in onto the market petrol and diesel with a given bio-fuel content.

Bio-fuels and bio-liquids are to be provided from raw materials that meet the sustainability criteria established at community level, irrespective of the place of origin of the raw material.

The greenhouse gas emission reduction targets for emissions generated in the use of bio-fuels and bio-liquids are as follows:
- a minimum 35 %, as of 1 January 2012;
- a minimum 50 %, as of 1 January 2017;
- a minimum 60 %, as of 1 January 2018 for bio-fuels produced in installations where production started on 1 January 2017 or after this date.

In regard to **air transport** the target is for **at least 40%** of the 2050 fuel to be low carbon.

I. Charges

Considering the provisions of Directive 1999/62/EC of the European Parliament and Council on the charging of heavy goods vehicles for the use of certain infrastructures, hereinafter referred to as the Eurovignette Directive, its application in Romania encourages the use of less polluting vehicles that do not damage the road infrastructure.

The Romanian Government has provided for tax breaks for those operating hybrid cars, in order to encourage the procurement of such vehicles, and the development of a fleet of such vehicles must be further encouraged.

J. Encouraging and promoting non-motorised transport

Transition to a national policy of encouraging non-motorised transport and the development of an adequate cycling infrastructure (bicycle lanes, storage racks, special carriages/ compartments for bicycles on the subway and on trains, etc.) will lead to a reduction in motorised road transport and implicitly to a reduction of GHG emissions.

Considering that amateur cycling support is an option to develop sustainable tourism, the promotion of a cycling lane between the Danube countries is an important objective.

K. Incentives for research and development in reducing greenhouse gas emissions in the transport sector

The Government will supply the funding of research and development activities aiming to:
- Encourage and ensure adequate applied research activities, aiming to find solutions to use bio-fuels, develop new transport technologies, urban planning, etc.
- Encourage the academia to apply for projects funded from various sources to conduct research studies on pollution in large urban agglomerations, to inform the public and the central authorities on the necessary measures to reduce pollution

An example in this regard is the National Platform for the Electric Car (PNME), a body subordinated to the Romanian Government, supported y representatives of industry an the academia of relevant concern.

L. Improving performance in urban transport

Transition to sustainable, environmentally-friendly transport in urban areas is an obligation under the Action Plan for Urban Mobility, adopted by the European Commission in 2009. In this regard, consideration is given to transition to integrated urban development and the implementation of an integrated transport plan targeting the reduction of transportation needs, diversification and improvement of less pollutant transport means, creation and implementation of smart transport systems and improvement of fuel consumption.

M. Information and awareness

An important component of greenhouse gas emission reduction in the transport sector is public information and awareness. Information and awareness raising programmes will target the final user in view of facilitating the introduction of less polluting means of transport and the limitation of road transport.

3. Housing and Urban Development

Land use planning is an important tool for social development, a practical representation of its spatial expression of economic, social and ecological policies.

The residential sector accounts for 40% of the EU energy consumption, providing outstanding potential for energy efficiency and therefore for greenhouse gas emission reduction.

General Objective

Development of the national action plan for energy efficiency provided for greenhouse gas emission reduction in the residential sector by 41.5% (by 2020 compared to the 2001-2005 average) (NAPEE)

The **specific objectives** that will help meet the general objective include:

- *Improved thermal performance in buildings*

- *Encouraging the development of projects of ecological houses, passive and/or active houses*
- *Heat transport and distribution infrastructure modernisation in centralised systems*
- *Support programme to improve energy efficiency in buildings occupied by low income persons*
- *Programmes to encourage the consumers to buy higher efficiency electrical and electronic appliances*
- *Reduced water consumption*
- *Public education and awareness raising programmes*
- *Increasing the coverage of green spaces in urban and suburban areas*

4. Industrial Processes

Strategic objectives:

- *Develop a sectoral strategy to reduce the greenhouse gas emissions*
- *Include an analysis of GHG emissions in the standard requirements for economic public policy assessment throughout its implementation and post-implementation period*
- *Promote efficient technologies and clean industries, considering the strengths of the Romanian economy*
- *Promote voluntary agreements to help speed up the process of streamlining resource consumption in industry*

5. Agriculture

Strategic objectives

- *Develop a sectoral strategy to reduce the greenhouse gas emissions*
- *Cut back emissions from specific farming activities (methane and nitrogen protoxide)*
- *Reduce carbon loss in the soil and improve its absorption capacity*
- *Improve energy efficiency and help develop the renewable energy sector*
- *Improve the level of knowledge in the sector and the inter-dependence with climate change*

1. Land use, Land Use Change, Forestry (LULUCF)

Strategic objectives:

- *Develop a sectoral strategy to improve greenhouse gas emission absorption capacity in natural sinks*
- *Increase forest coverage*
- *Protect virgin and quasi-virgin forests*
- *Protect and restore aquatic ecosystems in forests*
- *Improve forest health*
- *Ensure sustainable practices in planting for energy (short term turnover of tree plantations on farmland)*
- *Efficient use of wood products*

- *Use of information and communication technology in forestry management*
- *Develop national bonus schemes for afforestation, reforestation, conservation of virgin forests*
- *Education, research and awareness*

2. Waste management

Strategic objectives

- *Develop a sectoral strategy to reduce the greenhouse gas emissions*
- *Prevent waste generation*
- *Reduce the amount of landfilled organic waste*

Horizontal strategic objectives

The objectives identified in the Climate Change Energy legislative package will be met through the implementation of the Europe 2020 Strategy at the European level:

- *20% greenhouse gas emission reduction;*
- *20% reduction of final energy consumption by improving energy efficiency;*
- *20% of the energy requirements covered from renewable sources.*

Long-term greenhouse gas emission reduction while limiting global warming to a maximum 2°C compared to the average temperature in pre-industrial period will be achieved by developing and implementing a low carbon-based economic strategy

Adaptation to climate change (ACC)

The ACC component objective is to increase the country's capacity to adapt to the actual or potential effects of climate change, by setting strategic directions at the national level to guide the development of sectoral policies, implement actions and develop the necessary capacities to update them on a regular basis.

The actions supported by this component include:

- *active monitoring of the impacts of climate change, and of the associated social and economic vulnerability;*
- *integration of climate change adaptation measures into the development strategies and sectoral policies, and harmonisation of such measures with each other;*
- *identification of urgent measures to adapta to climate change in the critical economic sectors*

ACC Objectives:

- *integrating adaptation to climate change measures with the legislation related to current and future policies at the time of promotion and implementation or amendment, as applicable;*
- *revising all the national/sectoral strategies and programmes so that they include the requirements of adaptation to climate change associated to the sectoral policies;*
- *developing communication in implementing the adaptation measures at the local level; many of the decisions with a direct or indirect impact on adaptation to climate change are made locally;*
- *improving public awareness of the need to adapt to climate change;*

- *changing social and community behaviour by raising awareness of the current and future problems.*

National Waste Management Strategy 2014-2020 (approved by Romanian Government Decision No. 870/2013)

The national waste management policy is tributary to the objectives of the EU waste prevention policy and aims to reduce resource use and to apply the waste hierarchy in practice.

The preventative action principle is one of the principles that underpin Emergency Ordinance No. 195/2005 on environmental protection, as amended, Directive 2008/98/EC on waste and repealing certain Directives, transposed into the national legislation by Law No. 211/2011 on the regime of waste, and introducing the waste hierarchy that "shall apply in priority order under the waste prevention and management legislation and policy as follows: prevention, preparation for reuse, recycling, other recovery operations, e.g. for energy and, as a last resort, disposal".

The Eu approach to waste management relies on 4 major principles:
- prevent waste generation - a factor considered to be of key importance for any waste management strategy, directly related to both improving production methods and to making consumers change their demand for products (focus on green products) and embrace a life style, which results in lower quantities of waste;
- recycle and reuse - encouraging a high level of component material recovery, preferably by recycling. In this sense, a number of waste streams have been identified for priority recycling: packaging waste, end-of-life vehicles, waste batteries, waste electrical and electronic equipment;
- recovery in other operations of unrecycled waste;
- final waste disposal - if waste cannot be recovered, it must be disposed of in an environmentally human health safe way, under a strict monitoring programme.

The European topical strategy for waste prevention and recycling sets guidelines for reducing the negative environmental impacts of waste, from generation to final disposal. Thus, the **main objectives** of the strategy include:
- prevent waste generation;
- Going for a European recycling society;
- use the "life cycle analysis" as a tool in implementing the waste management policy;
- improve the knowledge base of all those who have responsibilities;
- improve the overall legal framework, by simplifying and modernising the existing legislation.

Development of integrated waste management systems has been included as an objective of the SNDD. The strategy states the following waste management objectives:
- by 2013 - reduce by up to 2.4 million tons the annual quantity of landfilled biodegradable waste, accounting for 50% of the total generated in 1995;
- by 2013 - recovery of useful packaging waste materials for recycling or incineration for energy recovery of 60% paper/board, 22.5% plastics, 60% glass, 50% metals and 15% wood;
- by 2015 - reduce the number of historically polluted sites in a minimum 30 counties;
- by 2015 - create 30 integrated waste management systems at the regional/county level; close 1,500 small landfills located in rural areas and 150 old landfills in urban areas; implement 5 pilot projects for the rehabilitation of historically polluted sites; provide improved sanitation and waste management services for 8 million people.

National Strategy for Polluted Sites (Romania)

The contaminated site management strategy is closely related to the Waste Management Strategy, but is also of utmost importance in the implementation of other projects to restore pollution impacted sites.

General objectives

Strategic objective 1: Protect human and environmental health from the effects of contaminants generated in anthropogenic activities.

Strategic objective 2: Protect the soil and subsoil in the context of following the sustainable development principles.

Specific Objectives

Specific environmental objectives

A. Develop, harmonise and implement a legal framework for the remediation of contaminated sites and encourage urban regeneration

B. Reduce the coverage of historically contaminated sites

C. Improve the quality of environmental media and national management thereof

Specific socio-economic objectives

A. Ensure protection of the drinking water resources, food safety and public health

B. Rehabilitate land so as to meet the requirements of the planned use

Specific technical objectives

A. Build institutional capacity in the management of contaminated sites

B. Develop a service market for the investigation and rehabilitation of contaminated sites

C. Develop and implement the best available techniques not entailing excessive costs in the investigation and rehabilitation of contaminated sites

National Strategy and Action Plan for Biodiversity Conservation (NSAPBC) 2013 – 2020

Under the NSAPBC, Romania proposes the following general directions of action for the medium term 2013-2020:

Direction of action 1: Halt the decline of biological diversity including genetic resources, species, ecosystems and landscapes and restore damaged ecosystems by 2020.

Direction of action 2: Integrate the biodiversity conservation policies into all the sectoral policies by 2020.

Direction of action 3: Promote traditional knowledge, practices, and innovative methods and clean technologies and support measures in sustainable biodiversity conservation by 2020.

Direction of action 4: Improve communication and biodiversity education by 2020.

In order to achieve biodiversity conservation and sustainable use of its components based on the analysis of the general national context and of the threats to biodiversity, to ensure "in-situ" and "ex-situ" conservation and provide a fair sharing of the benefits of using genetic resources, the following **10 strategic objectives** have been put in place:

A. Develop the overall legal and institutional framework and provide financial resources
B. Ensure coherence and efficient management of the national protected area network
C. Ensure good conservation status for the protected wildlife species

D. Sustainable use of the biological diversity components
E. Ex situ conservation
F. Control of invasive species
G. Access to genetic resources and fair sharing of the benefits arising from their use
H. Support and promotion of traditional knowledge, innovation and practices
I. Development of scientific research and promotion of technology transfer
J. Public communication, education and awareness

A set of operational objectives and an action plan was established under each strategic objective, based on the review of the current situation.

National Strategy for the Fishing Sector 2014-2020 (NSFS)

The National Strategy for the Fishing Sector 2014-2020 (NSFS) was prepared in a transparent dialogue process with the stakeholders, in the framework set by the Ministry of European Funds (MEF) as the coordinator of the European fund programming process for 2014-2020.

General Objective

NSFS implementation will make a higher contribution to food safety and public health in Romania by increasing the domestic fish and fish product output, with higher product quality, and meeting the sectoral sustainability rules.

Moreover, implementation of the strategy will help boost the GDP share of the fishing sector.

In order to obtain the expected result and turn the vision for the fishing sector into reality, the NSFS proposes as its general objective support of a competitive, sustainable and attractive sector.

NSFS impacts will be felt in all the aras of sustainable development:
- **economic**, in developing the competitiveness in the fishing sector;
- **environmental**, in augmenting the environmental services especially provided by extensive aquaculture and limiting the negative impact of fishing activities, primarily by sustainable resource management;
- **social**, in creating jobs and increasing social and territorial cohesion.

Directions of action

For the sake of correlation with the EU priorities provided in the FEPAM Regulation, that regulates the main financial resource for the implementation of the NSFS, the specific implementation objectives of the strategy will be structured along the following directions of action:

1. Encourage innovative, competitive and knowledge-based fisheries and and aquaculture, including connected processing

2. Promote sustainable and resource-efficient fisheries and aquaculture, including connected processing;

3. Strengthen the control, inspection and enforcement system and improve data collection activities;

4. Increase employment and territorial cohesion.

National Regional Development Strategy 2014-2020 (Romania)

General Objective:

Ongoing improvement of the quality of life by ensuring the welfare, environmental protection and economic and social cohesion for sustainable communities able to manage resources efficiently and capitalise the potential for innovation and balanced economic and social development of the regions

Specific Objectives

- *Increase the role and functions of towns and municipalities in regional development through investments supporting economic growth, environmental protection, an improved urban infrastructure and social cohesion*
- *Increase energy efficiency on the public and/or residential sector to help reduce CO2 emissions by 20% in accordance with the Europa 2020 Strategy*
- *Increase accessibility of the regions by improving regional mobility and providing the essential services for sustainable and inclusive economic development*
- *Regenerate the disadvantaged areas and stimulate social inclusion of the marginalised communities, by creating the necessary prerequisites for essential service provision and decent living standards*
- *Grow regional economies by developing specific innovation and research infrastructure, and stimulate SME competitiveness*
- *Stimulate competitive and sustainable development of regional and local tourism by sustainable capitalisation of the cultural heritage of tourism potential and creating/ modernising the specific tourism infrastructure*
- *Protect and improve the environment by improving the quality of water services, rehabilitating polluted and abandoned industrial sites and measures to prevent risks and improve the emergency response capacity.*

Large Infrastructure Operational Programme 2014-2020 (draft 28 April 2014)

The Large Infrastructure Operational Programme (LIOP) 2014-2020 was developed based on Romania's development needs as identified under the Partnership Agreement 2014-2020, and according to the Common Strategic Framework and the Position Paper of the European Commission services.

The funding priorities set under the LIOP help meet the general objective of the Partnership Agreement, to reduce economic and social development gaps between Romania and the EU member States, by approaching two of the five challenges identified at the national level: *Infrastructure* and *Resources*.

Considering the high degree of correlation and complementarity of infrastructure investment types, and correlated with the experience of the 2007-2013 programming period, promotion of investment addressing the infrastructure and resource needs has been proposed for funding under a single operational programme.

Global Objective:

> *Develop transport, environmental, energy infrastructure and risk prevention at European standards, with the protection and efficient use of natural resources.*

In order to meet the challenges of the Partnership Agreement and meet the objective, the LIOP contributes to the EU strategy for smart, sustainable and inclusion-friendly growth, by addressing the development needs in four sectors:
- transport infrastructure,
- environmental protection,
- risk management and adaptation to climate change,
- energy and energy efficiency.

The **Specific objectives** (SO) match the nine priority axes, as follows:
- ✓ Transport infrastructure:

- PA 1 - Develop the TEN-T network on the Romanian territory
  - *SO 1.1.1. Develop the road infrastructure on the TEN-T network*
  - *SO 1.1.2. Modernise and develop the rail infrastructure on the TEN-T network including by the implementation of the high speed railway corridor and actions to increase service quality*
  - *SO 1.1.3. Modernise and develop the naval transport infrastructure on the TEN-T network*

- PA 2 - Increase regional accessibility by connecting to the central TEN-T
  - *SO 2.1.1. PA 2 - Increase regional accessibility by connecting to the central TEN-T road infrastructure*
  - *SO 2.1.2. Ensure regional mobility by connecting to the central railway TEN-T network*
  - *SO 2.1.3. Ensure regional mobility by modernising the ports*
  - *SO 2.1.4. Ensure mobility by modernising the airports*

- PA 3 - Development of a safe and environmentally-friendly transport system
  - *SO 3.1.1. Develop intermodal transport to stimulate the use of sustainable modes of transport, including by reducing bottlenecks in customs*
  - *SO 3.1.2. Improve safety and security on all modes of transport and reduce the environmental impacts of transport*

✓ Environment and environmental protection infrastructure, risk management:

- PA 4 - Environmental protection and promotion of efficient resource use
  - *SO 4.1.1. Reduce the quantity of untreated urban wastewater and increase the coverage of public water supply systems*
  - *SO 4.2.1. Increase the capacity of integrated waste management systems and reduce waste generation by reuse, recycling, including use as secondary raw materials/ by products*
- PA 5 - Biodiversity protection and restoration, remediation of contaminated soils and air quality monitoring
  - *SO 5.1.1. Maintain the conservation status of species and habitats of Community importance, either nationally or at site level*
  - *SO 5.2.1. Develop and optimise air quality nationally, including for air quality monitoring*
  - *SO 5.2.2. Decontaminate industrial land*
- PA 6 - Promoting climate change adaptation and risk prevention and management
  - *SO 6.1.1. Reduce the effects and damage to the population caused by the main climate change related risks (floods and draught)*
  - *SO 6.2.1. Reduce the incidence of specific risks in Romania, especial coastal erosion risks*
  - *SO 6.2.2. Reduce emergency response time, by building the disaster response capacity in the volunteer and professional services*

✓ Energy infrastructure;

- PA 7 0 Clean energy and energy efficiency
  - *SO 7.1.1. Capitalisation on renewable resources to produce clean electricity and heat (biomass, geothermal, micro-hydro)*
  - *SO 7.2.1. Increase energy efficiency on enterprises through high efficiency co-generation systems*
  - *SO 7.3.1. Implement smart low voltage electricity distribution*
  - *SO 7.3.2. Increase energy efficiency by monitoring energy distribution on industrial platforms*

- PA 8 - Smart and sustainable energy transport systems

- *SO 8.1.1. Develop smart electricity transport systems*
- *SO 8.1.2. Inter-connect the Romanian National Natural Gas Transport System with the neighbouring countries*

✓ Infrastructure in the Bucharest – Ilfov Region:

➢ PA 9 - Develop urban infrastructure in the Bucharest – Ilfov region

- *SO 9.1.1.Modernise the heat transport system in Bucharest City*
- *SO 9.2.1. Reduce the quantity of untreated urban wastewater and increase the coverage of public water supply systems in the Bucharest – Ilfov region*
- *SO 9.3.1. Increase the capacity of integrated waste management systems and reduce waste generation by reuse, recycling, in the Bucharest – Ilfov region*
- *SO 9.4.1. Increase urban mobility and improve the quality of passenger services by developing subway urban transport in the Bucharest-Ilfov Region*

Regional Operational Programme (Romania) 214-2020 (draft March 2014)

The Regional Operational Programme approaches regional development including by considering the need to ensure macroeconomic stability It is supplemented by the horizontal sectoral policies, aiming to provide a nurturing medium for the business environment, create jobs, including for disadvantaged persons and improve general public welfare.

In this sense, the ROP 2014-2020 proposes as its **general objective:**

increase economic competitiveness and improve living standards in he local and regional communities supporting the development of the business environment, the infrastructure conditions and services, to ensure the sustainable development of the regions, able to use resources efficiently, capitalise on their innovation potential and assimilate technological progress.

This objective is correlated to the European objective of increasing the competitiveness of the Regions and promoting social equity.

Under the general objectives, promotion of balanced participation of all the regions in the socio-economic development process with the capitalisation f the local/regional potential continue as key components of regional development in Romania.

The ROP general objective will be achieved through the established **specific objectives**:

- *Create and develop innovation and technological transfer entities in view of building their capacity to provide specific technological services to boost innovative initiatives, support and develop innovative enterprises*
- *Support companies in creating competitiveness in the regional economies and jobs*
- *Improve the energy efficiency in public buildings*
- *Increase the economic and social role of towns*
- *Sustainable economic capitalisation of the cultural and natural tourism potential in the regions*
- *Increase accessibility of rural and urban areas close to the TET-T network*
- *Develop accessibility and quality of social and medical service provision and stimulate transition from institutional to community-based services*
- *Reduce spatial concentration of poverty, by providing suitable housing conditions in disadvantaged communities, as well as by providing the with basic - medical, educational, social services in order to increase employment and provide social inclusion therein*

- *Improve the condition of the educational infrastructure to provide the necessary material prerequisites for a European-evel national educational process*
- *Develop the geographical coverage and inclusion of property registration in the Integrated Cadastre and Land Book System*

With these specific objectives, the ROP aims to direct the development and integration do regional economies by stimulating and encouraging all the development initiatives.

These specific objectives will be implemented by measures planned and promoted by the local and central government authorities, in partnership with various (public and private) stakeholders, in order to ensure sustainable and dynamic economic and social development, with efficient use of local and regional resources, in order to meet the general objective of the programme.

Government Programme 2013-2016

The Government Programme 2013-2016 assumes sustainable and efficient management of the natural resources in order to boost the economic benefits for the population, without prejudice to the right to a clean environment.

National Strategy and Action Plan for Water Management

In Romania, the preparation of a water management strategy and policy, ensuring coordination and control in the enforcement of domestic and international regulations in this area is provided by the Ministry of Environment and Climate Change.

Quantitative and qualitative water resource management, administration of water management works, and implementation of the national strategy and policy, in compliance with the relevant national regulations is provided by the "Romanian Waters" National Administration, through its subordinated river basin administrations.

The legal framework for sustainable water resource management is provided by the Water Law No. 107/1996 as amended.

The national strategy and policy for water management aims to implement a sustainable water management policy by ensuring quantitative and qualitative water protection, protection against the destructive impacts of water, and capitalisation of the water potential in relation to the demands of sustainable social development and in accordance with the water-related European Directives.

It is currently aimed to provide sustainable water management based on the enforcement of the EU legislation and especially of the Water Framework Directive and the Flood Directive, transposed by the Water Law 107/1996, as amended. In this context, the tools used in achieving the water related policy and strategy include the guideline scheme of river basin development and management, integrated water management by river basin, and adaptation of the institutional capacity to the requirements of integrated management.

National Management Plan for the National Share of the Danube River Basin (NDRBMP) and River Basin Management Plans (Olt, Jiu, Argeş-Vedea, Dobrgea-Litoral)

The National Management Plan for the national share of the international Danube river basin is Romania's contribution to the International Danube River Basin Management Plan developed under Article 13 of the Water Framework Directive.

The river basin management plans, and the National Management Plan were approved by HG 80/26.01.2011 on approving the National Management Plan for the part of the international Danube river basin included on the Romanian territory - Monitorul Oficial No. 265/14.04.2011. Implementing and monitoring the approved action programmes for the

significant sources of pollution will help meet the environmental objectives for the water bodies, good state and good ecological potential.

The National Management Plan for the National Share of the Danube River Basin is a summary of the Management Plans prepared for the river basins and the coastal area of the Black Sea on the Romanian territory. River Basin Management Plans are closely correlated to socio-economic development and are the starting point for human activity related actions, including water management actions at the basin and local and highlight the major factors that impact on water management in a river basin.

The declared goal of the National Management Plan for the National Share of the Danube River Basin is to provide *"long term protection, balanced and sustainable use of water resources and protect aquatic ecosystems, with the general objective of reaching (ecological and chemical) 'good state/good potential' in surface and groud waters"*

The **general environmental objectives of the NDMP** were developed based on the objectives stated in the Water Framework Directive (article 4, para.(1)) and aim to protect surface, ground waters and protected areas.

For surface waters, **the actions to implement, by 2015**, **the environmental objectives** of the Water Framework Directive related to the national share of the Danube River Basin were set as **management objectives** matching the four important problems identified, i.e.:

- pollution with organic substances;
- pollution with nutrients;
- pollution with hazardous substances and
- hydro-morphological modifications (interrupted longitudinal and lateral connectivity and changes of hydrological regime).

National Flood Risk Management Strategy for the medium and long term (FMS)

Under Directive 2007/60/CE, Romania developed a National Flood Risk Management Strategy for the medium and long term. [5]

The medium and long-term national strategy for flood risk management has as its declared goal to *"define a framework for coordinated, inter-sectoral guidance of all the actions, in order to prevent and mitigate the effects of floods on socio-economic activities, on the life and health of people and the environment"* and aims for an integrated management of water and related resources: land use planning and urban development, nature protection, agricultural and forestry development, protection of the transport infrastructure, of buildings and tourist areas, individual protection, etc.

The strategy has both general and specific objectives. The general and specific objectives of this strategy are economic, social and environmental.

- The economic objectives aim to protect the existing business infrastructure against floods and safeguard economic opportunities for future generations.

[5] Approved under Government Decision No. 846/2010, published in Monitorul Oficial of Romania, Part I, No. 626 of 6 September 2010.

- Social objectives aim to protect the population and human communities by providing an acceptable level of public protection and increase the capacity of society to develop under the assumed risk of flash floods (building resilience).
- The environmental objectives intend to ensure that, by implementing this strategy, the socio-economic objectives may be attained and a balance may be struck between economic-social development and the environmental objectives.

Flood management activities represent an issue of policy, short, medium and long-term plans and programmes, aimed to protect life, goods and the environment against flood events. These include:

- The National Flood Risk Management plan, to be prepared at river basin and space level;
- The National Flood Prevention, Protection and Mitigation Programme. This programme is prepared at the level of the national territory based on the flood risk management plans developed at river basin /space level;
- river basin, county, municipal, town and commune flood control plans developed under the existing legislation on emergency management and to be integrated under the name of operative response plans.

The strategy was devised for the 2010-2035 period and aims for an integrated management of waters and related resources: land use planning and urban development, nature protection, agricultural and forestry development, protection of the transport infrastructure, of buildings and tourist areas, individual protection.

The national plan for flood prevention, protection and mitigation, as an integral part of the National Management Plan for the Share of the Danube River Basin on the Romanian territory is a very important part of implementing Directive 60/2007/EC on the assessment and management of flood risks and, moreover, is a basis for the promotion and funding of future prevention and control works in all the hydro-geographic basins.

The Integrated Management Strategy for the Coastal Area and the Strategic Action Plan for the Rehabilitation and Protection of the Black Sea

The necessary actions for the development and implementation of the Protection and Rehabilitation of the Romanian Shore of the Black Sea against erosion and the promotion of integrated management of the coastal area, according to the relevant European recommendations have included the development and updating of the necessary legal framework for the tourist use of beaches and the preparation of the Integrated Management Plan for Black Sea coastal erosion protection and the establishment of priority rehabilitation and protection zones.

The measures included in the Romanian coastal rehabilitation Masterplan focus on: environmental restoration and improvement, preparing a plan and related rehabilitation works for the protection against coastal erosion. Consideration was given to the rehabilitation and protection of the coastline, adjacent land and terrestrial and marine ecosystems, and to the protection of the economic infrastructure and social facilities endangered by coastal erosion. A coastal area integrated monitoring program will also be implemented in order to support maintenance operations and works in the medium and long term (30 years).

Romania's Short- Medium and Long-Term Masterplan for Transport (preliminary draft 2013)

It is conceived to provide a clear development strategy for the Romanian transport sector for the next 20 years. In order to be used, it will have to provide feasible solutions for the challenges and requirements of the transport sector in Romania.

The Masterplan will identify the best projects and policies in response to the Romanian transport needs in the next 5-15 years, for all the modes of transport, providing a solid analytical base for the selection of such policies and projects.

The immediate results of the Masterplan include:

Outcome 1**:** *A long-term 2020-2030 plan, contributing to the sustainable development of Romania.*

Outcome 2*: Efficient use of financial resources in the transport sector*

Outcome 3*: Better connections and thus better trade with the neighbouring countries.*

Outcome 4*: Increase productivity in the Romanian industry and services and, implicitly, stronger economic growth and higher living standards*

Outcome 5*: A sustainable transport system*

Masterplan Objectives

The following objectives have been proposed for the masterplan projects:

- **Eomic efficiency:** the transport system must be economically efficient in regard to the transport operations and for the users themselves. Essentially, the benefits of the transport system should exceed the transport costs. Moreover, the transport system has to be configured so as to allow economic development at the national as well as at the regional levels. Investments should be favourable and fair to the Romanian citizens.
- **Environmental impactul**: the transport system should not have a negative environmental impact. Transport investment should minimise negative impacts on the physical environment.
- **Sustainability**: the so-called sustainable transport modes, more energy efficientand less emission intensive, should be developed with priority;
- **Safety:** investment in the transport sector should produce a safer transport system; and
- **Funding**: there is substantial deficit in the funding for the Romanian transport sector. More efficient transport tariff policies should be examined, such as the road user fee, especially for heavy vehicles. At project level, availability of EU funding from structural (FC and ERDF, Facilitaty" Connecting Europe" (ECF) funds and public-private partnership, PPP , will affect the possibility of project implementation and thus prioritisation.

Master Plan Function

The Masterplan will identify he projects and policies that best respond to the Romanian transport needs in the next 5-15 years, for all the modes of transport, providing a solid analytical base for the selection of such policies and projects.

The Masterplan will include:

- Projects under the 2014 – 2020 Operational Programme – immediate priority
- Major projects of national importance
- Major maintenance and capital repairs programmes Ancillary Projects to the above
- Modernisation (e.g. control and passenger information systems)
- Longer - term projects
- Projects involving further studies

National Land Use Development Plan (NLUDP)

Under Law No. 350/2001 on land use and urban development, as amended, Article 41 para. (1) the National Land Use Development Plan (NLUDP) is of a guideline nature and summarises the medium and long-term sectoral strategic plans for the whole territory of the country.

As a support document for complex and sustainable development, and regional development of the territory, the NLUDP acts as the basis for the medium and long-term sectoral strategic programmes and determines the size and development priorities on the Romanian territory, in keeping with the European requirements.

The recent development of some sections of the NLUDP looked at the priorities established in the **"Territorial Agenda of the European Union "**, accepted at the informal meeting of the European Ministers responsible for spatial planning and territorial development, held in Leipzig, on 24-25 May 2007.

The National Land Use Development Plan - NLUDP was developed into the following specialist sections, approved by the Romanian Parliament by law:

- ✓ Section I – Transport networks (approved by Law No. 363/2006);
- ✓ Section II - Water (approved by Law No. 171/1997, amended by Law No. 20 of 11/01/2006);
- ✓ Section III - Protected areas (approved by Law No. 5/2000);
- ✓ Section IV - Settlement network (approved by Law No. 351/2001);
- ✓ Section V - Areas at natural risk (approved by Law No. 575/2001);
- ✓ Section VIII - Areas with tourism resources (approved by Emergency Ordinance No. 142/2008 approved by Law No. 190/ 2009).

2.4.3 National and Regional Programmes, Plans and Strategies for Bulgaria

National Regional Development Strategy 2012 – 2022

The National Regional Development Strategy (NRDS) for the period 2012-2022 is the fundamental document defining the strategic framework of the government policy for attaining balanced and sustainable development of the country's regions and for overcoming the intra- and interregional differences/disparities in the context of the all-European policy of cohesion and achieving smart, sustainable and inclusive growth.

The key strategic goal of NRDS is to achieve sustainable integrated regional development based on the utilization of local potential and cohesion between the regions in an economic, social and territorial aspect. The RO-BG CBC Programme contributes to this purpose in its very essence of transboundary cooperation, further enhancing the economic, social and territorial cohesion.

The key strategic goal of NRDS mainstreams into four strategic objectives as follow:

Strategic objective 1: Economic cohesion in a European, national and intra-regional context through development of the regions' own potential and environmental protection.

Strategic objective 2: Social cohesion and reduction of regional disparities in the social sphere through opportunities for development and realization of human capital.

Strategic objective 3: Territorial cohesion and development of cross-border, inter-regional and trans-national cooperation.

Strategic objective 4: Balanced territorial development through strengthening the network of urban centers, improving connectivity in the regions and the quality of the urban environment in populated areas.

There strategic objectives are contributed to by all of the priority axes of the RO-BG CBC Programme, and especially by the investment priorities for enhancing the regional mobility, integrating cross-border mobility, joint local employment initiatives, protecting, promoting and developing the natural heritage and green infrastructures, etc.

District Strategy for Regional Development for each of the relevant districts 2014-2020

- Regional Development Strategy of Vidin 2014-2020 defines medium-term objectives and priorities of the state policy for regional development of the area and its correlation with other structural policies. It has three strategic objectives: 1) Accelerate the economic development of Vidin region; 2) Raising living standards of Vidinregion; and 3) Connectivity and development of territorial cooperation to achieve balanced and sustainable development.
- Regional Development Strategy of Vratsa 2014-2020 has the vision of making Vratsa attractive industrial, commercial, cultural and tourist center of northwestern Bulgaria, effectively utilizing its potential for sustainable growth, development of rural areas and the Danube municipalities with developed local economy, stable employment and improved infrastructure. Its strategic objectives include: 1) Promoting and developing a competitive local economy; 2) Upkeeping and development of human capital in the municipalities in the region with a focus on young people, the elderly and vulnerable social groups; and 3) Improvement and development of territorial stability and coherence of the municipalities in the region.
- According to the regional development strategy of Montana for the period 2014 - 2020 (adopted at the Regional Development Council meeting of 25.6.2013) the vision is: "Montana - able to maintain, improve and utilize its potential for development through support for investment and growth of the national policy with mobilized domestic resources and motivated to improved quality of life." Strategic objectives in support of this vision are: 1) Improving the competitiveness of the regional economy and increase economic activity; 2) Upkeeping and improving the quality of human capital through social development; and 3) Improve territorial sustainability and coherence.
- The vision for the regional strategy (according to draft dd. May 2013) for development of Pleven District for 2014-2020 is "Pleven - economic and agricultural center of the Danube region, functional and spatial integration with neighboring areas, socially cohesive and stable, with infrastructure and good transport accessibility, with provided protection of natural and cultural heritage." The strategic objectives are: 1) economic growth by revitalizing traditional industries and increasing sectoral competitiveness and employment; 2) Achieving social cohesion by strengthening and human capital development ; 3) Development of a modern infrastructure , high utility and improved living conditions in the urban environment; and 4) Preservation of natural and cultural heritage for future generations.
- The vision of the regional strategy (acc. final draft) for the development of Veliko Tarnovo is "emblematic of Bulgaria and dynamic Danube region within which are implemented various and complementary industrial, transportation and logistics, agricultural, tourist, cultural and educational activities attractive to investors and tourists and ensuring a high quality of life for residents of the area." Strategic objectives are: 1) Economic growth with higher rates than the national average; 2) Social security , equity and viability ; 3) Modern infrastructure, high utility and

unique cultural heritage and preserved environment; and 4) Good planning and management, cooperation and inter-municipal cooperation.

- The vision for development of Rousse District to 2020 is "Area of national importance, an integral part of the Danube area with well-developed economy and infrastructure comparable to European standards for quality of life, conserving natural and cultural heritage that stands out as a significant factor in national, transnational, interregional, cross-border and European cooperation, combining the most effective use of the potential of local resources for sustainable, inclusive and smart growth." The main objective for the development of Rousse is specified in four strategic objectives which define the basic directions of the area development during the next planning period: 1) Economic convergence in intraregional, national and European level through the development of their own potential of Rousse and the use of EU instruments; 2) Social cohesion by tackling interregional and intraregional differences in the social sphere, reducing the risk of social exclusion and creating conditions for the development and implementation of human capital ; 3) Territorial cohesion through balanced, integrated and sustainable development of transport and communication infrastructure in the area, improving the urban environment and intensification of cross-regional, cross-border and transnational cooperation; and 4) Environmental protection and energy efficiency.
- The draft vision that sets the framework for implementation of the Regional Development Strategy for 2014-2020 Silistra (draft dd. 22/05/2013) is as follows: "District Silistra - improved and utilized its growth potential and implementing its identity, a sustainable growing region of Bulgaria and the Danube area with new prospects and quality of life of the population." Silistra Regional Strategy 2014-20 defines the following strategic objectives: 1) development of a competitive economy by encouraging innovation in all sectors and the use of local potential; 2) raising the standard of living by creating new jobs, investing in people and integration of disadvantaged groups; and 3) improving territorial sustainability and achieving balance and coherence at district, regional, national and international level.
- The main strategic objective underlying the draft development strategy of Dobrich to 2020 is Dobrich to continue to build on its comparative advantages, dynamic local economy, effectively absorbing funds from the national budget and EU funds. On this basis, it sets out the following objectives: 1) To improve the quality of human resources, increasing the level of employment and income and to achieve social integration of disadvantaged groups; 2) Creation of conditions for increasing competitiveness to achieve dynamic development of the region in reducing inequality both inside and as regards neighboring areas; and 3) Promoting balanced regional development by establishing appropriate patterns of spatial improvement of environmental conditions, efficient mechanisms for cross-border and interregional cooperation.

  Considering the above-listed strategic objectives set out in the District Development Strategies for the districts within the cross-border area, it is evident that the 2014-2020 RO-BG CBC Programme is in full compliance with these objectives and will contribute to them under all of its priority axes.

Regional Development Plan for each of the relevant NUTSII regions 2014 – 2020

- Regional Development Plan for the North-West Region (NWR) – The adopted vision that sets the framework for the implementation of the Plan is: "NWR overcoming significant socio-economic retardation and severe structural and demographic problems in its development through appropriate investment for recovery and strengthening of specific potential for growth and the creation of conditions and prerequisites for catching pace of development at national and European level."

RDP of NWR region has the following strategic objectives: 1) Development of a competitive economy by development's potential of NWR; 2) Preservation and development of human capital; 3) Improving territorial robustness and coherence. These will be met through the implementation of a set of priorities that will then be objectified through measures and activities.

- Regional Development Plan for the North Central Region (NCR) – Briefly formulated vision for development of NCR is: "North Central Region - fast and sustainable growing European region, an integral part of the Danube area where young people see their future and personal development." Strategic objectives set in the development plan to achieve the vision are the following: 1) Economic cohesion - achieving average levels of employment, labor productivity and the use of innovation in the economy, typical of the region in the Danube area; 2) Social cohesion - overcoming interregional and intraregional differences in social sphere and reducing the risk of social exclusion and poverty; 3) Territorial Cohesion - connectivity and balanced, integrated and sustainable development of the territory and settlements; 4) Environmental protection, according to the challenges of climate change and the implementation of European and national standards to reduce pollution and energy consumption and promoting the use of renewable energy.
- Regional Development Plan for the North-East Region (NER) – the vision for development of NER is: "NER of Bulgaria - open to Black Sea and to the world Bulgarian territory, preserving a rich history and material culture, fertile land, human capital, infrastructure, tourism image and applying its specific potential to achieve overall economic progress and improved quality of life." Strategic objectives set in the development plan to achieve the vision are as follows: 1) Increasing the competitiveness of the region through the activation of specific potential, combined with environmental protection; 2) Increasing the social capital of the region by improving the standard of living and quality of the living environment; 3) Balanced regional development and cooperation by improving connectivity and functional integrity of the system of urbanization centers.

  The RO-BG CBC Programme 2014-2020 will contribute to a large extent to meeting these objectives by enhancing the regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure; developing environment-friendily and low-carbon transport systems, including river and sea transport, ports and multimodal links; protecting, promoting and developing cultural and natural heritage.

National Concept for Spatial Development for the period 2013 – 2025

The ultimate goal of the National Concept for Spatial Development for the period 2013-2025 has been formulated as follows: "Spatial coordination of the processes in the national territory through establishing a spatial land-use planning base and a regulator for implementation of both regional planning and individual socio-economic sectoral planning at the national level in the context of the common European spatial development for the purposes of attaining complex integrated planning". The strategic objectives are as follows:

Strategic objective 1: Integration in the European space - Development of national and cross-border/trans-border transport, energy, urbanization, cultural and ecological corridors with a view to achieving territorial cohesion, cooperation and integration within the region and in the European space.

Strategic objective 2: Polycentric territorial development - Strengthening of a moderately polycentric network of core-cities with improved quality of the urban environment, contributing to the achievement of balanced territorial development and diminishing of the disparities between central urban and peripheral rural areas.

Strategic objective 3: Spatial cohesion and access to services - Development of the national engineering and social infrastructure for improvement of the spatial cohesion of the regions and urban centres and the access to education, health care, social and culture-related services.

Strategic objective 4: Well-preserved natural and cultural heritage - Preservation and development of the national system of protected natural and cultural sites for the purpose of maintaining of the biological balance, the spatial natural and cultural identity of the territory and for integrating their values into the modern life.

Strategic objective 5: Promoted development of specific areas - Integrated planning and promoted development of territories with specific characteristics (Black Sea coast, Danube river basin, mountain, border and peripheral areas) with a view to preserving and effective use of their natural, economic, social and cultural development potential.

Strategic objective 6: Competitiveness through growth and innovation areas - Increasing the competitiveness of the Bulgarian territory through government support for growth and innovation areas in the urban centres of the high levels of the polycentric model.

The RO-BG CBC Programme 2014-2020 will contribute to a large extent to meeting these objectives by enhancing the regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure; developing environment-friendily and low-carbon transport systems, including river and sea transport, ports and multimodal links; protecting, promoting and developing cultural and natural heritage.

Europe 2020: National Programme for Reforms – update 2013

This document reports the progress achieved in achieving the national targets set in 2011 in pursuit of the common EU targets of the Europe 2020 Strategy. There are a number of country specific recommendations (CSR), as well as national targets (NT) and flagship initiatives.

CRS include: public finance; pension system; employment and social inclusion; education and scientific research and development; administrative capacity; public procurement; energy efficiency;

NTs focus on employment, research and development, climate-energy, education, poverty.

There are four additional measures in pursuance of flagship initiatives set in Europe 2020 Strategy: 1) Innovation Union; 2) Digital Agenda for Europe; 3) Resource efficient Europe; and 4) Promoting a return to growth and competitiveness today and tomorrow.

The RO-BG CBC Programme will mainly contribute to the efforts for enhancing the employment, administrative capacity and climate-energy, and while not specifically addressing a number of the CRS, such as public finance, pension system, public procurement, it is not in discrepancy to these.

National Development Programme Bulgaria 2020

The National Development Programme Bulgaria 2020 (NDP BG2020) is the leading strategic and programming document detailing the objectives of the development policies of the country to 2020.

The main purpose of the NDP BG2020 is to achieve quality and balanced long-term economic growth. Three goals are set out to meet this purpose:

1. Raising the standard of living through competitive education and training, creating conditions for quality employment and social inclusion and ensuring accessible and quality health care.

2. Building of infrastructure networks, providing optimal conditions for the development of the economy and quality and healthy environment for the population.

3. Enhancing the competitiveness of the economy by ensuring a favourable business environment, promotion of investments, application of innovative solutions and improving resource efficiency.

The RO-BG CBC Programme complies with these objectives by further aiming to promote sustainable and quality employment, enhancing regional mobility, protecting and restoring biodiversity, promoting investment to address specific risks ensuring disaster resilience and developing disaster management systems.

OP Transport and Transport infrastructure 2014 -2020 (final draft)

The overall objective of Operational Programme "Transport and Transport Infrastructure" 2014-2020 is: "Development of a sustainable transport system". It is crucial in programming period 2014-2020 to be ensured continuity and logical sequence of investments in programming period 2007-2013 guaranteeing the completion of main directions in which investments are already made in order to be possible the construction of "core" network and cross border sections of Trans-European transport network. The following priority axes are identified:

1. Development of railway infrastructure along the "core" and "comprehensive" Trans-European Transport Network;

2. Development of road infrastructure along the "core" Trans-European Transport Network;

3. Improvement of intermodal transport services for passengers and freights and development of sustainable urban transport;

4. Innovations in management and services - establishment of modern infrastructure for traffic management and transport safety improvement;

5. Technical assistance.

Concerning the improvement of navigation in the joint Bulgarian-Romanian sector of the Danube River common activities of Bulgarian and Romanian side are needed. The RO-BG CBC Programme complies with the priority axes set in OPTTI by enhancing regional mobility. In the next programming period the implementation of projects for developing the transport system which contribute to the effective connectivity of the transport network and for removing bottlenecks in it, reducing congestion, noise and pollution levels, improving safety, promoting the use of environmentally friendly modes of transport, creating more and better jobs, etc., should also continue.

OP "Regions in growth" 2014 – 2020 (draft 3 dd. 16.09.2013)

In its role of integrated regional development programme, OPRG 2014-2020 will assist in achieving the following thematic objectives via the implementation of particular investment priorities under the European Regional Development Fund as follows: Thematic objective (TO) 4. Supporting the shift to a low-carbon economy in all sectors with the following investment priorities: Promoting the energy efficiency and the use of renewable energy, including in the public buildings and the residential sector; TO 5: Promoting climate change adaptation and risk prevention and management; TO 6. Protecting the environment and promoting resource efficiency, with the following investment priorities: Preservation, popularization and development of the cultural and natural heritage; Actions for improving the urban environment, including terrains renewal for secondary building processes and decrease of air pollution; TO 7. Promoting sustainable transport and removing bottlenecks in key network infrastructures, with the following investment priorities: Development of environmentally-friendly and low-carbon transportation systems and promoting sustainable urban mobility; TO 9. Promoting social inclusion and combating poverty, with the following investment priorities: Investment in the healthcare and social infrastructure that contributes for the national, regional and local development; TO 10. Investing in education, skills and lifelong learning with the development of

educational infrastructure and training infrastructure with the following investment priorities: Investing in education with the development of educational infrastructure and training infrastructure; TO 11 – Enhancing institutional capacity and ensuring an efficient public administration with strengthening the institutional capacity and the efficient public administration and public services that are related with the implementation of the European Regional Development Fund. The OPRG is intended to include one main priority that is targeted towards the urban development. The National Spatial Development Concept has identified the towns that are in need of support for integrated urban development under priority axis 1 of OPRG 2014-2020 that includes 67 towns.The priority axes of OPRG are as follows: 1) Sustainable and integrated urban development; 2) State educational infrastructure; 3) State healthcare and regional social infrastructure; 4) Regional tourism; 5) Regional road infrastructure; 6) Risk prevention; 7) Technical assistance.

The RO-BG CBC Programme will contribute to these through its priorities for developing a skilled, inclusive and well connected region by promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training, as well as enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure.

OP Environment 2014-2020 (draft 2 dd. 10.09.2013)

The priority axes of OPE are as follows:

PA 1 Water – aiming at: Construction of water infrastructure in agglomerations with more than 10 000 eq.c. and more than 2,000 eq. c.; Strengthening the monitoring of water - quantity and water quality; Establishment of National Centre for Water Management in Real Time;

PA 2 Waste – aiming at measures under the hierarchy to improve the management of household hazardous waste and to implement legislative requirements;

PA 3 Natura 2000 and biodiversity – aiming at: Measures of protected areas Natura 2000; Implementation of measures to improve the knowledge of ecosystems and their services under the EU Strategy for Biodiversity 2020;

PA 4 Support for POS and ARC applying ESIS - strengthening legislation for the formation, implementation and execution of POS and ARC, as well as improving the administrative capacity of the responsible structures;

PA 5 Technical Assistance – including activities aimed at providing the necessary support for the management and implementation of the OP; activities aimed at „closing" of the programming period 2007 – 2013; and activities aimed at providing the necessary support for publicity and promotion of OPOPE actively supports the implementation of macro- EU strategy for the Danube region.

Implementation of the program will complement the full synergy, a clear demarcation of the priorities of the Danube Strategy and Mechanism connectivity of Europe, CBC Bulgaria – Romania, CBC Bulgaria - Serbia and transnational program "River". In this regard, the OPE will include projects that meet the objectives of the strategy, it will take into account and reported results and additional needs in terms of project implementation DANUBE PARKS 1.0 and 2.0.

The RO-BG CBC Programme will contribute to these mainly through its priorities for protecting and restoring biodiversity and soil and promoting ecosystem services, including NATURA 2000 and green infrastructures in the cross border area.

OP Human Resource Development 2014 – 2020 (draft dd. March 2014)

The strategic objective of the HRD OP is to improve the quality of life of people in Bulgaria through enhancement of the human capital, achievement of high employment levels,

improvement of the productivity, access to high-quality education and lifelong learning and strengthening the social inclusion. OP HRD will actively contribute to the implementation of the two objectives of the EU strategy "Europe 2020". These are the objectives in the field of employment and combating poverty and social exclusion. HRD OP is based on three pillars. These are: (1) higher and better jobs; (2) Reducing poverty and promoting social inclusion; (3) Upgrading of public policy.

The Operational programme will focus on achievement of the following priority axes: 1) Increasing the labour supply and the quality of the labour force; 2) Reducing poverty and promoting social inclusion; 3) Modernization of the institutions of the labour market, social inclusion and health; 4) Transnational cooperation; 5) Technical assistance.

The RO-BG CBC Programme will contribute to these mainly through its priorities for promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training, as well as enhancing regional mobility.

OP Innovation and competitiveness 2014 – 2020 (draft dd. April 2014)

OPIC Strategy 2014-2020, as part of the implementation of EU structural funds and investment (ESIS) in Bulgaria is closely linked to the objectives for growth and employment (Growth and Jobs) and contribution of Bulgaria to achieve three complementary types of growth according to the 2020 Strategy: smart, sustainable and inclusive growth.

OPIC has three priority axes: 1) Innovation, entrepreneurship and growth potential; 2) Energy and Resource Efficiency; and 3) Technical assistance. Under OPIC 2014-2020 opportunities for complementary activities in the implementation of macro- EU strategy for the Danube region will be sought. Corresponding priority areas for cooperation between OPIC and the 2014-2020 Strategy for the Danube region are related to: Promoting sustainable energy (Priority 2); Promotion of culture and tourism, people to people contacts (Priority 3); Develop a „knowledge society" (Priority 7); and Development of the Competitiveness of enterprises (Priority 8).

The RO-BG CBC Programme will contribute to these mainly through its priorities for developing a skilled, inclusive and well connected region by promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training, as well as enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure.

OP Science and Education for Intelligent Growth 2014 -2020 (draft dd. 1.1.2014)

OPSEIG has the following priority axes: 1) Research and technological development; 2) Education and lifelong learning; 3) Educational environment for active social inclusion; 4) Techical assistance. The OP includes a number of activities that are fully consistent with the spirit of the EU Strategy for the Danube Region in terms of education, training, lifelong alive of the mobility of researchers and students, and through Priority "CBC" there will be a possibility that the exchange of best practices and experience between the Danube in these areas.

The RO-BG CBC Programme will contribute to these mainly through its priorities for developing a skilled, inclusive and well connected region by promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training, as well as enhancing regional mobility.

OP Good Governance 2014 -2020 (draft dd. 19.03.2014)

The vision of the Operational Programme "Good governance" is based on the understanding that strong, effective and transparent government and judicial institutions are directly

horizontally to the achievement of all the goals set in the strategy "Europe 2020", the more that these objectives are interrelated. The priority areas identified are: 1) Administrative services and e-governance; 2) Efficient and professional management in partnership with civil society and business; 3) Transparent and efficient judiciary; 4) Technical assistance for the administrative structures involved in the management and utilization of the ESIS; and 5) Technical assistance.

Within Priority 2 OPGG activities related to the implementation of the fourth pillar of the EU Strategy for the Danube Region " Strengthening the Danube Region will be supported, as well as management of environmental risks, investing in staff and skills, increase of institutional capacity and cooperation , and cooperation for dealing with security issues and organized crime. Training will also be provided related to the management of the risks of disasters, accidents and natural disasters.

The RO-BG CBC Programme may contribute to the development and implementation of these plans through its Priority Axis 3 by promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems.

Programme for the Development of Rural Areas 2014 – 2020 (draft)

In accordance with the policy objectives of the EU for rural development, the Rural Development Programme for the period 2014 - 2020 has three objectives: 1) Improving the competitiveness of agriculture and farm viability , increasing incomes and ensuring the delivery of quality food products; 2) Protection of ecosystems and sustainable management and use of natural resources in agriculture, forestry and food industry; 3) Socio- economic development of rural areas, providing new jobs , poverty reduction , social inclusion and a better quality of life.

The program has three horizontal priorities: Promoting innovation in production, market organization and management; Prevention and adaptation to climate change; Preservation and restoration of the environment.

The RO-BG CBC Programme will contribute to these through its priorities sustainable and quality employment and supporting labour mobility, joint local employment initiatives, joint training, as well as improving the protection and sustainable use of natural heritage in the cross border area.

National Strategy for Poverty Reduction and Promotion of Social Inclusion 2020

The National Strategy for Reducing Poverty and Promoting Social Inclusion 2020 aims to improve the quality of life of vulnerable groups in society and create conditions for their full-fledged realization.

The 2020 Strategy lists priorities such as: providing employment opportunities and boosting labor income through active labor market participation; providing equal access to quality pre-school and school education; equal and efficient access to quality healthcare; abolishing the institutional model of care and developing cross-sector social inclusion services; ensuring sustainable and adequate social payments; improving capacity and cooperation in the spheres of education, healthcare, employment, and social services through the implementation of common social inclusion goals; Providing an accessible environment - physical, institutional and informational, and accessible transport; Improving the living conditions of vulnerable groups and support to the homeless; Working in partnership to tackle poverty and social exclusion and their consequences.

The RO-BG CBC Programme will contribute to these mainly through its priorities for developing a skilled, inclusive and well connected region by promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training, as well as enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure.

National strategy for the protection of the biodiversity and National plan for the conservation of biodiversity

National strategy for biodiversity conservation has the following priorities: strengthening the scientific basis of environmental activities; support legislative initiatives; extend and strengthen the network of protected areas; environmental education and cooperation of consulting services; development and implementation of policy for ecotourism development; promoting the protection of the Black Sea; promote the conservation of biodiversity in the Balkans.

National plan for the conservation of biodiversity is not updated since 2010. Long-term strategic goal of the plan for the period 2005-2010 is protection, restoration and sustainable management of biodiversity in the country for creation of optimal environment, and conditions of human life. Strategic goal of the plan is halting the loss of biodiversity by 2010.

The RO-BG CBC Programme will contribute to these mainly through its priorities for improving the protection and sustainable use of natural heritage and resources and cultural heritage in the cross border area.

National priority action framework for Natura 2000

In the new EU programming period 2014 - 2020, Bulgaria sets specific strategic conservation priorities to be implemented in the territory of protected areas NATURA 2000. Each priority is defined indicative range, whose implementation will ensure the achievement of priorities. These strategic priorities are the following: 1) Management planning of NATURA 2000 protected areas; 2) Sustainable management of NATURA 2000 protected areas; 3) Sustainable use of ecosystem services for optimum public benefits, and other factors for socio-economic development of regions; 4) Elaboration, development and maintenance of a shared vision for the ecological network Natura 2000 in Bulgaria; 5) technical assistance.

The RO-BG CBC Programme will contribute to these mainly through its priorities for improving the protection and sustainable use of natural heritage and resources and cultural heritage in the cross border area.

Energy Strategy of Bulgaria to 2020 (published in State Gasette 43/07.06.2011)

The main priorities of the Energy Strategy can be summarized in the following five directions: to guarantee the security of energy supply; to attain the targets for renewable energy; to increase the energy efficiency; to develop a competitive energy market and policy for the purpose of meeting the energy needs, and to protect the interests of the consumers. These priorities also determine the Government's vision for development of the energy in the coming years, namely:

- Maintaining of a safe, stable and reliable energy system;
- The energy sector remains a leading branch of the Bulgarian economy with definite orientation to foreign trade;
- Focus on clean and low-emission energy – nuclear and from renewable sources;
- Balance between quantity, quality and prices of the electric power produced from renewable sources, nuclear energy, coal and natural gas;
- Transparent, efficient and highly professional management of the energy companies

The RO-BG CBC Programme will contribute to these mainly through its priorities for developing a skilled, inclusive and well connected region by promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training, as well as enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure.

National Strategy for Management and Development of the Water Sector (to 2037)

The long-term strategic objective of the country in the water sector is “Sustainable use of water resources, providing optimum levels for present and future needs of the population and the economy, and aquatic ecosystems.” Main aims of NSMDWS are: 1) Ensure the provision of water for households and businesses in terms of climate change leading to drought; 2) Maintaining and improving the condition of surface and underground waters; 3) Improving performance in integrated water management as economic resource; 4) Reduce the risk of flood damage.

The RO-BG CBC Programme will contribute to these mainly through its Specific Objective 3.1 to improve joint risk management in the cross-border area .

Management Plans for River Basins for the period 2016-2021

The Management Plan for River Basins for the period 2016-2021 – Danube river basin is currently in process of preparation.Activities on the update of RBMP will be implemented in the period January 2013-December 2015 is projected to be made by BD Pleven.

There will be update in June 2014 (according to the preparedwork progrrame) on the conservation objectives of environmental surface and ground water bodies and areas water protection, including assessment of the degree of implementation of purposes of the first RBMP and analysis of the causes of their failure.

Management plan for the river basins in the Danube region (2010-2015)

The main objective of the RBMP is to optimize water management through integrated approach at the basin level, sustainable use of water resources and achieve good status in all waters. All waters and water bodies shall be protected from depletion, pollution and damage in order to maintain the required quality and quantity of water and a healthy environment, conservation of ecosystems, landscape preservation and prevention of economic damages, including:

- achieve good ecological status of surface waters;
- good quantitative and chemical status of groundwater;
- reducing the need for water treatment prior to use;
- ensuring the development of aquatic ecosystems and associated terrestrial ecosystems

Objectives of environmental protection are directed to the main categories surface waters to achieve good status in terms of quantity and quality, and are as follows:

- For natural water bodies - maintaining and improving good ecological and good chemical status by 2015;
- For natural water bodies - preventing deterioration of ecological status and achieve good, protection and improvement of good chemical status by 2015;
- For natural water bodies - preventing the deterioration of the ecological and chemical status and achieve good until 2015;
- For artificial and heavily modified water bodies - maintaining and improving good ecological potential and good chemical status by 2015;
- For artificial and heavily modified bodies - to prevent the deterioration of the ecological potential and achieve good conservation and enhancement of good chemical status by 2015]
- For artificial and heavily modified water bodies - to prevent the deterioration of the ecological potential and chemical conditions and achieve a good 2015.

The targets set for surface waters must be met by 2015. For their implementation in RBMP are provided basic and additional measures and special exceptions.

Objectives of environmental protection in terms of water resources are related to the quantity and quality of groundwater. Objectives for water protection are aimed at each groundwater body to achieve good chemical status and quantitative status of groundwater. The objective of groundwater is to achieve "good status". "Good" is determined by "good chemical status" and "good amount" of water bodies.

The targets set for groundwaters must be met by 2015. For their implementation in RBMP are provided basic and additional measures and special exceptions.

The objectives for the areas for water protection are the following: For Protected Areas and areas designated for the protection of habitats and species in which the maintenance or improvement of the status of water is an important factor in their protection:

- Ensure sustainable development of aquatic ecosystems and associated terrestrial ecosystems in the areas by 2015.

For areas where the waters are sensitive to nutrients, including: vulnerable zones and sensitive areas:

- Ensure sustainable development of aquatic ecosystems and associated terrestrial ecosystems in the areas by 2015.
- For areas where the waters are sensitive to nutrients, including: vulnerable zones and sensitive areas

For protection zones of drinking water:

- Reducing the need for water treatment before their use and ensuring the project in the amount of water intake facilities to 2015.

The RO-BG CBC Programme will contribute to these mainly through its priorities for ensuring disaster resilience and developing disaster management sustems and specifically through its Specific Objective 3.1 to improve joint risk management in the cross border area.

Black Sea Management Plan (2010-2015)

The main objective of the RBMP of the Black Sea Basin Directorate is all waters, including coastal sea waters and associated ecosystems to reach "good status" by 2015. Specific objectives oft he Plan are related to prevention of deterioration and improvement of the water quality and aquatic ecosystems; ensuring the sustainable use of water, reduce pollution and mitigate the effects of floods and droughts; climate change. There will be an update in June 2014 (according to the prepared work programme) on the conservation objectives of environmental surface and ground water bodies and areas water protection, including assessment of the degree of implementation of purposes of the first RBMP and analysis of the causes of their objectives.

So far the goals and indicative activities oft he Programme are consistent with the measures in the Management Plan for the Black Sea region (RBMP 2010 - 2015) under the Water Framework Directive 2000/60/EC (WFD) in order to prevent deterioration of the ecological status of surface waters.

Flood Risk Management Plans (FRMP)

These plans are prepared by the Basin Directorates (BD) pursuant to Directive 2007/60/EC, transposed into Bulgarian legislation with the amendment of the Water Act (WA) of 06.08.2010 (Chapter Nine “Protection from harmful effects of water"). The main stages of this process are: Ex-ante assessment of flood risks (EAAFR) and identification of areas with likely significant flood risk (ALSFR); Mapping of the threats and the risk of flooding; Setting goals and priorities for reducing the risk of flooding; Prepare a program of measures to manage the risk of flooding; Public information and public consultation in the development of FRMP. The deadline for development of FRMP is December 2015. At present, BD have completed the EAAFR and ALSFR are established for each BD under order by the Minister of Environment and Water. The purpose of EAAFR is, based on the available information on past floods, to assess the potential future flood risk to human health, business, the environment and cultural and historical heritage. EAAFR makes analysis of areas where future occurrence of floods is likely, as well as simplified modeling of the boundaries of the flood with a probability of occurrence of 1% in some of the areas and assessment of potential risk according to accepted national criteria. ALSFR are yet to undergo detailed mapping and assessment of flood risk.

The RO-BG CBC Programme may contribute to the development and implementation of these plans through its Priority Axis 3 by promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems.

The period of RO-BG CBC Programme 2014-2020 coincides with the implementation of river basin management plans for the period 2010-2015, the update/development and implementation of the RBMP and FRMP for the period 2016 - 2021, as well as the update of the RBMP and FRMP for the period 2021 - 2027.

Strategy for the management and development of water supply and sewerage in the Republic of Bulgaria

The main objective of this strategy is to improve the management of water and wastewater sector and to improve the quality of water and sewerage services by offering comprehensive measures to achieve them. Based on this four objectives are defined to create preconditions for its implementation: 1) Creating conditions for effective management of the sector and an integrated approach to solving problems; 2) Creating conditions for the involvement of the private sector, the interests of society; 3) Application of structural management approach, taking into account regional planning and to ensure economies of scale; 4) Improving the quality of water and sewerage services and reaching levels and standards of these services in the European Union.

The RO-BG CBC Programme may contribute to the development and implementation of these plans through its Priority Axis 3 by promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems.

Strategic Action Plan for Environmental Protection and Rehabilitation of the Black Sea (adopted by Resolution № 282 of the Council of Ministers of 21.04.2009)

The Strategic Action Plan for Environmental Protection and Rehabilitation of the Black Sea 2007 (SAPEPRBS) will adhere to three key principles of environmental management. They are: Integrated Coastal Zone Management (ICZM); Ecosystem approach; and Integrated River Basin Management (IRBM). SAPEPRBS reaffirmed four priority transboundary problems expressed in previous plan from 1999, as amended in 2002 that require concerted efforts by all Black Sea littoral states. They are: eutrophication / nutrient enrichment; changes in living marine resources; chemical pollution (including oil); and changes in biodiversity / habitat, including the occurrence of alien species. It was decided that these areas and their causes could be addressed efficiently and accurately by the four objectives of the quality objectives of the ecosystem (EcoQOs). Four EcoQO and associated targets are:

1: Storage of commercial marine living resources.
- 1a: Sustainable use of available fish and other living marine resources for commercial purposes.
- 1b: Restore / rehabilitate the availability of commercial marine living resources.

2: Preservation of diversity and habitat of the Black Sea.
- 2a: Reduce the risk of extinction of endangered species.
- 2b: Conservation of coastal and marine habitats and landscapes .
- 2c: Reducing and managing human intervention

3: Reduce eutrophication .

4: Ensure good water quality for human health, its use in recreational and Aquatic Biota
- 4a: Reduce pollutants derived from land-based resources, including atmospheric emissions.
- 4b: Reduce pollutants come from vessels and facilities on land.

The RO-BG CBC Programme will contribute to these mainly through its priorities to improve joint risk management in the cross-border area as well as to improve the protection and sustainable use of natural heritage and resources and cultural heritage.

Program for Maritime Affairs and Fisheries 2014-2020 г (second draft)

The overall objective of the intervention by PMAF is a dynamic and sustainable development of fisheries and aquaculture in the period 2014-2020.The program follows and contributes to achieving the set priorities for fisheries and aquaculture of the Union: 1) Promoting sustainable characterized by resource efficient fisheries and aquaculture, including associated processing; 2) Promoting innovative, competitive and knowledge based fisheries and aquaculture, including associated processing; 3) Promoting the implementation of the CFP through the pursuit of specific objectives; 4) Increasing employment and territorial cohesion.

The RO-BG CBC Programme will contribute to these mainly through its priorities for promoting sustainable and quality employment and supporting labour mobility, joint local employment initiatives, information and advisory services and joint training.

National action plan for renewable energy sources 2020

National policy to encourage the production of energy from renewable sources has the following objectives: 1) promoting the development and use of technologies for production and consumption of energy from renewable and alternative energy sources; 2) promoting the development and use of technologies for production and consumption of biofuels and other renewable fuels ; 3) diversification of energy supplies; 3) increase the capacity of small and medium producers of energy from renewable and alternative sources of energy and producers of biofuels and other renewable fuels; 4) environmental protection; 5) create conditions for achieving sustainable development at local and regional level.

The RO-BG CBC Programme will contribute to these mainly through its priorities for protecting and restoring biodiversity and developing environment-friendly low-carbon transport systems.

Third National Action Plan on Climate Change 2013-2020

The main strategic objective of the Third National Action Plan on Climate Change (NAPCC) is to outline the framework for action in the fight against climate change for the period 2013-2020, and to turn the country's efforts to actions that reduce the negative impact of climate change and the implementation of commitments.The main goal of the plan is reducing greenhouse gases in Bulgaria and implementation of existing EU legislation in the field of climate change. Separate priority axes for development of the sector and the measures for each priority axis are set. Measures are grouped in five priority areas: Priority 1: cleaner production of electricity from existing coal plants; Priority 2: Transition to a low carbon energy mix; Priority 3: The central heating system - a tool for low carbon energy; Priority 4: Accelerated penetration of decentralized energy; Priority 5: Development of low-carbon transport networks and distribution of electricity and natural gas.

The RO-BG CBC Programme will contribute to these through its priorities for developing a skilled, inclusive and well connected region by improving the protection and sustainable use of natural heritage and resources and developing environment-friendly low-carbon transport systems.

National Strategy for the Development of Forestry of the Republic of Bulgaria for the period 2013 - 2020

The vision of NSDF is: By 2020, Bulgaria will have vibrant, productive and multifunctional forests, sustainable, competitive and innovative forestry and biodiversity preserved, quantity and quality of water resources in forest areas. The sector will contribute to the economic development of the country, will provide conditions for full realization of those employed in it will contribute the utmost to mitigate the effects of climate change and ensure the maintenance of a healthy environment. Realization of the vision is to achieve three strategic objectives in the medium term: 1) Ensuring sustainable development of the forestry sector by achieving optimal balance between environmental functions and their ability to provide long-term tangible benefits and services; 2) Enhancing the role of forests

for the economic growth of the country and even (balanced) regional socio-economic development; 3) Increase the contribution of the forest sector in the green economy.

The RO-BG CBC Programme will contribute to these through its priorities for developing a skilled, inclusive and well connected region by promoting sustainable and quality employment and supporting labour mobility, joint local employment initiatives, joint training, as well as improving the protection and sustainable use of natural heritage in the cross border area.

Strategy for the Development of the Transport System of the Republic of Bulgaria for the period until 2020

The vision of SDTS is "By 2020 Bulgaria to have modern, safe and secure transport system that meets the needs for high-quality transport and provides much greater choices for individuals and businesses." Strategic goals of SDTS are: 1) Achieving economic efficiency through: Strengthening the competitiveness of the Bulgarian transport system, creating the right conditions for sustainable growth of the domestic and international traffic in increased energy efficiency, providing conditions for fair competition between and within different types of transport; 2)Development of sustainable transport sector through: Reduction of the negative impact of transport on the environment and change; Integration of the Bulgarian transport system in Europe; provision of high level of safety and security of transport systems; 3) Improve regional and social development and commitment by: Coordinated development of the transport sector in line with economic and social development at national and regional level; Improve regional access to transport corridors and promoting the development of border areas; provision of mandatory public transport services accessible to population rates.

The RO-BG CBC Programme will contribute to these through its priorities for sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training, as well as enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure in the cross border area.

National Waste Management Plan for the programming period 2014-2020

The main objective of the plan is to break the link between economic growth and waste, improve the hierarchy of waste management by developing the first sub-program and measures to prevent waste generation, set concrete targets for preparation for reuse, recycling and other recovery of specific waste streams. The plan sets 10 strategic objectives, including on the prevention and reduction of waste, increasing quantities of recycled and recovered waste, environmentally friendly waste disposal and others.

The RO-BG CBC Programme may contribute to these under its priorities for green and safe region.

National strategic plan for the management of waste from construction and demolition of the Republic of Bulgaria for the period 2011-2020

Vision: Reduce the harmful effects of waste generated as a result of construction activities on the environment, providing high quality on the building of the material environment. The long-term strategic goal: "By 2020, the Republic of Bulgaria have developed management system CSF to provide not less than 70% economically viable recicling, thereby to stop environmental pollution and reduce the environmental impact to a minimum of waste generated as a result of construction activities in the context of sustainable development." Main goals are: Prevention and reduction of amount of CSF generated; To introduce the selective destruction and separate collection and storage of CSF at the construction site in manner that ensures maximum extent their subsequent economic and technical appropriate recycling and utilization; Creating conditions for recycling and recovery of waste from construction burst and 70% reached recycling by 2020 of generated in the country CSF under the new framework directive 2008/98/EC on waste;

Creating conditions for recycled building materials market expansion; Increase investment in sector and the application of the "Polluter pays" principle in integrated management of waste; Strengthening the administrative capacity of the institutions responsible for the management of CSF and improve the interaction between institutions; Behavioral change in attitudes of all participants in the construction, operation and management of buildings and facilities.

The RO-BG CBC Programme will contribute to these mainly through its priorities for developing environment-friendly and low-carbon transport systems.

National Strategic Plan for a phased reduction of the amount of biodegradable waste tob e disposed (2010-2020)

Main goal: reduction of the amount of biodegradable organic waste incoming for disposal under Directive 1999/31/EU. The foreseen measures for achievement of the goals for reduction of the amount BDW incoming for disposal are the following: collection and composting of "green" waste - reduction of BDOW with about 130000 t/year; collection and recycling of PCW - reduction of BDOW with about 130000 t/year; homemade composting - stabilize the current lower levels of generation of BDW in rural areas; collection and handling of biodegradable waste from households, restaurants and markets and building of plant for aerobic or anaerobic handling of BDW with utilization of produced compost or biogas - reduction of BDW with about 132000 t/year; building of equipment for MBT or burning - reduction of BDW with about 470000 t/year; creation of financial and economic incentives for reduction of cases of landfilled waste and increase of utilized BDW; increase environmental consciousness of population and administrative capacity of municipalities for management of BDW.

The RO-BG CBC Programme is not directly linked with these priorities but can indirectly reduce pollutants by developing environment-friendly and low-carbon transport systems as well as through its priority for making the cross-border area a green region.

Strategic Plan for the Development of Cultural Tourism

The purpose of the Strategic Plan is to create a plan for sustainable development of the regions in order to meet the needs of Bulgarian and foreign tourists who are in search of new places and experiences, establishing social contacts with local people learning of local products and others.

The CBC Programme complements it though its investment priority for conserving, protecting, promoting and developing cultural and natural heritage.

3 Environmental Aspects

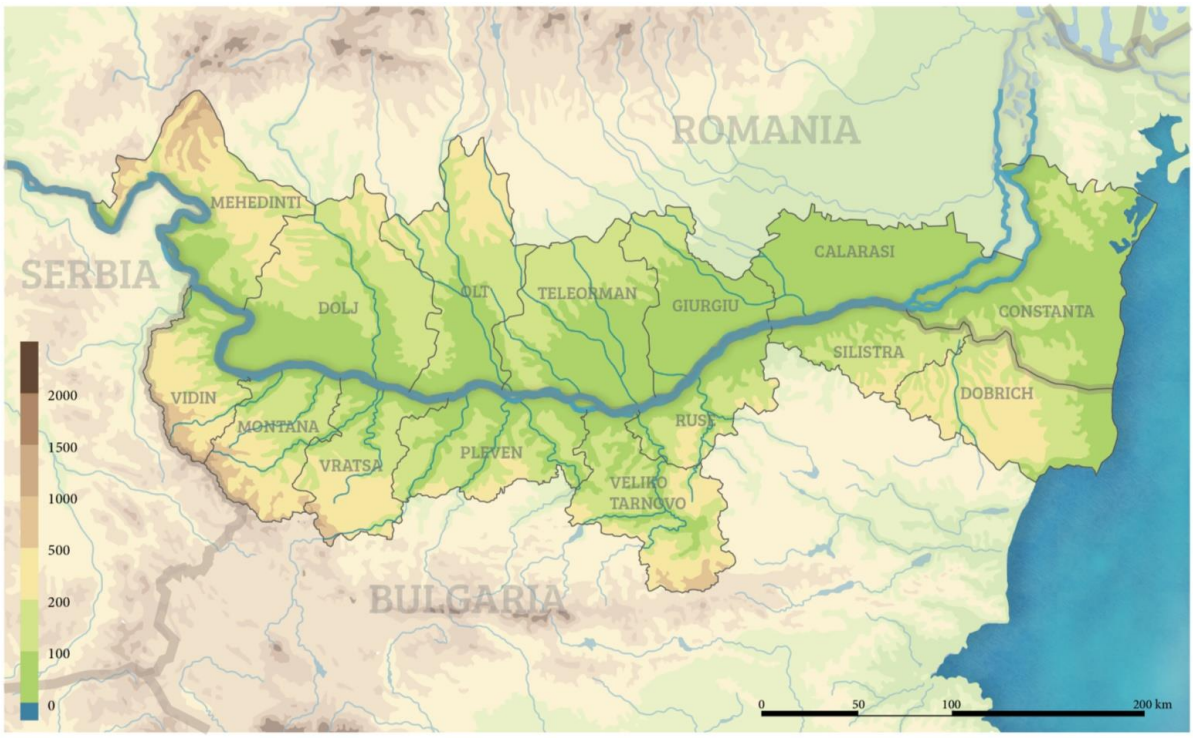
3.1 General Baseline

3.1.1 Geographical area likely to be affected

Taking into account that at this stage of the programme's development the locations of interventions/ actions are not defined, we shall consider for this presentation the total eligible area for such interventions, represented by the Romania-Bulgaria cross-border area.

The Programmme's Area has a total surface of 69 285 km^2, of which 56.75 % belongs to Romania (39 320 km^2) and 43.25% to Bulgaria (29 965 km^2).

Figure 3-1: The RO-BG cross-border area



(Source: Détente Consultants)

According to the information provided by its "Territorial Analysis" section, the "2014-2020 Romania-Bulgaria Cross-Border Cooperation Programme" covers seven Romanian counties and eight Bulgarian districts, located in northern Bulgaria and southern Romania along the national border, which lies between Serbia and the Black Sea. The border is 610 km long, 470km of which are delineated by the Danube River. The 15 administrative units (NUTS III) included into the Programme Area are parts of six administrative regions (NUTS II), as it follows:

- Mehedinti, Dolj and Olt counties - parts of the Romanian South-West Development Region Oltenia;
- Teleorman, Giurgiu and Calarasi counties - parts of the Romanian South Muntenia Development Region;
- Constanta county is part of Romanian South-East Development Region;

The surface of these seven Romanian counties included into the Programe Area represent 14,49% of the total surface of Romania.

- Vidin, Vratsa, Montana and Pleven districts - parts of the Bulgarian North West Planning Region;
- Veliko- Tarnovo, Ruse and Silistra districts - part of the Bulgarian North Central Planning Region;
- Dobrich district is part of the Bulgarian North East Planning Region.

The surface of these eight Bulgarian districts included into the Programme Area represents 29,38% of the total surface of Bulgaria.

3.1.2 Size of the population likely to be affected

The Program covers an area of almost 20 % of the total area of the two countries, where a population of around 5 million inhabitants lives.

Table 3-1: Cross-border region population by counties/districts in 2011

Romanian Cross-border region		**Bulgarian Cross-border region**	
Cross-border region population	**3,162,595**	**Cross-border region population**	**1,617,159**
Constanța	724,671	Dobrich	188,088
Călărași	311,474	Silistra	118,433
Giurgiu	279,847	Ruse	233,767
Teleorman	395,701	Veliko Târnovo	256,279
Dolj	700,431	Pleven	266,865
Mehedinți	290,137	Vratsa	184,662
Olt	460,334	Montana	145,984
		Vidin	99,481

(Sources: National Institutes of Statistics from Romania and Bulgaria)

3.2 Current state of the environment

3.2.1 Geological setting and relief

Geology

From geologic point of view, subject to the geotectonic evolution, the **Romanian territory** which is part of the programme's area, is divided into:

- **platform units** consisting of the the *Wallachian Platform* and the *Moesian Platform*, (formed during pre-alpine orogenic cycles, more or less subject to peneplanisation, resulting the Carpathians' foreland).
- **alpine units**: the *North Dobrogea Orogene (*Dobrogea Mountains, eroded*)*.

The Scythian Platform (consisting of Bârlad Sector and the Danube Delta Sector), morphologically looks like systems of terraces and river meadows created by alluvial deposits, gravels and sand, in the same time loess deposits being carried by wind to the high plains.

The Moesian Platform (consisting of the Wallachian Sector, the South-Dobrogea Sector, the Central-Dobrogea Sector), is located between the Carpathian Orogene (in West), the

alignment represented by the Carpathian Orogene and the North Dobrogea Orogene (in North) and the Balkan Orogene (in South). Towards East, it continues in the continental shelf of the Black Sea, being made of crystalline foundation and a sedimentary multi-layered blanket deposited in several sedimentation cycles, which reflects the evolution conditions in various stages, consisting of: argillite, sandstones, lime stones, gypsum, marls, clays, calcareous sandstones, river-torrential gravels, river-lake and stream sands, wind carried sand, loess, with pockets of hydrocarbons, gases and useful rocks. At the surface there are only quaternary deposits forming the plains and plateaus units (lake and stream sands and gravels, wind carried sand, loess).

Alpine Units

The North Dobrogea Orogene has a lateral and insular position at low altitude and with a small area; its geotectonic evolution ended in the Lower Cretaceous, way before the Carpathian one (which continued to evolve until the Neogene-Pleistocene). It covers the north third of Dobrogea, being bordered at South by the Peceneaga-Camena fault, at North it reaches to the Southern edge of the Danube Delta, along the Sfântu Gheorghe fault, towards East it descends below the newer sediments of the Black Sea, and towards West it continues beyond the Danube River.

The low-relief **Moesian** platform of northern Bulgaria and southern Romania owes its heritage to Hercynian deformation. It is mantled by flat-lying, shelf-type Mesozoic and Tertiary sedimentary (mostly carbonate) rocks. Along its southern boundary a foredeep developed during Jurassic-Cretaceous time in which thick flysch-like sediments accumulated. The Lom basin, North Bulgarian swell, and Varna trough are other major structural elements within the platform.

The **Bulgarian area** within the CBC RO-BG Programme is located in two main structural units in geological aspect: the Moesian platform and the Balkan zone.

The Moesian platform is composed of relatively undeformed Mesozoic successions up to 4-5 km thick. They cover unconformably a gently folded Palaeozoic basement, and are buried beneath Palaeogene, Neogene and Quaternary (mostly loess) deposits. Major unconformities at the base of theTriassic, Jurassic, Upper Cretaceous and Eocene, record the main compressional events within theAlpine thrust belt,

Several major positive and negative structures of different geological history can be divided. In all of them, the Triassic sediments were affected by Early Cimmerian folding and thrusting, whereas theoverlying younger successions were practically not deformed. Dominating structures are the Lom depression, the North Bulgarian arch and the South Moesian platform margin.

The *Lom depression* comprises an over 5 km thick, almost uninterrupted succession of Mesozoicand Cenozoic shallow to deeper marine sediments that record a continuous subsidence of the western part of the Moesian platform. The oldest rocks drilled are Lower Triassic clastics.

The *North Bulgarian arch* formed as a result of continuous uplift of the eastern part of the Mosian platform during Mesozoic and Cenozoic times. In the central topmost parts of the st ructure, the thickness of the Mesozoic succession is reduced to about 1 km and commences, directly over the Palaeozoic basement, with Middle Jurassic clastics, followed upwards by Late Jurassic to Hauterivian-Barremian carbonates. Tertiary cover deposits are lacking. Block faulting, horst and grabens of different rank are typical structural features of the arch.

The *South Moesian platform* margin includes the south dipping subsided part of the Moesian platform in front of the Alpine orogen. The Mesozoic section comprises thick Triass ic to LateCretaceous clastic and dominantly carbonate sediments, locally inter fingering with deep marineforedeep successions (Late Jurassic-Early Cretaceous). They are overlain

by Palaeogene and Neogenedeposits. The structural pattern is dominated by southern monoclinal dips gently deformed in severalsynclines

The Balkan zone includes four tectonic units: West Balkan, Central Balkan, East Balkan and Kamchya unit. They form a complex system of north-verging thrust sheets over the South Carpathian units and the margin of the Moesian platform. Key characteristics of this superunit are: widespread Mesozoic to Early Tertiary flysch, flysch-like and molasse successions typical of the external parts of orogenic belts; general lack of products of Alpine magmatic activity with the exception of scarce andsmall occurrences of Upper Cretaceous subvolcanic and volcano-sedimentary rocks; intense Mid-Eocene compressional deformations in the central and eastern segments of the zone; relatively thick continental crust (38-34 km) gradually thinning toward the Moesian platform.

Relief

Nearly all forms of relief mark the cross-border territory: hills, plateaus, valleys, plains, and floodplains, lakes. Most of the eligible area in Romania is situated in the so-called Romanian Plain. This consists, from West to East, of the plain of Oltenia, the Olt-Argeş Plain, the Bărăgan Plain, the Eastern Plain, and the Danube Valley.

All but a short section of the northern frontier of Bulgaria is marked by the lower Danube River. The abrupt and often steep banks on the Bulgarian side contrast with the swamps and lagoons of the Romanian side. Extending southward from the Danube to the foothills of the Balkan Mountains is the fertile, hilly Danubian Plain. The average elevation of the region is 584 feet (178 meters).

3.2.2 Climate and Air Quality

Climate – general patterns

In the cross-border area, the climate is temperate-continental with very hot summers, small amounts of precipitation, and cold winters marked by irregular intervals with strong snowstorms and frequent warming. Some particular influences marked the territory, respectively: Mediterranean influence in Mehedinti and Dolj counties, marine influences in Constanta and Dobrich counties with strong contrasts between winter and summer temperatures. In the south-eastern part, some northern influences can be felt, cold air coming from the northeast to the southwest, strong winds, bringing very cold winters.

A joint air quality monitoring system was built in the cross-border area, which operates within the cross-border cooperation projects with EU funds regarding the settlements of Romania and Bulgaria located along Danube river. Also, a joint air quality management programme was developed along the Romanian-Bulgarian border in the aria of the Low Danube.

Particularities specific to the Romanian and Bulgarian territories are presented bellow, in distinct sections.

Romania[6]

Climate

In 2012, the annual country average temperature level, 10ºC, was 1.1ºC above the normal climatologic standard value (1961-1990). The annual quantity of precipitations, country

[6] Source of information: “State of the environment – Final Report 2012” prepared by the National Agency for Environmental Protection of Romania.

average value (618.9 mm) was only 3% below the normal climatologic standard value (1961-1990),

Extreme phenomena on record and their consequences are relevant for the area of concern. 2012 was especially remarkable for very low temperatures and massive snowfalls and blizzards in the second half of January and early February. **The southern part of the country** was affected by snow storms, when snow drifts were formed by strong winds tumbling and blowing off snow. Black ice was formed in some days, as well as fog associated with hoary frost. In January, the national monthly average precipitation, 59.1 mm, was 59% higher than the normal climate standard. The precipitation regime was predominantly surplus in the **southern half of the country** and on limited areas in the rest of the country. **The most important precipitation surplus, more than 100% was recorded in Southern Oltenia, Muntenia and Dobrudja, while the highest deviation of the monthly precipitation from the norm was recorded in Călăraşi at 294%.**

Also, in February, massive snowfalls and blizzards caused many roads across Romania to close, some communities were left stranded and without power supply, thousands of people to become entrapped in houses under the snow, schools and national and county roads were closed and train services cancelled.

Also, in 2012, in July and August, extreme highs and lack of precipitation caused fire impacts to more than 200 ha of forest, grassland and dry vegetation.

May was characterised by heavy rainfall which, especially in the second half of the month, caused flooding in more than 100 communities in 20 counties.

Climate forecasts

The forecasts provided by various models state that climate regime changes in Romania range within the global trends, considering the regional context, with higher temperature increases during summer. Thus, Romania expects an increase of the annual average temperature compared to 1980-1990 similar to the European region as a whole, with slight differences between the modelling results, for the first decades of the 21st century, and higher toward the end of the century:

- by 0.5°C to 1.5°C, for 2020-2029;

- by 2.0°C to 5.0°C, for 2090-2099,

depending the scenario (e.g.: by 2.0°C - 2.5°C under the scenario providing the lowest global average temperature increase and by 4.0°C - 5,0°C under the scenario with the highest temperature increase).

From a quantitative perspective, more than 90% of the climate models foresee, for 2090-2099, harsh draughts in summer, in Romania, **especially in the south and south-east** (with negative deviations compared to 1980-1990, of more than 20%). Concerning winter precipitation, deviations are slighter and the uncertainty higher.

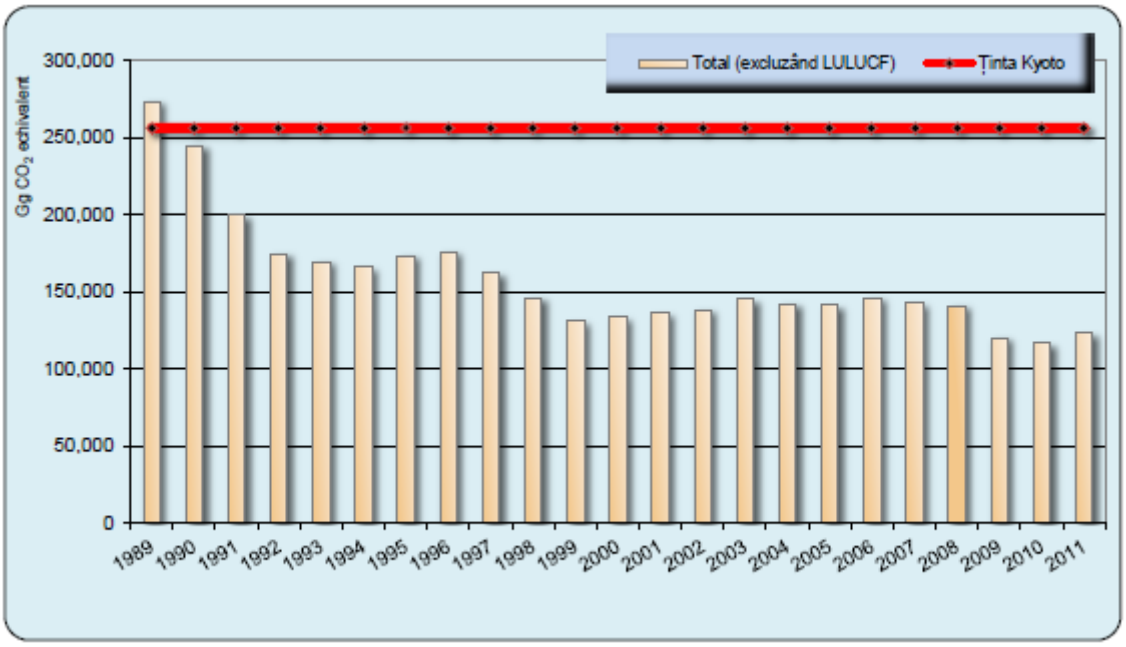
GHG Emissions

The most recent "*National GHG Inventory of Romania*" was sent at the beginning of 2013 and contains the estimations of the GHG emissions / retentions through sequestration for the period 1989 - 2011.
In accordance with Kyoto Protocol, Romania committed to reduce the GHG emissions with 8% between 2008 and 2012, considering the emission level from 1989 as reference.

The total GHG emissions (excluding the contribution of the area Land Use, Change of Land and Forestry Use - LUCLFU) decreased in 2011 with 54.86%, compared with the level of emissions from 1989.

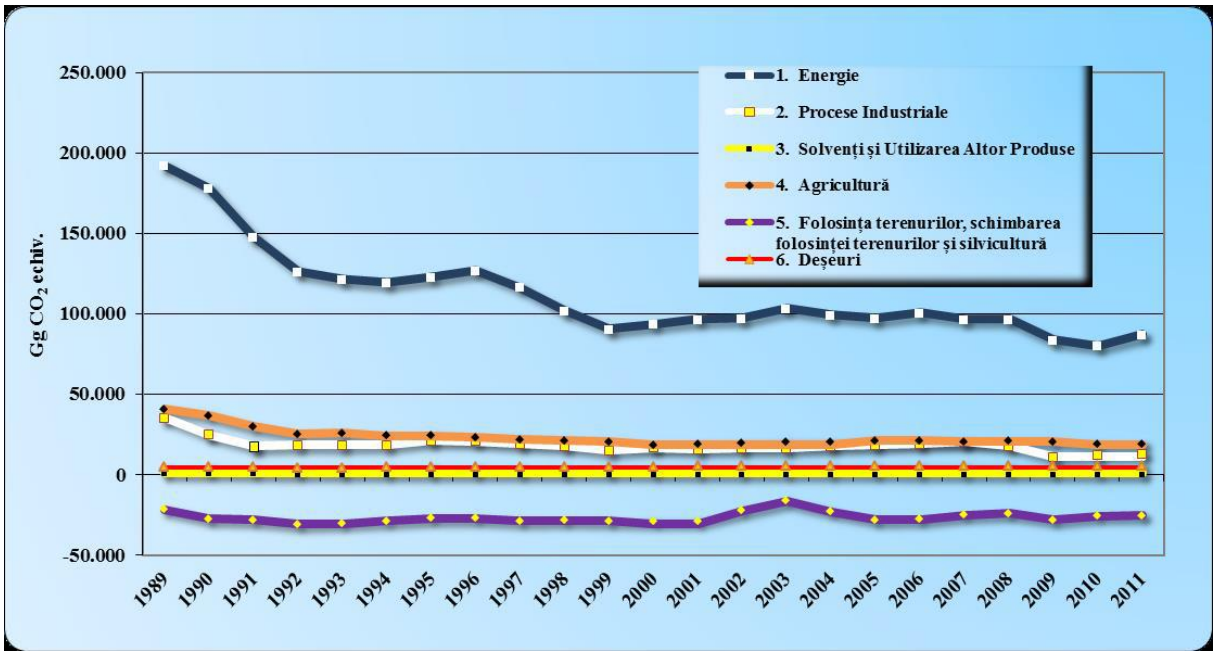
As shown in figure bellow, the decline of the economical activities and of the energy consumption between 1989 and 1992 has caused the decrease of the emissions. Some energy-intensive industries have significantly reduced their activities and that was reflected in the GHG emissions reduction.

Figure 3-2: The level of the total GHG emissions (without LUCLFU)



The areas for which the estimation of the GHG emissions/retentions levels were made are: energy sector, industrial processes, use of the solvents and other products, agriculture, use of lands, change of land use and forestry (*LUCLFU*) and wastes areas.

Figure 3-3: The trend of the GHG emissions by sectors 1989-2011 (in thousands CO2 to equivalent)



Air Quality

Ambient air quality assessment is governed in Romania by the *"Law 104/2011 on ambient air quality"*, which transposes the *Directive 2008/50/EC adopted by the European Parliament and the Council on ambient air quality and cleaner air for Europe* and *Directive 2004/107/EC of the European Parliament and Council relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air*.

The following pollutants are taken into consideration when evaluating the air quality: sulphur dioxide (SO2); nitrogen oxides (NO2); nitric oxides (NOx); particulate matter (PM10 and PM2.5); led (Pb); benzene (C6H6); carbon monoxide (CO); ozone (O3); arsenic (As); cadmium (Cd); nickel (Ni); polycyclic aromatic hidrocarbures – (HAP) / benzopyrene (BaP); mercury (Hg).

According to the "State of Environment – Final Report 2012" presented by the National Agency for Environmental Protection, the environmental quality standards were exceeded in 2012 among the programme's area for ozone (O3), as registered by:

- Traffic station DJ-3 (Craiova-Dolj county);
- Industrial station DJ-4 (Isalnita-Dolj county);
- The rural background station DJ-5 (Breasta-Dolj county).

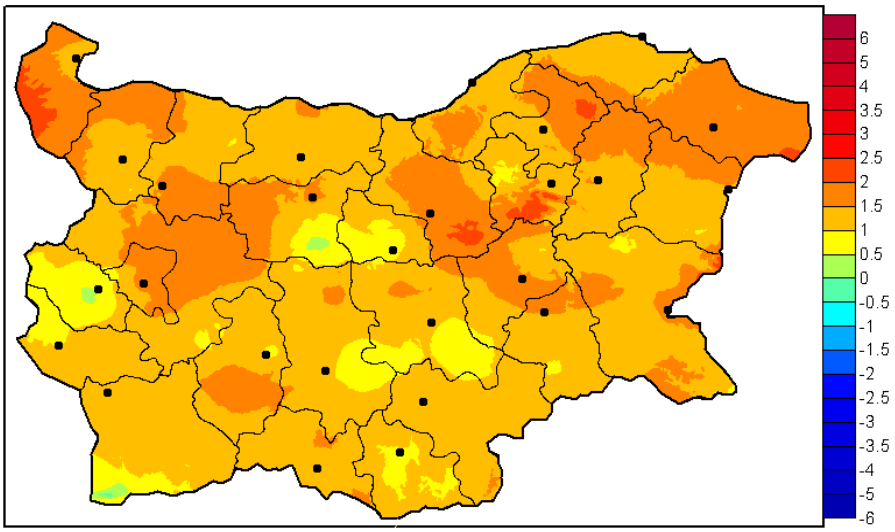
No other air pollutant exceeded the environmental quality standards in the programme's area.

According to the report, "*in 2012 the information threshold for ozone was reached amid calm atmospheric conditions, unfavorable to the dispersion of pollutants in the air, which led to the production and accumulation of ozone in these areas*".

Bulgaria

In recent years, increased frequency of extreme weather and climate events were registered. In 2012, the average annual temperature in Bulgaria is 1,3 ± 0,3 ° C above normal climate rate (average annual temperature for the period 1961-1990), which keeps the trend of more than 1 ° C in the last 5-6 years. According to simulations of climate change made on the basis of the main emission scenarios temperatures in Bulgaria are expected to increase between 2 and 5 degrees by the end of the 21st century.

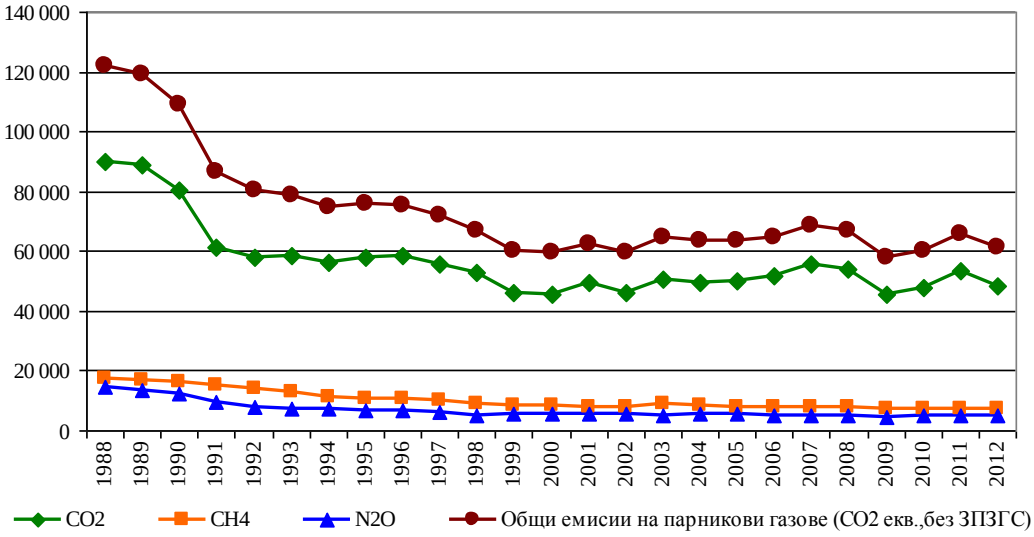
Figure 3-4. Deviation of the annual climatic norm (10,5 ° C) of air temperature in Bulgaria in 2012



Source: NIMH (National report on the status and conservation of the environment,2014)

The analysis shows that for the period 1988 - 2012 the emissions of GHG are dwindling. In 2012 the total GHG emissions are 61,045.63 Gg CO2-eq. or 50.1% of the emissions in the base year.

Figure 3-5. Trend in emissions of GHGs - CO2, CH4 and N2O and total GHG emissions (including HFCs, PFCs and SF6) for the period 1988-2012, Gg CO2 - eq.



Source: EEA, National inventory report on GHG emissions for 2012

The main sources of greenhouse gas emissions come from the energy and agriculture. These are supplemented by the industrial processes, waste, the use of solvents and the like.

Air quality

In accordance with national and European legislation, the country is divided into the following regions for assessment and management of ambient air quality (RAMAAQ) - Sofia, Plovdiv, Varna, North/Danube, South and Southeast Region. The cross-borderarea within the scope of this assessment is located in the North/Danube region. In addition, under cross border cooperation projects an unified monitoring system for air quality monitoring was built and operated in the Romanian and Bulgarian settlements along the lower Danube. A joint program for air quality management along the border Bulgaria - Romania in the lower Danube area was also developed.

In the Danube region in 2012 no violations of air quality are registered with respect to the allowable number of exceedances of sulfur dioxide in ambient air, i.e. the registered number of exceedances of the threshold value is within the allowable limits or there are none.

Table 3-2. Characteristics of RAMAAQ concerning air pollution with SO2

RAMAAQ	AHR (1 hour)		ADR (24 hours)		AYR for ecosystems (1 year)		Threshold for ecosystems (1 year and winter)	
	>AHR	¤AHR	>ADR	¤ADR	>AYR	¤AYR	>Threshold	<Threshold
North Region		+		+				

Source: EEA (National report on the status and conservation of the environment, 2014)

No exceedances of nitrogen dioxide content are registered in the Bulgarian part of the cross-border area in 2012.

Table 3-3. Characteristics of RAMAAQ concerning air pollution with NO2

RAMAAQ	AHR (1 hour)		AYR (1 year)	
	>AHR	¤AHR	>AYR	¤AYR
North Region		+		+

Source: EEA (National report on the status and conservation of the environment, 2014)

During the year, exceedance of AHR and AYR for PM10 is registered in all RAMAAQ. Vidin is one of the areas in which the highest number of exceedances of the ADR (157 days) is registered. Sources of registered excess pollution are household, transportation and industrial activities in the territory of the municipalities, as well as polluted and poorly maintained road pavements. Additional contribution to air pollution by particulate matter has the impact of adverse weather conditions in the country as low dilution of locally emitted pollutants, including as a result of low wind speeds (less than 1.5 m/s), and prolonged droughts.

Table 3-4. Characteristics of RAMAAQ concerning air pollution with PM10

RAMAAQ	ADR (24 hours)		AYR (1 year)	
	>ADR	¤ADR	>AYR	¤AYR
North Region	+		+	

Source: EEA (National report on the status and conservation of the environment, 2014)

The average annual rate of PM2.5 is exceeded in North RAMAAQ (Veliko Tarnovo and Ruse). The main source of pollution are emissions from transport, households, industry, and poorly maintained roads.

No concentrations above the average rate of lead aerosols in the atmosphere are registered in 2012, nor exceedences for carbon monoxide.

In 2012 in Ruse are registered exceedances of the threshold for informing the population in terms of values for ozone (180 μg/m^3), where also are calculated and the highest critical level of OVP40[7] (May-July) were calculated - more than 22 000 μg/m^3.h.

The average target rate for cadmium, nickel and arsenic is not exceeded in the area concerned. In 2012, North RAMAAQ recorded exceedances of the target AYR on PAH in ambient air. Main sources of pollution are the burning of various fuels, including in the household sector.

Table 3-5. Characteristics of RAMAAQ concerning air pollution with arsenic, cadmium, nickel and PAH

	AYR (1 year)							
RAMAAQ	Arsenic		Cadmium		Nickel		PAH	
	>AYR	¤AYR	>AYR	¤AYR	>AYR	¤AYR	>AYR	¤AYR
North Region						+	+	

Source: EEA (National report on the status and conservation of the environment, 2014)

According to the analysis of socio-economic development, presented at the National Regional Development Strategy 2012 – 2022, the region of lowest greenhouse gas emmissions is the North West Region, where Vidin, Vratsa, Montana and Pleven districts are located.

[7] Critical ozone threshold for vegetation protection

3.2.3 Water

3.2.3.1 Surface Water

The Danube River is both the borderline between Romania and Bulgaria and the main environmental feature in the region.

Two distinct sections of the Danube River can be identified in the Romanian-Bulgarian cross-border region:

- the first one between Gura Văii (north of Drobeta Turnu Severin) and Călăraşi,
- the second one between Călăraşi and Pătlăgeanca.

Gura Văii-Călăraşi Section

The Gura Văii-Călăraşi section has a length of 566 km, collecting the waters of several tributary streams, from Bulgaria (Timok, Ogosta, Iskăr, Vit, Iantra) and from Romania (Jiu, Olt Argeş). These streams contribute to the increase of the water flow of the Danube by approximately 600 m^3/s between the Danube Gorge (Defileul Dunării) and Oltenița. There are several significant islands along this sector Belene (41.1 km^2), Kozlodui (6.1 km^2), and the Island of Vardim (5.0 km^2) that are part of Bulgaria.

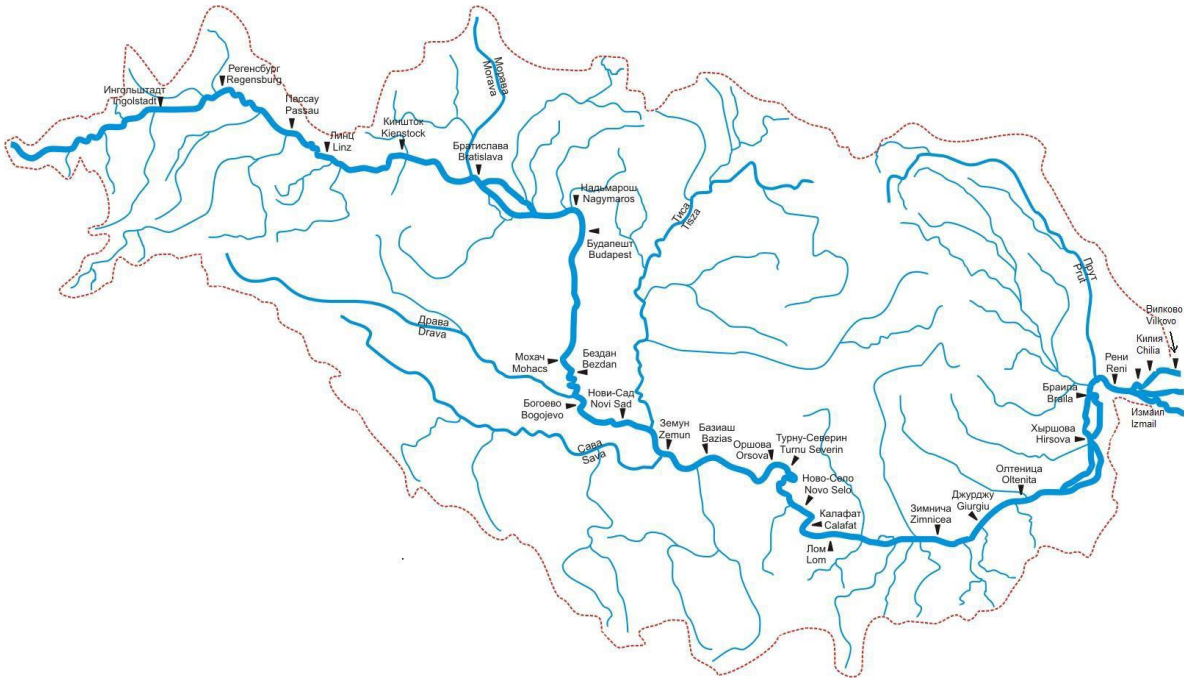
Călăraşi-Pătlăgeanca Section

The Călăraşi-Pătlăgeanca Danube section has a length of 374 km where both riverbanks belong to Romania. Along this section, the Dobrogea Plateau is situated between the Danube valley in the west and the Black Sea in the north and east. The area can be characterised by the presence of several ponds.

There are several lakes on the Romanian side of the cross-border region.

The Bulgarian side of the cross-border area, with its own river network (20 major tributary streams of the Danube) belongs to the Black Sea drainage area. The high density of the river network is the main hydrographical characteristic of the area. Among the notable rivers in the area are Iskar, Vit, Ogosta, Osam and Yantra.

Figure 3-6: Danube River basin



Romania

In Romania, the surface water bodies and groundwatre bodies are under the management of the National Administration „Romanian Water" (NARW), which includes within its structure 11 Water Basin Administrations (WBA).

The following Rriver Basin Administrations are controlling the water bodies in the area of RO-BG CBC Programme 2014-2020:

- WBA Jiu;
- WBA Olt;
- WBA Arges-Vedea;
- WBA Ialomita-Buzau and
- WBA Dobrogea-Litoral.

A. The River Danube

Along the major course of the Danube River, administered by Water Basin Administrations (WBA) Jiu, WBA Olt, WBA Arges-Vedea, WBA Buzau-Ialomita and WBA Dobrogea – Litoral, a total number of 7 water bodies were identified and evaluated (4 water bodies on the main course and 3 water bodies on the 3 branches, all with a monitored total length of 1,260 km). The 7 water bodies were designated as being:

- 2 natural water bodies and
- 5 highly modified water bodies.

Following the assessment of data obtained, it resulted that the entire monitored length had a good ecological condition, respectively, a good ecological potential.

The most important Danube's left affluent rivers on Romania's territory covered by the programme are: Jiu river, Olt river and Arges river.

B. Jiu hydrographic basin

a) Ecological condition of natural bodies of surface water

Within the Jiu hydrographic basin, 41 natural water bodies were evaluated based on monitoring the biological and support elements – rivers, with a length of 1,293.7 km. Of the 1,293.7 km monitored for ecological condition, the distribution on lengths in relation to the ecological condition is as follows:

- 915.1 km (70.74%) in good ecological condition and
- 378.6 km (29.26%) in moderate ecological condition.

b) The ecological potential of the highly modified surface water bodies

Within the Jiu hydrographic basin, 1 water body highly modified was evaluated, in the river category, 9 km in length. The assessment indicated that all 9 km fit the moderate ecological potential (PEMO).

C. Olt hydrographic basin

a) Ecological condition of natural bodies of surface water

Within the Olt hydrographic basin, 73 water bodies were evaluated based on monitoring the biological and support elements - rivers with a length of 2,205 km. For the 2,205 km, the distribution on lengths in relation to the ecological condition is as follows:

- 1,553km (70.43%) in good ecological condition and
- 652 km (29.57%) in moderate ecological condition.

b) The ecological potential of the highly modified surface water bodies

Within the Olt hydrographic basin, 12 water bodies highly modified were evaluated, based on monitoring the biological and support elements – rivers, with a length of 533,5 km. The 533.5 km of assessed CAPM-rivers monitored for ecological potential, the distribution on lengths in relation to the ecological condition is as follows:

- 6 km (1.12%) were in a maximum ecological potential,
- 175.5 km (32.89%) in good ecologic potential and
- 352 km (65.98%) in moderate ecological potential.

c) The ecological potential of the artificial surface water bodies

Within the Olt hydrographic basin, 2 artificial water bodies were delimited – in length of 42 km, which both fit the moderate ecological potential following the 2012 assessment.

D. Arges hydrographic basin

a) Ecological condition of natural bodies of surface water.

Within the Arge hydrographic basin, 51 natural water bodies were evaluated – based on ecological monitoring - rivers with a length of 1,576.59 km. For the 1,576.59 km, the distribution on lengths in relation to the ecological condition is as follows:

- 941.65 km (59.73%) in good ecological condition and
- 634.98 km (40.27%) in moderate ecological condition.

b) The ecological potential of the highly modified surface water bodies (CAPM).

Within the Arges hydrographic basin, 9 water bodies highly modified were evaluated, based on monitoring of the ecologic potential – rivers, with a length of 311.26 km. Of the 311.26 km of monitored rivers,

- 52.50 km (16.87%) were in a good ecological potential and
- 258.76 km (83.13%) in moderate ecological potential.

c) The ecological potential of the artificial surface water bodies.

Within the Arges hydrographic basin, in 2012 2 artificial water bodies were monitored – in total, a length of 24.66 km, both bodies having a good ecological potential.

E. The Seaside Hydrographic Basin

Within the Seaside Hydrographic Basin**,** a total number of 23 surface water bodies, namely rivers, were identified and assessed by monitoring (apart from the transitory and coastal ones).

a) The ecological condition of the surface water bodies

Within the Seaside Hydrographic Basin, 12 natural water bodies-rivers were monitored and assessed in in terms of the ecological condition. The total length of rivers is 295.6 km. The distribution of the 295.6 km, in relation to their ecological condition, is as follows:

- 15.6 km (5.28%) in good ecological condition and
- 280 km (94.72%) in moderate ecological condition.

b) The ecological potential of the surface water bodies

In this basin, 2 artificial water bodies – rivers (CAA), were assessed, in total length of 64.41 km. The distribution of this length is as follows:

- 9.60 km(14.9%) in the good ecological potential and
- 54.81 km (85.1%) in the moderate ecological potential.

Bulgaria

Water management in the Republic of Bulgaria is carried out at national and basin level. The following regions water management at basin level are designated:

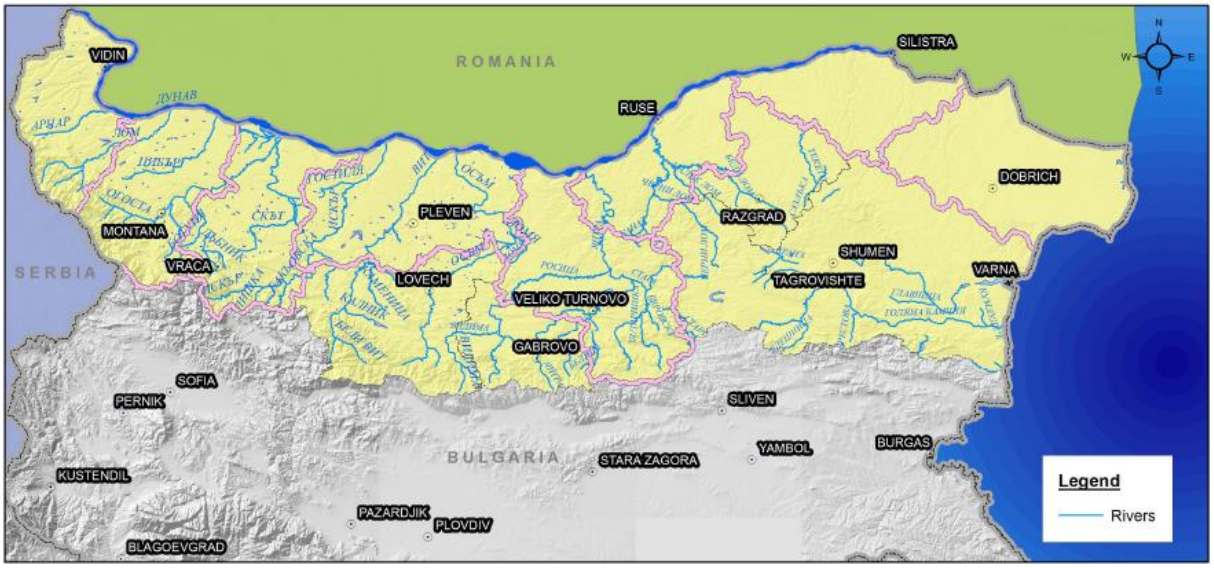
- Danube region with the center in Pleven;
- Black Sea region with the center in Varna;
- East Aegean Region with the center in Plovdiv; and
- West Aegean Region with the center in Blagoevgrad.

The indicative activities of the Programme have the potential to affect the surface water bodies at two of the basin directorates, namely:

- Danube Region Basin Directorate for Water Management (including about 87 surface water bodies within the scope of the Programme); and
- Black Sea Basin Directorate for Water Management (including 7 surface water bodies within the scope of the Programme).

Hydrological map of the cross-border area in Bulgaria is illustrated in the following figure.

Figure 3-7: Hydrological map of the cross-border area – Bulgaria



The main water streams within the scope of the Programme are:

Within the Danube Region Basin Directorate with the center in Pleven

- Danube
- Iskar
- Vit
- Osam
- Ogosta
- Rivers west of Ogosta
- Yantra

- Rusenski Lom
- Danubian Dobrudzha streams

Within the Black Sea Basin Directorate with the center in Varna

- The Black Sea Dobrudzha streams

Water from the rivers to DRBD is used for irrigation and potable purposes. Most important are the waters of the Danube, used for transportation, fishing and irrigation. There are a large number of ravines, which are filled with water only in spring when the snow melts and rains are more torrential.

In recent years a trend of improvement in the overall environmental condition of water is observed. Upper reaches of rivers are characterized by unpolluted to slightly polluted water. In some areas there is a decrease in the number of areas with abnormal status and no new areas with disturbed hydro-biological status are established. Notwithstanding the above positive trend in recent years, a number of points and sections of rivers are registered to be of severely degraded environmental quality.

The only streams within the BSBD having regard to the program are the Black Sea Dobrudzha Rivers. The analyzed area is the poorest of freshwater resources in the country.

The Black Sea Dobrudzha streams occupy the upper northeastern part of Bulgaria. Unlike other rivers in Bulgaria, starting from the steep slopes of high mountains and gradually descending to the plains, the Dobrudzha streams start from the vast plains of the highlands and down in the river valleys and have surface runoff only in their upper currents; due to the high permeability of the soil and the small slope, the water downstream gradually sinks in and disappears long before mouthing the rivers.

Typical of Dobrudza streams is that they exist at a certain distance after their source and then sink in the loess formations of Dobrudza and the downstream dry valleys and do not form a surface tributary to the Black Sea.

Coastal Black Sea Waters

The Black Sea region is a pool of national importance for the economy and the whole life of the country. Coastal waters are characterized in some areas with high physicochemical parameters and increased degree of eutrophication. Black Sea is also an international protected area under the international agreements and conventions. In this sense, it is subject to co-operation between the countries of the Black Sea region. The Framework Directive for Maritime Strategy that both Bulgaria and Romania are required to apply as member states requires the two Black Sea countries cooperate and coordinate joint actions in the performance of their maritime strategies. It should also be borne in mind that the Regional Maritime Conventions, in particular the Convention on Protection of the Black Sea against Pollution, aim to support the implementation of the Framework Directive on Maritime Strategy.

The status of surface water bodies within the scope of the Program under the management of DRBD with center Pleven and BSBD with center Varna according to RBMP 2010-2015 is presented in the next two figures. The objective of the RBMP is to achieve good chemical and ecological status of surface waters.

Figure 3-8: Chemical status of surface water bodies – Bulgaria

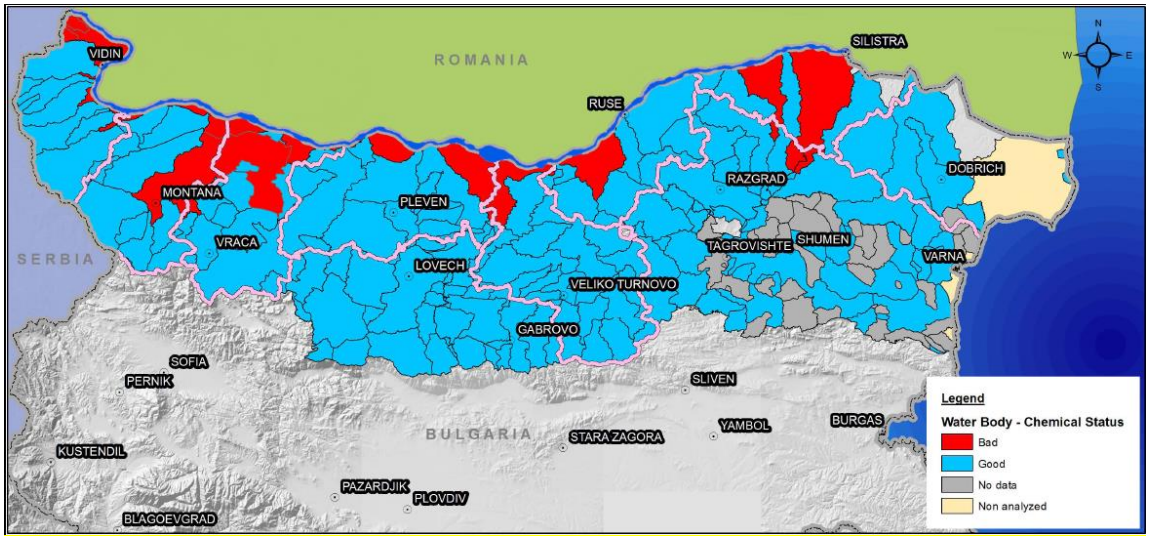
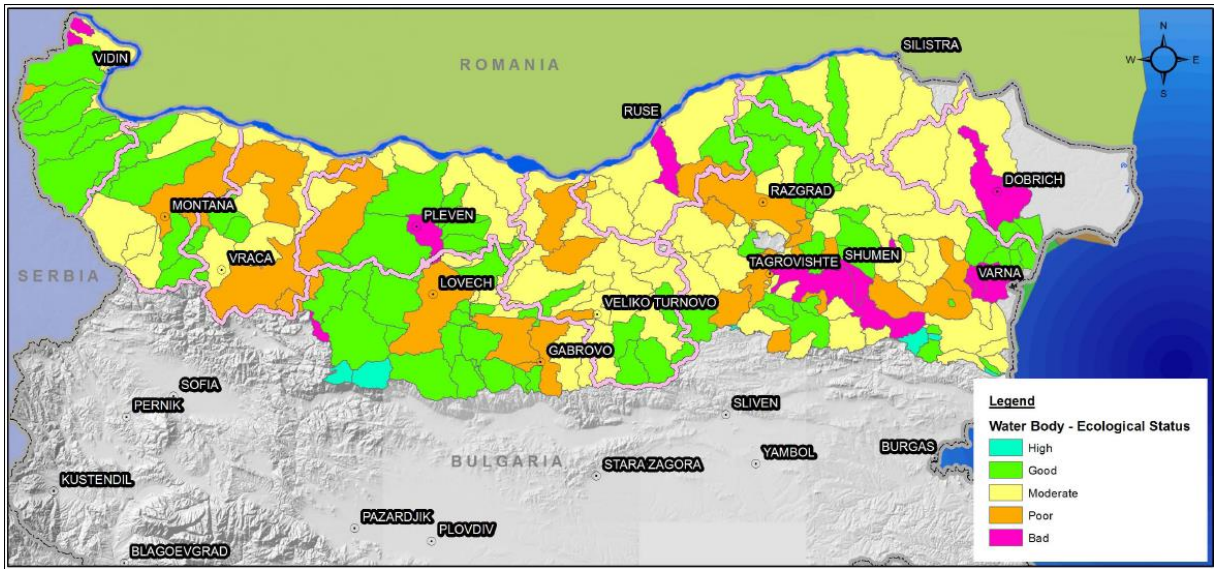


Figure 3-9: Ecological status of surface water bodies – Bulgaria



On the grounds of and in accordance with Article 156h, items 1 ÷ 3 of Water Act (WA) and Article 5 of the Water Framework Directive (WFD) the Basin Directorates will update of information concerning the characteristics of the river basins and will examine the impact of human activity on the status of surface and groundwater by the end of 2014, including economic analysis of water use. Risk assessment of water bodies to achieve the goals of environmental protection, as well as interim review of the significant problems identified in water management will included in the first update of plans by the end of 2014.

Among the indicators of pollution are: increased BOD5, nitrite and ammonium nitrogen, phosphates, insoluble and extractable substances.

Currently under the activities of RO-BG CBC Programme 2014 - 2020 there are no identified projects for infrastructure, water supply and discharge of wastewater from the sites of equipment used during construction and operation, neither quantity, composition or manner of discharge. At this stage this creates an inability to precisely determine where and how the implementation of these activities will affect the areas of water protection under Article 119a, Item 1 ÷ 4 of the Water Act.

In connection with the implementation of any actions of the Programme special attention is paid to the areas and sites which (under Article 119a of the Water Act) are designated as

water protection areas and which are subject to statutory prohibitions and restrictions aimed at their protection, namely:

- areas designated for extraction of water intended for human consumption;
- water bodies designated for recreation, including areas designated as bathing waters;
- areas designated for the protection of economically significant aquatic species.

All these areas, along with nutrient-sensitive water areas designated as sensitive under Directive 91/271/EEC and areas designated as vulnerable under Directive 91/676/EEC, as well as areas related to biodiversity conservation are discussed detail in Section 4 of this report.

3.2.3.2 Ground Water

Romania

In the year of 2012, for the 140 existent ground water bodies monitored from the total of 142 existing bodies, a number of 1307 monitoring points (wells, springs, drains, fountains) were observed for the annual preliminary evaluation of chemical condition. The 2 unmonitored ground water bodies are situated either in hardly accessible mountain areas or they have a low number of wells bare of water influx.

The quality of the groundwater of the programme's area monitored in 2012, determined the classification of the groundwater bodies' status in "good" and "poor", as presented in the table bellow.

Table 3-6: Results of monitoring groundwater quality in 2012 within the programme's area (RO)

Basin/ Hydrographic area	Number of monitored groundwater bodies	Current status		Water body in poor chemical status	Indicators that trigger the classification as poor
		Good	Poor		
B.H.JIU	8	6	2	ROJI05	NO3
				ROJI06	NO3
B.H. OLT	14	12	2	ROOT01	NO3; NH4
				ROOT08	NO3
S.H. ARGES - VEDEA	11	10	1	ROAG08	NO_3
S.H. DOBRUDJIA – SEASIDE	10	5	5	RODL01	NO3; Cl
				RODL04	NO3
				RODL07	NH4; NO3; PO4; Cl
				RODL09	NO3
				RODL10	NO3; NO2

In terms of water pollution, the most frequently identified nutrients are the various forms of nitrogen and phosphorus (nitrates, nitrites, ammonia, organic nitrogen from plant debris or other organic compounds and phosphates).
In 2012 the highest nitrates concentrations were recorded at:

- In Dobrudja-Seaside hydrographic area in pollution control wells located on water bodies **RODL01**, **02, 04, 05, 09, 10**;
- Jiu hydrographic basin in wells that belong to **ROJI05** and **06** water bodies;

- Olt hydrographic River basin, in **ROOT02, 07** and **08** water bodies;
- Arges-Vedea hydrographic area, in bodies **ROAG03, 05, 08, 09**;

Excess nutrients, whatever the source may be, come by washing or infiltration into groundwater, rivers, lakes and seas. By boiling, the nitrate concentration in water increases, and purification filters do not absorb nitrates.

Naturally, nitrates (NO3) and phosphate (PO4) from waters come from aquatic animal manure (mainly fish), from the soil forming lacustrine basin or aquifer specific organic matter decomposition. Excess phosphates and nitrates come from human activities, namely the human waste and various industrial and agricultural sources (fertilizers and animal manure).

Agriculture and animal breeding involves significant pollution of groundwater, often cumulative and persistent in water layers.

Bulgaria

In the geographic scope of the program 47 groundwater bodies are formed in the geological environment of tectonic units and imposed structures from Triassic to Quaternary inclusive, of which 41 bodies within the Danube Region of Water Management and 6 units in the territory of the Black Sea Water Management Region.

According to the results of the monitoring carried out by 2012 (inclusive) under Order No. RD-715/02.08.2010 of the Minister of Environment, 34 groundwater bodies in the Danube region and six bodies in the Black Sea region are in "good" quantitative status, while 7 underground water bodies in the Danube region are in " bad" quantitative status.

Assessment of the chemical status of groundwater differentiated by Basin Directorates and layers is shown in Table 3-7.

Table 3-7. Chemical status of groundwater within the geographical scope of the Programme on Bulgarian territory

Distribution of groundwater bodies (GWB) in layers	Total number of GWB	Chemical status, number of GWB			
		Acc. RBMP 2010		In 2012	
		Good	Bad	Good	Bad
Danube Region Basin Directorate					
Layer 1 - Neogene-Quaternary	27	18	9	17	10
Layer 2 - Neogen	3	2	1	1	2
Layer 3 - Neogene-Sarma	2	1	1	-	2
Layer 4 - Upper Cretaceous	2	2	-	1	1
Layer 5 - Triassic-Jurassic-Cretaceous	6	1	5	2	4
Layer 6 - Upper Cretaceous Lower Cretaceous-Malm valanzh	1	1	-	-	1
Total	**41**	**25**	**16**	**21**	**20**
Black Sea Region Basin Directorate					
Layer 1 - Quaternary	1	-	1	-	1
Layer 2 - Neogen	2	-	2	-	2
Layer 3 - Paleogene	1	1	-	1	-
Layer 6 - Cretaceous-Malm valanzh	2	2	-	2	-
Total	**6**	**3**	**3**	**3**	**3**
Sum	**47**	**28**	**19**	**24**	**23**

More detailed information for the chemical status of groundwater bodies according to data from the management plans of river basins and the National report on the status and conservation of the environment in the Republic of Bulgaria in 2012 (EEA, 2014 edition) is provided in Table 3-8.

Groundwater bodies in "bad" chemical status are mostly of non-pressure nature and shallow water level, fed by precipitation and temporary surface water flows. They are not or poorly protected against ingress of contaminants mainly from diffuse sources: agricultural activities (agriculture and livestock breeding) associated with the application of fertilizers and pesticides and disposal of waste (solid and liquid manure) from livestock farms, settlements with no sewerage system and no WWTPs respectively, landfills that do not meet the European requirements, ineffective operating treatment facilities of livestock farms. The most important among these are agricultural activities and settlements without sewerage system that issue mainly nitrates and ammonium . Source of groundwater contamination with sodium and chloride in the coastal strip, registered near Krapets, is the intrusion of saline sea waters.

According to data from the Register of the resources of mineral waters - exclusive state property, in the geographical scope of RO-BG CBC Programme 2014 - 2020 on Bulgarian territory there are 12 deposits of mineral waters: Burzia, Varshetz, Zamfirovo and Slatina in Montana Region; Voneshta voda, Ovcha mogila, Polikraishte , Polski Trumbesh , Ressen and Svishtov in Veliko Tarnovo Region, Northeastern Bulgaria - groundwater from the malm valange aquifer of temperature higher than 20 (degrees Celsius) – Varna, Dobrich, Shumen and Varnenski Basein Region - groundwater from Eocene aquifer with temperatures higher than 20 (degrees Celsius) - Varna and Dobrich Region.

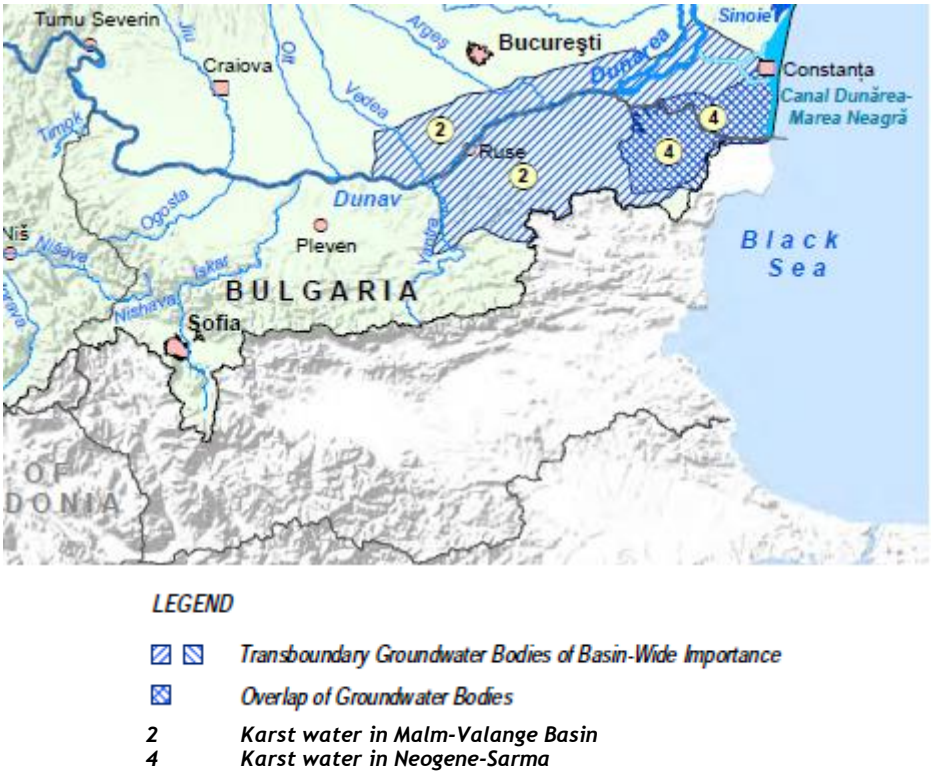
Table 3-8. Chemical status of groundwater within the geographical scope of the Programme on Bulgarian territory

No	Groundwater body /GWB/	GWB Code	Chemical status			
			RBMP 2010.		EEA 2012	
			Assessment of status	Indicators classifying poor condition	Assessment of status	Indicators classifying poor condition
1	Quaternary pore water – Bregovo-Novoselska lowland	BG1G0000Qal001	bad	NO_3	bad	NO_3, PO_4
2	Quaternary pore water - Vidin lowland	BG1G0000Qal002	bad	NO_3	bad	NO_3, Fe
3	Quaternary pore water – Archar-Orsoy lowland	BG1G0000Qal003	good	-	good	-
4	Quaternary pore water - Tsibar lowland	BG1G0000Qal004	good	-	good	-
5	Quaternary pore water - Kozloduy lowland	BG1G0000Qal005	good	-	good	-
6	Quaternary pore water - Ostrov lowland	BG1G0000Qal006	good	-	good	-
7	Quaternary pore water - Karaboaz lowland	BG1G0000Qal007	bad	Cr^{-6}	good	-
8	Quaternary pore water – Belene-Svishtov lowland	BG1G0000Qal008	good	-	bad	PO_4, Mn
9	Quaternary pore water – Vardim-Novgrad lowland	BG1G0000Qal009	bad	Fe, Mn	bad	Mn
10	Quaternary pore water - Brashlyan lowland	BG1G0000Qal010	good	-	good	-
11	Quaternary pore water – Popinsko-Garvanska lowland	BG1G0000Qal011	bad	NO_3	bad	NO_3
12	Quaternary pore water - Aydemir lowland	BG1G0000Qal012	good	-	good	-
13	Quaternary pore water – Lom River	BG1G0000Qal013	bad	NO_3	good	-
14	Quaternary pore water – Tsibritsa River	BG1G0000Qal014	good	-	good	-
15	Quaternary pore water – Ogosta River	BG1G0000Qal015	good	-	good	-
16	Quaternary pore water – Skut River	BG1G0000Qal016	good	*	good	-
17	Quaternary pore water – Iskar River	BG1G0000Qal017	good	-	good	-
18	Quaternary pore water – Vit River	BG1G0000Qal018	good	-	bad	NH_4, NO_2, Mn
19	Quaternary pore water – Ossum River	BG1G0000Qal019	bad	NO_3	bad	NO_3, Mg, Mn
20	Quaternary pore water – Yantra River	BG1G0000Qal020	bad	NO_3	bad	NH_4, Mn
21	Quaternary pore water – Rusenski Lom River and its tributaries	BG1G0000Qal021	good	-	good	-
22	Quaternary pore water – Suha River	BG1G0000Qal052	good	-	good	-
23	Quaternary pore water - between rivers Lom and Iskar	BG1G0000Qpl023	good	-	good	-
24	Quaternary pore water - between rivers Iskar and Vit	BG1G0000Qpl024	good	-	good	-
25	Quaternary pore water - between rivers Vit and Ossum	BG1G0000Qpl025	good	-	bad	NO_3 Mg
26	Quaternary pore water - between rivers Ossum and Yantra	BG1G0000Qpl026	bad	NO_3, Cr^{+6}	bad	PO_4
27	Quaternary pore water – Vratsa Torrential Cone	BG1G0000Qpl027	good	-	good	-
28	Neogene pore water – Lom-Pleven Depression	BG1G00000N2034	bad	NO_3	good	-
29	Neogene pore water – Ruse-Silistra Region	BG1G00000N1035	good	-	good	-

30	Karst water in Lom-Pleven Depression	BG1G00N1bp2036	bad	NO_3	bad	NO_3
31	Karst pore water in Neogen-Sarmat-Dobrudzha	BG1G00000N1049	good	-	bad	NO_3, Fe
32	Karst water in Fore-Balkan	BG1G0000K2s037	good	-	good	-
33	Karst water in Lom-Pleven basin	BG1G0000K2m047	good	-	bad	NO_3
34	Karst water in Lovech-Turnovo massif	BG1G00000K1040	bad	NO_3, Mn	bad	Ca, NO_3, PO_4
35	Karst water in Ruse formation	BG1G0000K1b041	bad	NO_3, PO_4	bad	NO_3, PO_4
36	Karst water in Mramorenski massif	BG1G0000K1b043	bad	NO_3	bad	NO_3, Ca, Ni
37	Karst water in West Balkan	BG1G0000TJK044	good	-	good	-
38	Karst water in Razgrad formation	BG1G0000K1b050	bad	NO_3	bad	NO_3, NH_4
39	Karst water in Central Balkan	BG1G0000TJK045	bad	NO_3	good	-
40	Karst water in Razgrad formation	BG1G0000K1b050	bad	NO_3	bad	NO_3, NH_4
41	Karst water in Malm-Valange basin	BG1G0000J3K051	good	-	bad	NO_3, PO_4
42	Quaternary pore water of Batova River	BG2G000000Q002	bad	SO4, Fe, Mn	bad	Ел.пр., Ca, Cl
43	Pore water in Neogen-Miocene-Sarmat Varna-Botevo-Batovo	BG2G000000N018	bad	NO_3	bad	NO_3,
44	Pore water in Neogen-Miocene-Sarmat NE and Mid-Dobrudzha	BG2G000000N044	bad	NO3, Fe, Na	bad	NO_3, Cl, Na
45	Pore water in Paleogene-Eocene Varna-Shabla	BG2G00000Pg026	good	-	good	-
46	Karst water in Malm-Valange	BG2G000T3K1040	good	-	good	-
47	Karst water in Malm-Valange	BG2G000T3K1041	good	-	good	-

Transboundary groundwater bodies agreed with Romania are "Karst water in Malm-Valange Basin" with code BG1G0000J3K051 and "Porous karst water in Neogene-Sarma-Dobrudzha" with code BG1G0000N1049. Their location is shown in Fgure 3-10.

Fig. 3-10. Transboundary groundwater bodies



Ground water body “Karst water in Malm Valange" with code BG1G0000J3K051 is mainly fed by sources within Northern Bulgaria vault and drains in the territory of Romania, from the Devnya and Zlatinski springs, in the Black Sea and from the deep wells constructed within the Dobrudja coal basin and along the Black Sea coast. The chemical and quantitative status of a groundwater body is "good".

Groundwater body "Porous karst water in Neogene-Sarma-Dobrudzha" with code BG1G00000N1049 is fed by precipitation, surface and irrigation water. Drainage is through springs along the steep coastal slope of the Dobrudzha plateau or deeply incised gullies and multiple abstraction facilities. The quantitative status of groundwater body is "good", while its chemical state in 2012 was "bad."

The records of permits for water abstraction from groundwater body BG1G0000J3K051 list 90 water-intake facilities, and from groundwater body BG1G00000N1049 - 22 intake facilities.

3.2.4 Soil and land use

Land use in the RO-BG cross-border area

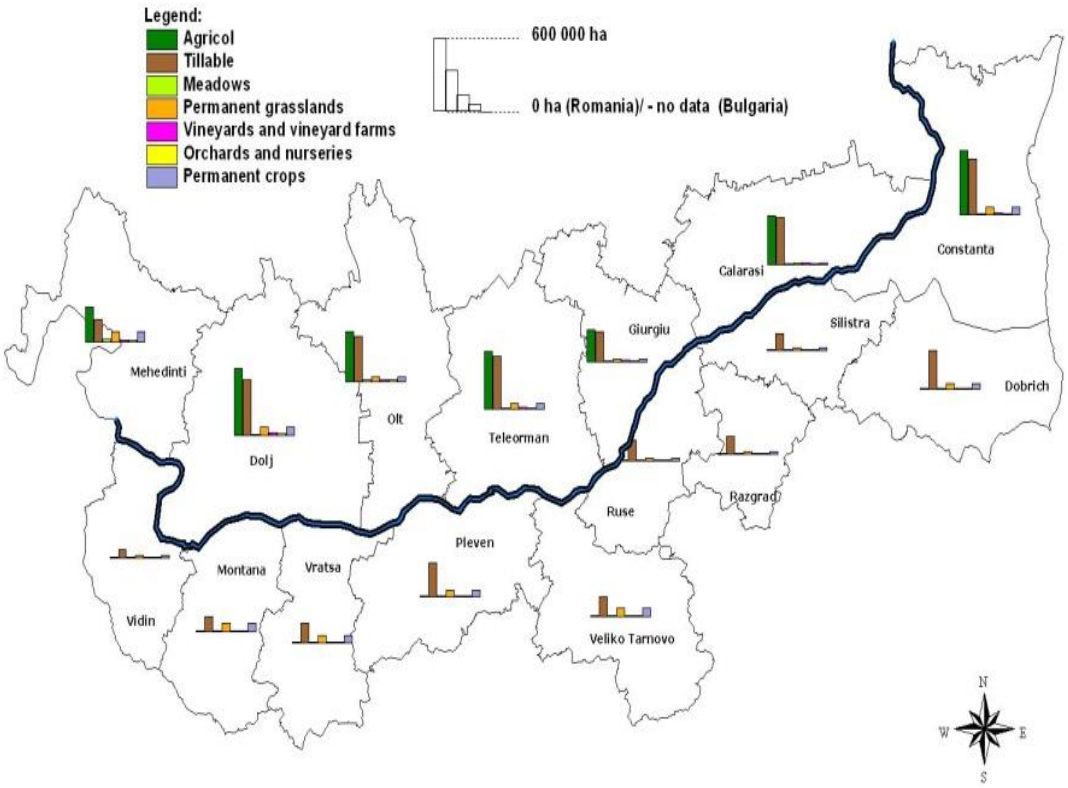
The Romanian side of the cross-border region represents 28% of all arable lands in Romania. The agricultural potential is a significant one, both in terms of arable land, average production per hectare, especially for wheat, barley and two-row barley, maize and sunflower, but also in terms of average production of fruit.

Out of 3 932 thousand hectares in the Romanian area:
- 78.21% were agricultural lands,
- 10.77% forests and other forest lands, and

- 4.02% waters and lakes, representing 19.22% of the waters and lakes of Romania (822.7 thousand hectares).

The Bulgarian side of the cross-border region represents 52% of all arable lands in Bulgaria. The region is specific for its vineyards, representing more than 20% of the total vineyard fields in Bulgaria. The district of Dobrich is occupying first place in the country in terms of agricultural land with 375350 ha, out of which more than 88% are used. This high rate of use of the agricultural land puts the district first in the country. On the other hand, the district of Vidin occupies second place in the country in terms of amount of non-used agricultural land. The unused agricultural land in the district represents 7.7% of all unused agricultural land in Bulgaria and the highest rate of unused land within the district with 21.7%.[8]

Figure 3-11: Land use in the RO-BG cross-border area



Romania

Soil types in the assessed area are very different, according to the specifical geographical conditions, accordint to the attached map.

[8] Source: Report on the use of territory of Republic of Bulgaria for 2011, Ministry of Agriculture, Department for Agrostatistics

Soil status is subject to periodical studies and inventories, which indicate the generl trends for lower productivity and decrease of cultivated lands.

From the inventory conducted in Romania by the Research Institute for Pedology and Agro-chemistry in collaboration with local Offices of Pedology and Agrochemistry Research and with other research units, on agricultural land, of which most represented arable land, soil quality is affected in a smaller or larger extent by one or more restrictions.

Their damaging influences are reflected by the deterioration of the features and functions of the soils, specifically in their bioproductive capacity but, what is even more serious, in affecting the quality of the agricultural products and food safety, with serious consequences for the quality of human life.

These restrictions are determined either by natural factors (climate, form of relief, edaphic features, etc..) or by anthropogenic agricultural and industrial activities, in many cases, the mentioned factors may be acting together in a negative way, having the effect of lowering the soil quality, and even of cancelling their functions.

Identified limiting factors

According to the above mentioned study, the limiting factors are:
- *Drought,* including in areas previously equipped with irrigation systems.
- *Periodic excess moisture in the soil*. Several perimeters from areas with old and inefficient damming works, without maintenance, are periodically flooded, recording serious damages by destroying farms, crops, livestock, communication lines and loss of human life.
- *Water erosion,* present even in areas which are arranged with anti-erosion works, being powerfully degraded in the present in it's most part, this along with *landslides* causing important soil loss of up to 41.5 t/ha per year.
- *Wind erosion* occurs on a significant amount of lands, with the risk of extending, knowing that in recent years, some forests and protective curtains were cleared in areas with sandy soil, being susceptible to this degradation process. These soils have a reduced edaphic volume, low water retention capacity and suffer from the consequences of drought, having a low fertility.
- *The excessive frame content* in the superior part of the soil.
- *Soil salting*, with some worsening trends in the irrigated, drained and irrationally exploited fields, or in areas with secondary salting potential.
- *Damage to soil structure and secondary consolidation* ("plough sole") occurs and a primary consolidation is present and tend to form a surface crust.
- *The agrochemical status*, analyzed on 66% of the agricultural fund, presents the following unfavorable attributes:
    - strong and moderate acidity or moderate-strong alkalinity of agricultural land;
    - weak to very weak insurance of soil with mobile phosphorus;
    - weak insurance of soil with mobile potassium;
    - weak insurance of soil with mobile nitrogen;
    - extremely low to low insurance of soil with humus;
    - deficiencies in micro-elements on significant areas, especially zinc deficiencies, strongly felt in the maize culture.
- *Physical-chemical and chemical pollution* of the soil affects about large areas of land. Although, in recent years, a number of industrial units were closed and others have reduced their activity, soil pollution remains high in the strongly affected areas. Oil pollution and salty water from oil exploitation, refining and transport is also present.
- *Soil damage by excavation works* affects about large areas, being the most serious form of damage to soil, common in the mining industry, for example, in the mining basin of Oltenia. The quality of the lands affected by this type of pollution has decreased by 1 to 3 classes, so some of these areas have become practically unproductive.

- *Covering soils with waste and solid residues* caused the removal from the agricultural circuit of significant areas.

Certain limiting factors are consequences of climate change effects, which mostly affect the agriculture.

Agricultural land and its vulnerability to climate change

In terms of pluviometric data, more than 90% of the climate patterns forecast for the period 2090-2099 revealed severe droughts during summer, especially in South and South-East of Romania (with negative deviations compared with the period 1980-1990, more than 20%). With respect to the precipitations during winter, the deviations are smaller and the uncertainty higher.

The agriculture represents the most vulnerable field, the studies showing the following aspects[9]:

- In the case of wheat crop , the analysis of simulated results under two regional climate scenarios (2020-2050 and 2080-2099) shows an increase in grain production (on average by 10.3 % to 34.8 % from current levels according to the modification of the genetic coefficient factor on vernalization and photoperiod) and more rapid development of culture, i.e. 8 days to 21 days earlier, compared to the current period and agricultural region, the increases occurring in the southern and south-eastern areas where thermal values growth trend is more obvious and as a result, forcing vegetative processe is more intense.
- The simulated results for the agricultural area in southern Romania indicates that wheat varieties with average requirements for vernalization and low to reduced photoperiod requirements are the best combination to ensure the best use of future climate resources, allowing constant yields and a reduced annual variability. Increased wheat production under climate change is due to the positive effect of increased atmospheric CO2 levels on photosynthesis, which counteracts the negative effect of shortening the growing season due to rising air temperature.
- In the case of corn crops, in the southern-eastern part of Romania, according to climate projections for 2020-250 period, shortening of the growing season by average with 20 to 37 days can be produced, due to rising air temperature and thus decrease of production by 14% until 2020 and 21% by 2050, as a result of increased soil water deficits, especially in the grain filling phase (July-August). Corn, since is a C4 plant, benefits less from the effect of increased CO2 concentration on photosynthesis.

Bulgaria

The soil distribution in the region is connected with its physical and geographical characteristics. In the Danube valley the soil is primary carbonates and typical black earth, leach soils and podzolized are developed in the highest southern and eastern parts, in the most west part of the Danube valley (west from Belogradchik). South from the black earth zone, in the northern parts of the Fore-Balkan are spread dark grey, and in the southern parts - grey forest and maroon forest soils. Humus-carbonate soils are developed in the karst areas. In the rivers' valleys are spread alluvial-lawn soils.

Danube plain is characterized by fertile black soil, in the Fore are distributed gray forest soils and in the Balkan area - brown forest and mountain-meadow soils. The characteristics of the majority of soils are very favorable for the development of key sectors of agriculture and livestock. The minerals in the area are of local importance, mainly construction materials - lime, industrial minerals, granite, diabase.

According to the National Report on the state and condition of the environment (2014 edition) soils in the country are in good ecological status in the period 2005 - 2012 as

[9] According to study of the Romanian National Institute of Hydrology and Waters Management „*The impact of the climate changes and of the framework directive on costs and water resources in southeast of Romania"*, which started in 2011, to be developed until 2014

regards the availability of nutrients / organic matter, as well as contamination with heavy metals, metalloids and persistent organic pollutants (PAHs, PCBs and organochlorine pesticides). PCBs are below the limit of detection, and 98.9% of PAHs were below the MRLs. In the area under consideration the values for the maximum permissible concentrations of heavy metals are exceeded in Montana.

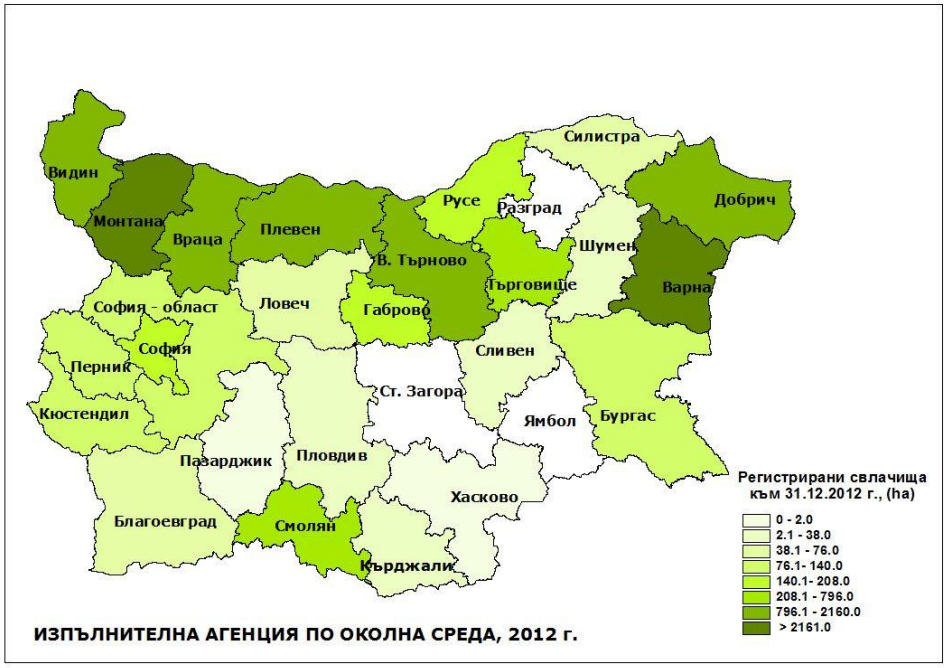
In the period 2007 - 2012 a tendency of limiting the water erosion is observed, both in terms of size distribution and in terms of average annual soil loss. Soil losses from wind erosion are retained, but areas with low risk are reduced at the expense of those with moderate and high risk. There was a slight increase of cultivated land and of utilized agricultural area, while uncultivated land reduced.

In 2012 the water erosion on agricultural land area of Ruse has moderate intensity (between 5,03 t/ha/y and 8,7 t/ha/y) and the actual risk of water erosion is very reduced to limited areas in the other regions of concern.

In the assessment area with the highest risk of wind erosion are the fields in Dobrich (187131 ha) and Silistra (5480 ha) and soil losses are greatest in the regions of Dobrich, Ruse and Silistra.

In 2012, 31 newly occurring landslides were registered Bulgaria with a total area of 39,3 ha. Most of the new landslides are in Dobrich, Varna and Veliko Tarnovo - 13 landslides with a total area of 38,12 ha. The next figure shows the spatial distribution of areas affected by landslides.

Figure 3-12. Distribution of areas affected by landslides, ha



Source: MPP; "Geoprotection" Ltd. - Varna, Pleven, Pernik

According to data from the National Report on the status and conservation of the environment (edition 2014) the trend in 2012 is increase in the number of landslides and affected areas.

3.2.5 Landscape

Romania

On the Romanian side of the RO-BG CBC 2014-2020 there is a variety of landscapes: mountains with gorges and canyons, hills and plateaus, plains and river plains, rivers and

lakes. The best known are hereinafter introduced for the administrative units within the programme scope.

In point of landscape, **Mehedinţi County**is characterised by the grand landscape of the Danube River and its canyon, the mountainscape diversity, the presence of remarkable flora and fauna elements, many of which have been included in scientific reserves.

A list of the landscape attractions of the area includes:

- the Iron Gates I area, with the Danube canyon, clisura with the Large and Small Cazane, reservoirs, the hydropower and navigation system, the many viaducts built over wild valleys, the city of Orşova, spreading in an amphitheatre on the bank of the Cerna bay.

- Ostrovul Şimian – an island downstream of Drobeta Turnu Severin, hosting the relocated the citadel of the sunken Ada-Kaleh island.

- The northern part o the county, characterised by beautiful landscapes. It includes the town of Baia de Aramă, and about 4 km north-west of Baia de Aramă the Ponoare Karst complex, with several natural monuments (the natural bridge at Ponoare, karst lakes Zatonul Mare and Zatonul Mic, Ponoare Cave and the clints plateau above the cave). Topolniţa Cave is also in this area, having an explored length of 10.330 m, the second largest in the country.

Dolj County is characterised by a **variety of landscapes**:

- *Hills* (Dealul Amaradiei);
- *Plains* (Campia Romana, Lunca Dunarii);
- *Rivers* (the Jiu, the Danube);
- *Lakes* (Bistret, Fantana Banului, Maglavit, Golenti, Ciuperceni),

which are all tourist attractions, along with the natural reserve landscapes including:

- Ciurumela Forest at Poiana Mare;
- The Bird Reserve at Ciupercenii Noi;
- The wild peony reserve at Plenita, etc.

Objects of remarkable landscape value, natural attractions of Olt County, include**:**

- **The Danube Valley**, with its islands and beaches, offering valuable landscapes of recreational value.
- **The Olt Valley**, looking like a garland of lakes after the now operational hydropower developments were put in place, attracting by the beauty of the images created by the vast water surfaces, forests, with a variety of tree species, which create outstanding landscapes throughout the vegetation stages.

It is said of **Calarasi** County that the Danube creates fairy-tale landscapes:

- Natural reserves Ostrovul Ciocanesti, Ostrovul Haralambie and Ostrovul Soimul are only some of the areas that deserve full attention.
- Sarulesti, a community on the left bank of Mostistea River.
- Valea Rosie Lake, n the commune of Mitreni, is remarkable, as a naturally occurring salt lake.

Giurgiu County is renowned for the landscapes in and around the commune of **Comana**. The Comana forest reserve is a natural monument, a paradise of flora and fauna specific to the **Danube Plain**.

Teleorman County is characterised by a variety of landscapes:

- *plains*(Campia Gavanu-Burdea, Burnaz, Boian, Lunca Dunarii);
- *rivers* (the Olt, the Calmatui, the Vedea, the Danube);
- *lakes* (Bercelu, Sarat, Balta Rosie, Balta lui Bran, Calina, Balta Luciei, Vartoape, Suhaia, Fatana).

Constanta County is renowned for its outstanding natural landscapes in 26 nature reserves, including:

- *Cheile Dobrogei;*
- *Natural Reserve Masivul Cheia;*
- *The Chalky Walls at Petrosani;*
- *Nature reserve Obanul Mare and Movile Cave;*
- *Fossil-bearing lake Aliman*
- *Natural reserve Acvatoriul litoral marin Vama Veche-2Mai;*
- *Harsova Canals, etc.*

Bulgaria features notable diversity with the landscape ranging from highlands to lowlands, including the typically continental Danubian Plain (ancient Moesia) in the north.

Concerned area falls within the Moesian hilly plateau plane and part of the Balkan system. Typical of the region's landscapes belong to the classes of lowland landscapes inter-montane plain-lowland landscapes, valley landscapes and mountain landscapes. The northern boundary of the region coincides with the Bulgarian north border. Dominating groups of landscapes in the border area are chernozem steppe plains of loess rocks with high agricultural use, landscapes chernozem steppe plains on carbonate rocks with moderate agricultural use, and landscapes of flat open karst in carbonate sedimentary rocks of karst surfaces, which - to the south - pass into the open karst landscapes on the slopes of canyon valleys, intersecting planes of sedimentary carbonate rocks.

The eastern boundary of the analyzed area coincides with part of the eastern border of Bulgaria. Along the coast from north to south predominantly repeat landscape groups of coastal strips, landscapes of rocky cliffs, landscapes of flat open karst in carbonate sedimentary rocks of karst surfaces, landscapes of lagoon lakes (wetlands) , landscapes of dense forests on the low talus deposits and landscapes of dense forests on the low uncohesive Holocene marine sediments.

There are also groups of landscapes of meadow-steppe rolling beds of valleys in the inner montane uncohesive Quaternary deposits having high level of agricultural use, landscapes of woodland-meadow-steppe rolling beds of valleys in the inner montane pans on Cretaceous sediments having moderate level of agricultural use, landscapes of lowland dense forests on alluvial deposits, landscapes of lowland xenophyte shrub woodland on Mesozoic and Palaeogene clay-sandy sediments with relatively low level of agricultural use, and landscapes of mid-montane deciduous forests on non-carbonate sedimentary rocks.

Among the sensitive landscapes are considered to be unique landscapes of natural attractions that are protected by law. More information about sensitive landscapes is provided in Section 4.

3.2.6 Biodiversity

The flora and fauna have specific and diverse features according to the climate and relief forms. The southern elements have a great effect on Mehedinti on the Romanian side. Several Mediterranean plants and animal species are present in the programme area such as fig tree, almond, and horned viper. There are also several species of scorpion, lizard, and newt in the Romanian side of the cross-border area. Some species of the Mediterranean flora have spread in the Danube gorge, i.e., Oriental hornbeam (Carpinus orientalis), Turkish hazel (Corylus colurna).

The fauna in the area has continental and steppe species (voles, shrews, and other small rodents, bats, toads, snakes, etc.). There are large varieties of birds and fishes: over 200 species of birds in the lake areas, islands and forests close to the Danube. The presence of big games is important from the hunting tourism's point of view.

The forests cover a remarkable part of the territory, thus the sustainable management of forests is a crucial issue. Forests are very important for the erosion protection of agriculture lands, as well as for the biodiversity conservation. Two municipalities (General Toshevo and Krushari) on the Bulgarian side of the cross-border region could provide a good example with their Multifunctional Forest Management Plans.

The Romanian cross-border regions, e.g., Dolj and Olt have rich fields with the specific vegetation of steppe and forest steppe areas; however tree vegetation is relatively small. The forests consist of only few species. The most typical ones are: Euro-American poplar (Populus), pedunculate oak or English oak (Quercus robur), white willow (Salix alba), Narrow-leafed Ash (Fraxinus angustifolia), elm (Ulmus), linden (Tilia), Tatar Maple (Acer tataricum). Nearby the Danube, the vegetation is particularly rich.

3.2.6.1 Flora and fauna

Romania

In **Mehedinti County** the research conducted to date indicates that the county has great floristic diversity, over 4000 taxa, belonging to the phylums: *Phycophyta, Lychenophyt, Fungi, Bryophyta, Cormophyta*. Endemic species are around 28 in the *Iron Gates Natural Park* and 23 in *Domogled-Cerna Valley National Park*. A large number of plant species are rare, endangered and endemic, whose area is only in the Iron Gates Natural Park, thus requiring special measures of protection. These include: *Stipa danubialis*, Iron Gates apiaceae (*Prangos carinata*), Rhodope tulip (*Tulipa hungarica*), bluebell (*Campanula crassipes*) etc. Habitats encountered within Mehedinti are meadows and scrubland, forest, rocky, caves and wetland. Status of wild flora and fauna is directly linked to the state of natural habitats, by the impact caused by the action of other environmental factors.

The research conducted so far on the fauna of the Mehedinti has revealed a great diversity of species of vertebrates and invertebrates. Among vertebrate animals the situation so far is as follows: Pisces Class, Amphibians Class, Birds Class, Mammals class. Avifauna consists of a large number of species of birds, mostly concentrated in Iron Gates Natural Park and two wetlands in the county. The great number of species present is due to the variety of biotopes in this area, on a small area a large number of species can be found, which is rare in our country.

In **Dolj County** 4 habitats of national interest are identified: marshes with sources rich in mineral salts, wooded grassland, deciduous swamp forests, (natural dystrophic lakes and ponds) and 19 habitats of community interest such as: grassland and Ponto-Pannonian and Sarmatian salt marshes; oligotrophic to mesotrophic stagnant waters with vegetation of *Littorelletea uniflorae* and/or *Isoëto - Nanojuncetea*; Pannonian and west-pontic grasslands on sands; eurosiberian steppe vegetation with *Quercus spp*; dunes with *Hippophae rhamnoides*, intra-dune wet depressions , natural eutrophic lakes with vegetation of Magnopotamion or Hzdrocharition type. 170 species of national interest and

a number of 86 species of Community interest have been identified. Among the species of flora and fauna of national interest are 56 are plant species and 114 are animal species (17 species of national interest mammals, 43 species of birds of national interest, 14 reptile species of national interest, 13 amphibians of national interest, 9 fish species of national interest, 18 species of invertebrates of national interest). Also, species of community interest have been identified, including: two mammalian species of Community interest, 50 wild bird species of Community interest, 12 reptile species of Community interest, 12 fish species of Community interest, five invertebrate species of Community interest, three plant species of Community interest.

The **Olt County** is characterized by a moderate level of biodiversity - in terms of number of species, habitats and ecosystems they form and in terms of land held by them, but the current changes of scenery highlight serious threats: intensification of agricultural activities affecting especially productive areas and the abandonment of farming that is manifested especially in less productive areas. Regarding flora, in Olt County there are 2,700 plant species identified, of which three are declared natural monuments, nine are endangered, 17 vulnerable and 35 rare . Natural and semi-natural ecosystems cover 17 % of the county. 13 types of habitats specific to wetland, 1 habitat specific to pastures and meadows, six forest habitats have been identified and characterized. Habitats in the county are characterized by a certain composition of flora and fauna, biocenosis components and are influenced by various climatic and soil factors. Climate influences, of the south west arid areas, to the temperate continental in northern part of the county, as well as climatic differences between the south and the north imposed by terrain elevation, resulted in a large number of habitats. The following habitats have been identified: Pontic-Sarmatian deciduous shrubs, eurosiberian forest steppe vegetation with *Quercus spp*, alluvial grasslands in *Cnidion dubii*, Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion alba*), mixed riparian forests with *Quercus robur, Ulmus laevis, Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*), warblers with *Salix alba* and *Populus alba*, Ponto-Sarmatian forest vegetation with pubescent oak, oak and hornbeam Dacian forests, Balkan-Pannonian forests of sky and oak, eurosiberian steppe vegetation with *Quercus spp*.

Avifauna of Olt County consists of species: *Ardea purpurea, Ardeola ralloides, Aythya nyroca, Botaurus stellaris, Charadrius alexandrinus, Chlidonias hybridus, Chlidonias niger, Ciconia ciconia, Circus aeruginosus, Cygnus cygnus, Egretta alba, Egretta garzetta, Himantopus himantopus, Ixobrychus minutus, Mergus albellus, Milvus migrans, Nycticorax nycticorax, Pelecanus crispus, Phalacrocorax pygmeus, Philomachus pugnax, Platalea leucorodia, Sterna albifrons, Plegadis falcinellus, Porzana porzana, Recurvirostra avosetta, Sterna hirundo, Tringa glareola*.

In **Teleorman county** the good state of forest prevails, a small area is in bad condition due to the phenomenon of drying and abusive cutting in private property. The forests occupy 24 708 ha (4.3% of the county's area).

In **Giurgiu county**, to prevent loss of biodiversity, several categories of protected areas were established as follows: six protected areas of national interest and nine protected areas of Community interest. Protected natural areas of community interest cover 16.34% of the county. The main types of coverings in Giurgiu county are forests, agricultural lands and water bodies. Forests play an important role in the evolution of the biodiversity and distribution of the ecosystem services. They provide natural habitat for plant and animal life, protection against soil erosion and flooding, climate regulation, with high recreational value. In the county of Giurgiu 10% of its surface is covered by forest and its conservation status is favorable.

Calarasi County is made, in terms of habitat, of anthropogenic life environments in percentage of 98%, the dominant being plain. Most common habitats are grasslands, forest and freshwater, of which predominant are: Oligotrophic to mesotrophic standing waters with vegetation of *Littorelletea iniflorae* and/or *Isoeto-Nanojuncetea*, strongly

mesotrophic waters with benthic vegetation of *Chara* species, rivers with muddy banks with *Chenopodion rubri* and *Bidention* vegetation; *Cnidion dubii* alluvial meadows. In the Danube Valley and habitat islands most often we find 92A0 coded habitat, called on the European level, Warbles with *Salix alba* (white willow) and *Populus alba* (white poplar) with *Rubis caesius* (blackberry stubble), and on the banks and very high islands a different type of habitat, the one coded 91F0 and named Mixed Riparian Forest with *Quercus robur* (English oak), *Ulmus laevis* (white elm), *Ulmus minor* (field elm), *Fraxinus angustifolia* (ash field). This third type of habitat, encoded 91E0 * is the Alluvial Forests with *Alnus glutinosa* (black alder) and *Fraxinus excelsior* (common ash) or *Fraxinus angustifolia* (narrow leafed ash). In the Danube Valley, this habitat corresponds to black poplar warbles, with *Rubus caesius* as black poplar forest along the Danube has the same role as black alder forest along rivers in mountain and hill. Flora and fauna of Calarasi county are characteristic to steppe and forest steppe zone, being directly influenced by the state of the environment in the county and not only.

Calarasi fauna includes species of hunting interest, of which we mention boar, deer, pheasant, hare, and fox. In the ponds and lakes one can find wild ducks and geese. Among the fish that inhabit the waters of lakes and ponds we mention crucian carp, bream, perch, zander and pike, and in the Danube and Borcea we find cat fish, sturgeon and Danube mackerel.

Constanta county is characterized by a large number of natural and semi-natural habitats with a vast diversity: aquatic habitat (freshwater aquatic habitats, brackish, marine and coastal), terrestrial habitats (habitats of forest, grassland and scrub steppe, steppe habitats, swamps and bogs) and underground habitats (cave habitats). Habitats identified so far are classified into seven classes (coastal and halophytic communities , continental waterways, thickets and meadows , forests, marshes and wetlands, detritus, rocks and continental sands, agricultural land and artificial landscapes), which include 58 types of habitats natural and ruderal communities (agricultural land and artificial landscapes), according to the classification presented in the paper "Habitats from Romania", 2005 N. Doniță et. al., and annex 2 of the *GEO no. 57/2007 on the regime of protected natural habitats, conservation of natural habitats, of wild flora and fauna* and annex I of the Habitats Directive (92/43/EEC). Among the 54 natural habitat types present or possibly present, six are European priority natural habitats and 25 require special conservation measures nationally and are characterized by a high and very high conservation value. Regarding ecology of plant species, dominant species are xerofile and xeromezofile, followed by mesophilic, hygrophilic and hydrophilic. Dobrudja is characterized by the floristic migration phenomenon particularly emphasized due to its climate, soil types at the location at the confluence of migration routes of varied phytogeographical elements (central European, Balkan, Pontic-Balkan, Pontic-Pannonian, Pontic, Euxine, tauro-Caucasus, Mediterranean, sub-Mediterranean etc.). Representatives are Eurasian species to which numerous Balkan, Pontic-Mediterranean, sub-Mediterranean and continental species are added. Particularly interesting is *marine dune vegetation at Agigea* where on a small land area, a large variety of arenicole plants, some of which are endemic are present. Floristic rarities here are *Ephedra distachya* tertiary relict (tendril), *Alyssum borzeanum* (sand hoary alyssum) and *Convolvulus persicus* (bindweed sand).

Wildlife of Constanta County is characterized by great richness, as a consequence of the variety of habitats and is represented by a number of more than 345 types of vertebrate (45 species of mammals, 243 species of birds, 19 species of reptiles, 10 species of amphibians and 28 species of fish) and a considerable number of invertebrates. Very well represented numerically are bats in the family of Rhinolophidae and Vespertilionidae, most of them vulnerable or endangered species.

Bulgaria

According to Geobotanical zoning of Bulgaria (in Bondev, 1997), the cross-border area is located in the European deciduous forest area, covering parts of the Eurasian steppe and forest-steppe region. The physiographic location of the cross-border area features significant biodiversity. Much of the populations and habitats of protected species of flora and fauna are included within the protected areas. Characteristic protected habitats in the assessed territory are thermophilic beech forests (*Cephalanthero -Fagion*), oak-hornbeam forests of the type *Galio-Carpinetum*, mixed forests of the union *Tilio-Acerion* on screes and ravines, acidophilic *Picea* forests of the montane to alpine belt (*Vaccinio-Piceetea*), Pannonian woods with *Quercus petraea* and *Carpinus betulus*, forests of *Castanea sativa, Molinia* meadows on calcareous, peaty or clayey soils (*Molinion caeruleae*) and others.

The Lower Danube province is characterized by residual xerothermal woodland of *Quercus pubescens, Quercus cerris,* and *Quercus frainetto*. In the Rousse region of floral elements occur the Bulgarian endemic species *Chamaecytisus kovacevii* and steppe elements such as *Stipa lessingiana, Camphorosma monspeliaca, Chamaecytisus danubialis, Salvia scabiosifolia* and others.

A number of wetlands along the Danube are important for bird fauna. The most significant of these is the Srebarna Lake. 179 species are established within the protected area, among which 50 are included in the Red Data Book of Bulgaria. Here is the only country colony of Dalmatian pelicans. Along with the neighboring wetlands was formed complex essential for the pygmy cormorant, night heron and Sandwich Spoonbill, Ferruginous Duck, otter, steppe and marbled polecat.

In the coasts of the lower parts of the rivers and their estuaries are distributed dense forests dominated by Fraxinus oxycarpa, at places with ocurrence or dominance of *Ulmus minor, Populus alba, Quercus robur and Q. pedunculiflora*, rarely *Alnus glutinosa* and other species, including liana species such as *Smilax excelsa, Periploca graeca* and other. Grass species in the forests often include the euxeinos species *Scilla bithynica*.

The salt lakes and firths are nesting and wintering place for many rare birds. Much of the population of the Red -breasted Goose and many thousands of flocks of Greater White-fronted Goose winter in the area.

The biodiversity in **Vidin Region** is comparatively rich.[10] The floral variety of the region is a result from the diversity in the conditions and habitations. Almost all typical for Bulgaria habitats are spread on approximately small territory. At the same time there are places where unique conditions have been created for the origin and differentiation of the so called endemics, local species which are spread only in a particular region. Species of that kind is for example the Bulgarian eranthis (*Eranthis bulgaricus*). Among the most interesting Balkan endemics are the Siberian melic grass (*Melisa altissima*), Simphyandra wanery and Serbian ramonda (*Ramonda serbica*), which is a tertiary relict. In many places as a result from human activities, mainly timber industry, the original vegetation has been replaced by industrial species, for example hornbeam with manna-ash, hazel bush, thorny bush and others.

The fauna is very rich - there are 179 bird species, 53 mammal species from which 14 bat species, 11 amphibian species and 15 snake species. Birds are the most numerous group from the vertebrates. Globally threatened species such as Lesser kestrel (*Falco naumanni*) and Corncake (*Crex crex*) occur in the area. Many of the birds are of European conservation importance – the Black stork (*Ciconia nigra*), red kite (*Milvus milvus*), Hen harrier (C*ircus cyaneus*), Saker (*Falco cherrug*), Rock partridge (*Alectoris graeca*), turtle dove (*Streptopelia turtur*), Eagle owl (*Bubo bubo*), Barn owl (*Tyto alba*) and others.

[10] Source: http://en.vidin.government.bg/094/60-16-16/sidebar/oblast_vidin/okolna_sreda2.html

Diversity of plant and animal species in the southern part of **Vratsa** region and the Danube Valley is extremely high. The extensive rock complexes of Nature Park "Vrachanski Balkan" are habitat for over 250 species of vertebrates, among which the largest group comprises over 180 bird species. This is a nesting area of Alpine chough (*Pyrhocorax graculus*), Alpine swift (*Tachymarptes melba*), Wallcreeper (*Tichodroma muraria*), Water pipit (*Anthus spinoletta*), various woodpeckers, Egyptian vulture (*Neophron percnopterus*). Even rarely, in the region occur Golden eagle (*Aquila chrysaetos*), Common buzzard (*Buteo buteo*), Sparrowhawk (*Accipiter nisus*) and other raptors using the area for hunting. Also occyrring are Marbled polecat (*Vormella peregusna*), Meadow lizard (*Darevskia praticola*) and Balkan wall lizard (*Podarcis tauricus*), Horned viper (*Vipera ammodytes*), etc.Cave fauna is one of the greatest treasures of the area. Some of the cave species are found only here. Much of the animal species are included in the Red Data Book of Bulgaria as endangered and rare.[11]

The flora is also rich, with many rare and threatened species, as only within “Vrachanski Balkan” there are more than 700 species of plants comprising 1/5 of the Bulgarian Flor. 51 of them are identified as rare or threatened with extinction, 25 species are protected by the Nature Protection Act. Critically endangered plants within the area are: *Campanula jordanovii, Centranthus kellererii, Chamaecytisus kovacevii, Juniperus sabina, Lilium jankae, Slene velcevii* and *Traunsteneira globosa*.[12]

Forest wealth of **Montana** region include arrays of beech, oak, white pine, black pine and spruce. Spread are many herbs, some of which are St. John's wort, marjoram, lemon balm, yarrow, lime, black elderberry, black and red haw, red peony, etc. Some of the endemic species are Bulgarian eranthis (*Eranthis bulgaricus*) (the only locality in the world is located within the protected area "Vrashka chuka"), *Crocus tommasinianus, Potentilla nicicii, Paeonia mascula, Centaurea calocephala, Galanthus elwesii, Anemone sylvestris*, and other.[13]

Common animal species are deer, red deer, fallow deer, wild boar, hare, rabbits, pheasant. There are over 100 bird species, most of which are permanent, while others are passing.[14] Among the rich avifauna occur a number of waterbirds, such as swans, pelicans, ibises, geese, ducks, grebes, etc. , and necrophages - vultures, ravens - gravediggers, as well as owls, eagles, etc.

In **Pleven** occur a variety of habitats - from marshes to sand, grass, brush, forests, rocky areas, etc. A number of protected plants inhabit these, including floating watering (*Salvinia natans*), Giant snowdrop (*Galanthus elwesii*), *Seseli degenii, Centaurea arenaria, Jurinea ledebourii, Dianthus carthusianorum, Silene velcevii* and many others.[15]

Among the animals there are a number of amphibians, invertebrates, fish, mammals and many birds, most of which are protected. In the area occur Black Stork (*Ciconia nigra*), Purple Heron (*Ardea purpurea*), Great Bittern (*Botaurus stellaris*), Osprey (*Pandion haliaetus*), Goshawk (*Accipiter gentilis*), Sparrowhawk (*Accipiter nisus*), Long-legged Buzzard (*Buteo rufinus*), Booted Eagle (*Aquila pennata*), Steppe Eagle *(Aquila nipalensis*), Lesser Spotted Eagle (*Aquila pomarina*), Imperial Eagle (*Aquila heliaca*), Golden Eagle (*Aquila chrysaetos*), Short-toed eagle (*Circaetus gallicus*), Hobby (*Falco subbuteo*), Common Redshank (*Tringa tetanus*), Green sandpiper (*Tringa ochropus*), Eurasian Woodcock (*Scolopax rusticola*), *Stock Dove* (Columba oenas), *Eagle Owl* (Bubo bubo), etc.

[11] Source: http://riosv.vracakarst.com/pic/RIOSV_Vratsa_2013.pdf

[12] Source: http://vr-balkan.net/en/home

[13] Source: http://www.riosv-montana.com/kd/2010-10-28-13-17-00/cat_view/61--/64------

[14] Source: http://oblastmontana.org/en/index.php?do=cat&category=oblast

[15] Source: http://riew-pleven.eu/bio.html

The **Veliko Tarnovo** region covers much of relict and endemic elements characteristic of Fore-Balkan of the order *Haberlea, Ostrya, Libanotis, Chamaecytisus*. There are many medicinal plants. Woodlands occupy a significant portion of the total area of protected areas in the region. Some of the species of conservation importance are *Galanthis elwesii*, *Sabanejewia balcanica*, Common fire salamander (*Salamandra salamandra*), smooth (common) newt (*Triturus vulgaris*), Southern crested newt (*Tritutus karelinii*), Yellow-bellied toad (*Bombina variegata*), European tree frog (*Hyla arborea*), European pond turtle (*Emys orbicularis*), otter (*Lutra lutra*), and other.

Among the protected rare and vulnerable bird species are Grey Heron (*Ardea cinerea*), Little Bittern (*Ixobrichus minutus*), Black Stork (*Ciconia nigra*), Common Buzzard (*Buteo buteo*), Sparrowhawk (*Accipiter nisus*), Hobby (*Falco subbuteo*), Corncrake (*Crex crex*), Common Moorhen (*Gallinula chloropus*), Green sndpiper (*Tringa ochropus*), Scops owl (*Otus scops*), Common kingfisher (*Alcedo atthis*), European beeeater(*Merops apiaster*), Grey woodpecker (*Picus canus*), Great reed warbler (*Acrocephalus arundinaceus*), Barred Warbler(*Sylvia nisoria*), Ortolan bunting (*Emberiza hortulana*).[16]

The biodiversity of **Ruse** region is rich, as Russenski Lom Nature Park alone is home to 930 plant species, of which 1 is Bulgarian and 30 are Balkan Peninsula endemic plants. The Kovachev's Broom and the Dieckian Mullein are only found there. The Emile Popov's Cinquefoil, Snowdrop Windflower, Common Snowdrop, and the Common Rue are among the rare species listed in Bulgaria's Red Book too, along with many other.

Adding to the incredible variety are 10 species of amphibians (five among them protected) and 19 species of reptiles. Of special zoogeographic value is the small Night Lizard that dwells around the Lom Rivers– the only representative of the Gekkonidae in Bulgaria, as well as the Sheltopusik, or European Legless Lizard, whose occurrence in this country is scarce. Worth mentioning among invertebrates are the Carpathian Scorpion and the Scolopendra. The small Praying Mantis, the black Bradyporus dasypus, a few predatory beetles, and the Apollo butterfly are among the insects found here. The forest kingdom is inhabited by 66 species of mammals, of a total of 92 in Bulgaria, of which 20 species of rodents. Cohabiting there are roe deer, deer, wild boars, wolves, foxes, jackals, wild cats, hedgehogs, and dormouses.

The avian universe of the Lom Area fascinates with its abundance and diversity. Egyptian Vulture, Golden Eagle, Black Stork, Short-toed Eagle, Saker Falcon, Lesser Kestrel, and Ruddy Shelduck, all of them listed in Bulgaria's Red Book, can be seen in the niches and on the terraces of the Lom canyon area, along with many other bird species.

The **Silistra** region is characterized by xerothermal residual forests dominated by oak, oak and secondary forests of hornbeam. The most important protected area in Silistra is maintained reserve "Srebarna". Within the reserve and its surroundings so far are identified 230 bird species, representing 57.5% of the identified species in Bulgarian avifauna (about 400 species). 132 are breeding species, 98 are hibernating. Fifty-eight species are listed in the Red Data Book of Bulgaria (1985), and 10 are globally threatened species. These include Pygmy Cormorant (*Phalacrocorax pygmeus*), Dalmatian Pelican (*Pelecanus crispus*) and Ferruginous Duck (*Aythya nyroca*). Dalmatian pelican and Great white egret nest in the country only in "Srebarna" The reserve hosts about 65 nesting pairs of Dalmatian pelican, out of the total European population of 1200 to 1500 individuals.

The favorable physico-geographical factors in **Dobrich** region – plane lanscape and very good soil structure – precondition the largest share of agricultural land there - 80.3% at the national average of 58%. Analysis of the distribution of agricultural land by manner of use shows dominant share of fields to plantations and pastures in all municipalities. The

[16] Source: http://www.veliko-tarnovo.bg/bg/opazvane-na-okolnata-sreda/bioraznoobrazie/

proportion of forest areas is very small - only 12.3% at average for the country 34%. Moreover, this rate is mainly due to forest belts, while the share of real woodland is low.

Despite intensive development of agriculture in the territory of Dobrich there are places untouched by human activity. Above the region passes one of the two main bird migration routes - Via Pontica. Here are the coastal wetlands of international importance, relict steppe areas with abundant vegetation - almost 400 species, including 40 rare, endangered and endemic species.[17]

B. Marine and coastal environment

The Romanian coastal area has a length of 244 km, representing 7,65% of the national border and it is divided in terms of economic and social characteristics into two main areas:

- the northern area (about 164 km length), from Musura Gulf up to Midia Cape and
- the southern area (80km) from Midia Cape up to Vama Veche.

The northern area consists in a protected region of delta, including the Danube Delta, on the territory of which the Danube Delta Biosphere Reservation was established. The national and international legislation imposes that the economic activities in the area to be in accordance with the status of natural reservation so as to maintain an ecological balance.

The southern area is considered a developed area, where the economic activities are concentrated and closely related to the position near the sea.

On the background of a restructuring of the economic activities, the increase of demands in terms of environmental policies implementation, the establishment of protected marine areas (more than 71% of the length of the shore) as well as the new regulations regarding the exploitation of the marine resources, have determined a process of recovery of the marine ecosystem, in the last years.

The Bulgarian Black Sea Coast covers the entire eastern bound of Bulgaria stretching from the Romanian Black Sea resorts in the north to European Turkey in the south, along 378 km of coastline. The region is an important center of tourism.

The sustainable development of the coastal area requires the cooperation of all the riparian countries to the Black Sea. Thus, ***The Strategic Plan of Action for the Rehabilitation and Protection of the Black Sea*** was elaborated. Its general objectives aim for the ensuring of a healthy environment for the population around the Black Sea, both in the urban areas as well as in the rural ones, obtaining a diverse marine ecosystem from a biological perspective, which contains diverse and viable populations of superior organisms, including marine mammals and sturgeons, which should be able to support the means of living resulting from a sustainable activity, such as fishing, aquiculture and tourism in all the countries of the Black Sea.

The number of marine habitats of community interest (as defined in the Habitats Directive - 92/43/CEE), at the level of the Romanian seaside, has been evaluated as consisting in 8 general types:

1110 - Submersed banks of sand in shallow water;

1130 – Estuaries;

1140 - Sand and mud surfaces discovered at low tide;

[17] Source: http://www.varna-bg.com/library/geografia/dobrich/ekologia.html

1150 - Coastal lagoons;

1160 - Sea arms and large gulfs with shallow water;

1170 – Reefs;

1180 - Submarine structures created by gas emissions;

8330 - Totally or partially submersed marine caves, with 28 subcategories.

The number of marine habitats of community interest (as defined in the Habitats Directive - 92/43/CEE), at the level of the Bulgarian seaside, includes:

1110 - Sandbanks which are slightly covered by sea water all the time;

1140 - Mudflats and sandflats not covered by seawater at low tide;

1150 - Coastal lagoons;

1160 - Large shallow inlets and bays;

1170 – Reefs;

1210 - Annual vegetation of drift lines;

1240 - Vegetated sea cliffs of the Mediterranean coasts with endemic Limonium spp.;

1310 - Salicornia and other annuals colonizing mud and sand;

2110 - Embryonic shifting dunes;

8330 - Submerged or partly submerged sea caves.

In accordance with the provisions of *EGO no. 57/2007 regarding the status of the protected natural areas, conservation of natural habitats, of the wild flora and fauna approved through Law 49/2011,* as well as of the Birds Directive (79/409/CEE) and Habitats Directive (92/43/CEE), in the Romanian marine area the following natural protected areas are established:

- *ROSPA0076 Black Sea*: site of community importance, in accordance with the requirements of the Birds Directive 79/409/EEC, assigned directly as special protected area - SPA through GD no. 1284/2007 regarding the establishment of avifaunistic protection areas as an integrant part of the European ecological network Natura 2000 in Romania - 147 242,9 ha (Conservator - SC EURO LEVEL)
- *ROSCI0269 - Vama Veche - 2 Mai*: site of community importance, in accordance with the requirements of the Habitats Directive 92/43/EEC, adopted through Decision 2009/92/CE, which is superposed on the Marine Reservation 2 Mai-Vama Veche, protected natural area of national importance – 5,272 ha (Conservator - INCDM);
- *ROSCI0094 – Mangalia sulphurous underwater springs from*: site of community importance, in accordance with the requirements of the Habitats Directive 92/43/EEC, adopted through Decision 2009/92/CE - 362 ha (Conservator INCD GEOECOMAR);
- *ROSCI0197 – Eforie Nord - Eforie Sud Submerse beach*: site of community importance, in accordance with the requirements of the Habitats Directive 92/43/EEC, adopted through Decision 2009/92/CE - 141 ha (Conservator SC EURO LEVEL);
- *ROSCI0273 - Cape Tuzla marine area*: site of community importance, in accordance with the requirements of the Habitats Directive 92/43/EEC, adopted through Decision 2009/92/CE – 1,738 ha (Conservator INCD GEOECOMAR);
- *ROSCI0237 - Sfantu Gheorghe methanogen submerged structures*: site of community importance, in accordance with the requirements of the Habitats Directive

92/43/EEC, adopted through Decision 2009/92/CE - 6.122 ha (Conservator INCD GEOECOMAR);

- *ROSCI0066 - The Danube Delta Biosphere Reservation – marine part*: site of community importance, in accordance with the requirements of the Habitats Directive 92/43/EEC, adopted through Decision 2009/92/CE, which is superposed on the marine area of The Danube Delta Biosphere Reservation- natural protected area of national and international importance – 121,697 ha (Conservator ARBDD).

In 2012, research was conducted that focused on the identification and classification of marine habitats in the two new marine sites designated by the Romanian seaside, namely

- ROSCI0281 Cape Aurora and
- ROSCI0293 Costineşti - 23 August.

In accordance with the provisions of the Habitats Directive (92/43/CEE), the following protected sites are designated in the Bulgarian coastal-marine area:

- BG0000573 Complex Kaliakra
- BG0000621 Shabla – Ezeretz Lake
- BG0000154 Durankulak Lake
- BG0000118 Zlatni Pyasatzi
- BG0000102 Batova River Valley

3.2.6.2 Designated Areas

Romania

The following **protected sites** ("Natura 2000" sites) are entirely or partially located within the Romanian territory:

- ROSPA0001 Aliman - Adamclisi, ROSPA0002 Alah Bair-Capidava, ROSPA0007 Balta Vederoasa, ROSPA0008 Băneasa - Canaraua Fetei, ROSPA0010 Bistreț, ROSPA0011 Blahnița, ROSCI0011 Brațtea Catârilor, ROSPA0012 Brațul Borcea, ROSCI0012 Brațul Măcin, ROSPA0013 Calafat - Ciuperceni - Dunăre, ROSCI0022 Canaralele Dunării, ROSPA0017 Canaralele de la Hârșova, ROSPA0019 Cheile Dobrogei, ROSCI0039 Ciuperceni-Desa, ROSCI0045 Coridorul Jiului, ROSPA0022 Comana (SPA), ROSCI0043 Comana (SCI), ROSPA0023 Confluența Jiu-Dunăre (sit SPA), ROSPA0024 Confluența Olt-Dunăre (SPA), ROSPA0035 Domogled-Valea Cernei (SPA), ROSCI0044 Corabia – Turnu Măgurele, ROSCI0053 Dealul Alah Bair, ROSPA0039 Dunăre-Ostroave, ROSPA0040 Dunărea Veche – Brațul Măcin, ROSCI0069 Domogled-Valea Cernei (SCI), ROSCI0073 Dunele marine de la Agigea, ROSPA0036 Dumbrăveni, ROSCI0071 Dumbrăveni – Valea Urluia – Lacul Vederoasa, ROSCI0083 Fântânița Murfatlar, ROSPA0046 Gruia - Gârla Mare, ROSCI0088 Gura Vedei – Șaica – Slobozia, ROSPA0051 Iezerul Călărași, ROSCI0094 Izvoarele sulfuroase submarine de la Mangalia, ROSPA0053 Lacul Bugeac, ROSPA0054 Lacul Dunăreni, ROSPA0055 Lacul Gălățui, ROSPA0056 Lacul Oltina, ROSPA0057 Lacul Siutghiol, ROSPA0061 Lacul Techirghiol, ROSPA0060 Lacurile Tașaul - Corbu, ROSPA0066 Limanu - Herghelia, ROSCI0106 Lunca Mijlocie a Argeșului, ROSPA0074 Maglavit, ROSPA0076 Marea Neagră, ROSCI0114 Mlaștina Hergheliei – Obanul Mare și Peștera Movilei, ROSPA0080 Munții Almăjului – Locvei, ROSPA0090 Ostrovu Lung - Gostinu, ROSPA0090 Ostrovu Lung - Gostinu, ROSCI0140 Pădurea Călugărească, ROSCI0149 Pădurea Esechioi – Lacul Bugeac, ROSPA0094 Pădurea Hagieni, ROSCI0157 Pădurea Hagieni – Cotul Văii, ROSCI0166 Pădurea Rețca Hotărani, ROSCI0168 Pădurea Sarului, ROSCI0173 Pădurea Stârmina, ROSCI0174 Pădurea Studinița, ROSCI0172

Pădurea și Valea Canaraua Fetii – Iortmac, ROSCI0177 Pădurea Topana, ROSCI0183 Pădurea Vlădila, ROSCI0191 Peștera Limanu, ROSCI0197 Plaja submersă Eforie Nord – Eforie Sud, ROSCI0198 Platoul Mehedinți, ROSCI0206 Porțile de Fier, ROSCI0215 Recifii Jurasici Cheia, ROSCI0225 Seaca - Optășani, ROSCI0202 Silovestepa Olteniei, ROSPA100 Stepa Casimcea, ROSPA0101 Stepa Saraiu - Horea, ROSCI0237 Structuri marine metanogene - Sf. Gheorghe, ROSPA0102 Suhaia (sit SPA), ROSPA0105 Valea Mostiștea (sit SPA), ROSCI0266 Valea Oltețului, ROSPA0106 Valea Oltului Inferior (SPA), ROSCI0269 Vama Veche - 2 Mai, ROSPA0108 Vedea – Dunăre, ROSPA0148 Vitănești - Răsmirești, ROSCI0273 Zona marină de la Capul Tuzla

Bulgaria

The following **protected sites** ("Natura 2000" sites) under the *Biological Diversity Act (BDA)* are entirely or partially located within the Bulgarian territory:

- BG0000102 "Dolinata na reka Batova", BG0000106 "Harsovska reka", BG0000107 "Suha reka", BG0000118 "Zlatni pyasatsi", BG0000130 "Kraymorska Dobrudzha", BG0000154 "Ezero Durankulak", BG0000166 "Vrachanski Balkan", BG0000168 "Ludogorie", BG0000169 " Ludogorie - Srebarna", BG0000171 " Ludogorie - Boblata", BG0000180 " Boblata ", BG0000181 "Reka Vit", BG0000182 "Orsoya", BG0000199 "Tsibar", BG0000211 "Tvardishka planina", BG0000213 "Tarnovski visochini", BG0000216 "Emen", BG0000231 "Belenska gora", BG0000232 "Batin", BG0000233 "Studena reka", BG0000239 "Obnova – Karaman dol", BG0000240 "Studenets", BG0000241 "Srebarna", BG0000247 "Nikopolsko platao", BG0000275 "Yazovir Stamboliyski", BG0000279 "Stara reka", BG0000280 "Zlatishka reka", BG0000281 "Reka Belitsa", BG0000282 "Dryanovska reka", BG0000334 "Ostrov", BG0000335 "Karaboaz", BG0000336 "Zlatiya", BG0000339 "Rabrovo", BG0000340 "Tsar Petrovo", BG0000374 "Bebresh", BG0000377 "Kalimok - Brashlen", BG0000396 "Persina", BG0000399 "Balgarka", BG0000432 "Golyama reka", BG0000487 "Bozhite mostove", BG0000497 "Archar", BG0000498 "Vidbol", BG0000500 "Voynitsa", BG0000503 "Reka Lom", BG0000507 "Deleyna", BG0000508 "Reka Skat", BG0000509 "Tsibriysa", BG0000516 "Chernata mogila", BG0000517 "Portitovtsi - Vladimirovo", BG0000518 "Vartopski dol", BG0000519 "Mominbrodsko blato", BG0000521 "Makresh", BG0000522 "Vidinski park", BG0000523 "Shishentsi", BG0000524 "Orizishteto", BG0000525 "Timok", BG0000526 "Dolno Linevo", BG0000527 "Kozloduy", BG0000528 "Ostrovska step - Vadin", BG0000529 "Marten - Ryahovo", BG0000530 "Pozharevo - Garvan", BG0000532 "Ostrov Bliznatsi", BG0000533 "Ostrov Kozloduy", BG0000534 "Ostrov Chayka", BG0000552 "Ostrov Kutovo", BG0000569 "Kardam", BG0000570 "Izvorovo - Kraishte", BG0000572 "Rositsa - Loznitsa", BG0000573 "Kompleks Kaliakra", BG0000576 "Svishtovska gora", BG0000587 "Varkan", BG0000591 "Sedlarkata", BG0000593 "Bilernitsite", BG0000594 "Bozhiya most - Ponora", BG0000601 "Kalenska peshtera", BG0000605 "Bozhkova dupka", BG0000608 "Lomovete", BG0000609 "Reka Rositsa", BG0000610 "Reka Yantra", BG0000611 "Yazovir Gorni Dabnik", BG0000613 "Reka Iskar", BG0000614 "Reka Ogosta", BG0000621 "Ezero Shabla - Ezerets", BG0000627 "Konunski dol", BG0000631 "Novo selo", BG0001014 "Karlukovo", BG0001037 "Pastrina", BG0001040 "Zapadna Stra planina I Predbalkan", BG0001042 "Iskarski prolom - Rzhana", BG0001493 "Tsentralen Balkan - bufer", BG0002018 "Ostrov Vardim" **for conservation of natural habitats and of wild fauna and fauna included in the lists of protected areas adopted by Decisions of the Council of Ministers**; and
- BG0000156 "Shablenski ezeren kompleks", BG0000237 "Ostrov Pozharevo", BG0000240 "Studenets", BG0000241 "Srebarna", BG0000332 "Karlukovski karst", BG0000399 "Balgarka", BG0002002 "Zapaden Balkan", BG0002005 "Ponor", BG0002006 "Ribarnitsi Orsoya", BG0002007 "Ostrov Ibisha", BG0002008 "Ostrov do Gorni Tsibar", BG0002009 "Zlatiyata", BG0002017 "Kompleks Belenski ostrovi",

BG0002018 "Ostrov Vardim", BG0002024 "Ribarnitsi Mechka", BG0002025 "Lomovete", BG0002029 "Kotlenska planina", BG0002030 "Kompleks Kalimok", BG0002031 "Steneta", BG0002039 "Harsovska reka", BG0002048 "Suha reka", BG0002050 "Durankulasho ezero", BG0002051 "Kaliakra", BG0002053 "Vrachanski Balkan", BG0002061 "Balchik", BG0002062 "Ludogorie", BG0002064 "Garvansko blato", BG0002065 "Blato Malak Preslavets", BG0002067 "Ostrov Golya", BG0002070 "Ribarnitsi Hadzhi Dimitrovo", BG0002074 "Nikopolsko plato", BG0002082 "Batova", BG0002083 "Svishtovsko-Belenska nizina", BG0002085 "Chairya", BG0002090 "Berkovitsa", BG0002091 "Ostrov Lakat", BG0002095 "Gorni Dabnik - Telish", BG0002096 "Obnova", BG0002097 "Belite skali", BG0002104 "Tsibarsko blato" и BG0002115 "Bilo" **for the conservation of wild birds designated by orders Minister of Environment and Water**.

Within the scope of the program on Bulgarian territory are the following **protected areas** under the *Protected Areas Act (PAA)*:

- *Nature Parks*: Persina, Vrachanski Balkan, Rusenski Lom;
- *Reserves*: Byala krava, Chuprene, Vrachanski Karst, Kaliakra, Gornata koria, Kitka, Milka, Beli Lom;
- *Maintained reserves*: Savchov chair, Haydushki chukar, Baltata, Ibisha, Persinski blata, Srebarna;
- *Monuments of nature:* Momin skok, Kapinovski vodopad, Vodopada na r. Miykovska, Kaya bunar, Kanyonat na r. Negovanska – Emenski kayon, Ponorite, Dryankov halm, Musina - peshtera, Levi I desni suhu pech, Peshtera Venetsa, Vodopad na r. Stakevska, Magurata, Borov kamak, Belogradchishki skali, Petrov tserak, Gardata, Vratsata, Ledenika, Bozhite mostove, Ponora, Novata peshtera, Ritlite, Govedarnika, Chuklite, Galabarnika, Samuilitsa I and II, Chervenitsa, Arboretuma, Aleksandriyska gora, Mishin kamak, Mramorna peshera, Hayduski vodopadi, Durshin vodopad, Vodniya skok, Fosilno nahodishte na Badenskata fauna, Peshterata "Razbititsa", Karstovo zhdrelo "Chernelka", Nahodishte na tertsierni (tortonski) vkamenelosti, Opanski bair, Nahodishte na okremeneni stable I panova ot vekovna iglolistna gora ot sem. Taksodievi v m. "Tashkovoto", Nahodishte na okremeneni stable I panova ot vekovna iglolistna gora ot sem. Taksodievi v m."Kaleto", Gininata peshtera, Studenets, Kamarata, Haydushkata peshtera, Skalen most "Sedlarkata", Kaleto – tektonski graben, Kuklite, Vodopad "Skoka" na r. Belilkata, Kupenite, Skalnite kukli v m. "Pladnishteto", Skalnata tsarkva, Peshtera "Nanin kamak", Peshterata "Orlova chuka", Dekilitash, Mamula, Ostrata skala, Ostrata kanara, Skalno obrazuvanie "Peshterata", Skalno obrazuvanie "Vratata";
- *Protected localities:* Markov buk, Glavite, Belokravishtnitsa, Nahodishte na Balgarska garlitsa, Reka Veselina, Kaykusha, Stariyat dab, Studen kladenets, Meshovata gora, Slona, Preobrazhenski manastir, Bozhurluka, Bozhur polyana, Bogdanov dol,Dzholyungyol, Nikolinski kladenets, Manastirskoto, Derventa, Kosovo, Komitkite dupki, Zhelezartsi, Rusalka, Lesoparka, Nahodishte na balgarski sarpets, Ostrov Kutovo, Chuprenski buki, Nahodishte na Ruzhevidna povetitsa, Ostrovi "Bliznatsite", Midzhur, Rakovishki manastir, Lipaka, Brashka chuka, Padinite, Rechka, Tepeto, Borovanska mogila, Kitkata, Koritata, Daneva mogila, Kozloduy, Kochumina, Go;a bara, Kalugerski gled - Topolite, Vola, Vezhdata, Stepite, Blatno kokiche, Aromatna matiola, Rositsa, Loznitsa, Bezhanovo, Orlova mogila, Yaylata, Durankulashko ezero, Shablensko ezero, Suha reka, Ostrov Tsibar, Samarite, Shabovitsa, Gluharchevidna zhaltitsa, Usketo, "Kopren, Ravno buche, Kalimanitsa, Dayanitsa", Sto ovtsi, Kaleto, Shumaka, Ribarnitsi Orsoya, Uruchnik, Ravnensko gradishte, Persin, Koridorite, Ostrov "Malak Boril", Kaylaka, Bulin dol, Dalgata bara - pametnika, Ornitsite, Garvanitsa, Peshterite, Gushterat, Palaza, Turiyata, Brestishko branishte, Cheshmata, Lagat "Dramkata", Vyatarnitsa, Cholashki orman,

Pozhara, Valchitranskata gora, Ormana, Marinovets, Shtarka, Goliyat vrah, Drenovitsa, Pipra - Kaleto, Persin iztok, Kiselets, Cherveniyat bryag, Katinata, Gendzhov orman, Eliyata, Taraklaka, Plavala, Ribarnitsite, Lomiya, Nahodishte na obiknoven sladnik, Vekovna tserova gora, Kompleks "Aleko Telika", Kalimok - Brashlen, Estestveno nahodishte na Krimska kakula, Nahodishte na Balgarska Garlitsa – selo Karamanovo, Doychov ostrov, Nahodishte na Uehtritsova uroka, Pelikanite, Karakuz, Garvanski blata, Malak Kanagyol, Golyamata cheshma, Ostrov Pozharevo, Saya Kulak, Blatoto kray s. Malak Preslavets, Pametnika, Medzhit tabiya.

3.2.7 Cultural Heritage

Romania

In Romania, the List of Historical Monuments, including archeological sites, is maintained and updated by the Ministry of Culture and has official and legal character. According to the latest update approved by the Ministerial Order no. 2.361/2010, in the Romanian Territory which is part of the programme, are located 3929 Historical Monuments, distributed by counties, as shown in the table bellow.

Table 3-9: Number of Hiistorical Monuments located in the Romanian Side

Number of Historical Monuments located in the Romanian Side of the Cross-border Region	
County	**Number**
Constanța	684
Călărași	284
Giurgiu	542
Teleorman	393
Dolj	699
Mehedinți	569
Olt	758
TOTAL	**3929**

In each of the seven Romanian counties covered by the programme, there are objectives belonging to the cultural heritage, including archaeological sites, which shall be described in detail, as appropriate, once the locations of actions proposed by the programme would be known.

Within **Mehedinti County**, the best known historical monuments, as well as other cultural heritage objects and tourist attractions include:

- The vestiges of Trajan's Bridge (a bridge built during the inter-war period of the Dacian wars led by Emperor Trajanus against Decebalus);
- The Drobeta Castrum (built at the same time as Trajan's Bridge);
- The ruins of the mediaeval church near the Roman castrum;
- Sfânta Ana Monastery;
- the citadel on former Ada-Kaleh Island, now under the waters of the reservoir, relocated on Ostrovul Simian;
- Sfinții Voievozi Church, erected in he Byzantine style and painted in the17th c.;
- the citadel of Strehaia Monastery, built around 1500;
- Gura Motrului Monastery.

The best known heritage objects in **Dolj** County include:

- The wooden church Toti Sfintii in Talpasesti;
- Memorial House of Elena Farago;
- Jitianu Monastery in Podari;
- Bucovat Monastery in Craiova;
- Maglavit Monastery in Maglavit.

Olt County retains the traces and vestiges of an amazing culture Archaeological digs revealed the presence of human settlements throughout history, certifying continuity of civilisation in this area. The vestiges belong to the **Stone Culture**, **Cris Culture**, **Vadastra** and **Salcuta**. The following cultural heritage objects are also well known:

- The fortified Geto-Dacian settlement at Sprancenata.
- **The walls** of the Byzantine citadel at **Celei - Corabia** with the **Secret Fountain**, a unique monument of Byzantine Roman architecture.
- **The Church of Caluiu Monastery**, with original frescoes depicting Michael the Brave's wife and the Buzesti Brothers.
- **Brancoveni Monastery.**
- The mediaeval **Watchtower** at Hotareni.
- **The Fortress** at Campul Mare.
- **Memorial House** of outlaw **Iancu Jianu**, in Caracal.
- **Nicolae Titulescu Memorial Centre** in the village of the same name.
- **Clocociov Monastery**, built on a settlement belonging to Michael the Brave.
- **Trinity Church** in Corabia, an imposing religious architectural monument.
- **Wooden Church** at Parosi-Leleasca.
- **The church in Stoicanesti**, painted by Gheorghe Tatarescu, etc.

The best known heritage objects in **Calarasi** County include:

- **Lower Danube Museum** opened in 1951, with two departments: The Archaeology Service and the Art, Ethnography and Restoration-Preservation Department. The building is a remarkable architectural monument, specific to the 19h c.
- The church of former **Negoesti Monastery** is a unique historical and religious architecture monument. Established in 1648 - 1649 by ruler Matei Basarab, it was rebuilt in 1777 and restored in 1850.
- The church of former **Plataresti Monastery** was also erected in the times of Matei Basarab, but is remarkable in its architecture and interior wall painting.

Heritage objects in **Giurgiu** County include:

- in the municipality of Giurgiu: the ruins of the old mediaeval ciitadel, the **History museum**, the **Clock Tower**, monuments dedicated to the heroes of the Independence War and to the French soldiers killed in **Giurgiu** during WWI, the Cathedral Adormirea Maicii Domnului, **Inaltarea Domnului Churh** and **Buna Vestire Church** still preserving the original interior painting by Gheorghe Tatarascu,
- the monument at **Calugareni**,
- ancient Argedava (a Dacian-Getic tribal union, the place where Burebista emerged) etc.

Among the heritage objects in **Teleorman**, County, the following are worth mentioning:

- The Roman citadel of Turris;
- The mediaeval citadel Turnu;
- The ruins of the Monastery at Plaviceni din Plopii Slavitesti;
- The ruins of the Balaceanu Court at Tatarastii de Sus;
- The memorial house of Zaharia Stancu;
- Royal cathedral Sf. Alexandru in Alexandria.

Constanta County contains many heritage objects, such as:

- The Roman altar at Adamclisi;
- The amphitheatre;

- The cave dwelling complex at Murfatlar;
- Gallery-aqueducts.

The county cultural heritage also includes many worshipping sites of different religions.

One of the most famous area, is represented by the *archaeological site of Histria*.

Histria, Greek colony on the Dobrogea coast of the Black Sea (today on the Sinoe Lake bank), was founded by the middle of the 7th century BC, by colonists from Miletus (according to the data conveyed by Eusebius, a possible founding date could be the years 657/656 BC, and according to the tradition mentioned by Ps. Skymnos, the year 630 BC could represent the date of the foundation of the settlement) and existed for 14 centuries, until the 7th century AD. It is the oldest Greek colony on the west coast of the Black Sea, and one of the first founded in the basin of this sea. It is also the oldest town attested on the territory of present day Romania.

Bulgaria

According tot he Register of National Cultural Valuables (NCV) to the National Institute for Immovable Cultural Heritage, the total number of all types of NCV is over 40000, among which 13500 are archaeological.

The archaeological NCVs are relatively evenly distributed throughout the country and are largely outside the settlements.

A total of 1730 NCV are registered in the North East Region of Bulgaria, among which 834 in the area of Dobrich. As regards the North West Region, a total of 1467 NCV are registered, among which in the area of Vidin – 138, Montana – 128, Vratsa – 91, Pleven – 469. There are 2557 NCV registered in the North Central Region of Bulgaria, among which in the area of Veliko Turnovo – 928, Ruse – 552, Silistra – 436.

One of the most prominent cultural site in the region are the Rock-hewn Churches of Ivanovo, included in the UNESCO World Heritage List. These are a group of monolithic churches, chapelsand monasteries hewn out of solid rock and completely different from other monastery complexes in Bulgaria, located near the village of Ivanovo, 20 km south of Rousse, on the high rocky banks of the Rusenski Lom, 32 m above the river. The complex is noted for its beautiful and well-preserved medieval frescoes.

There are 56 culture monuments on the territory of **Vidin** Region (archeological objects of antiquity and middle age, churches and musk from XV-XIX century as well as buildings from 1880-1925). Among the most prominent cultural sites in the region is the ancient fortress of Baba Vida, which was built on the ruins of an older ancient fortress – Bononia. At first the mediaeval fortress was rather small in size, with the parameters of a watch-tower. Its reconstruction into a bigger mediaeval castle had happened during the first rulers of the Vidin principality and its larger expansion – during tsar Ivan-Sratsimir, with who is related the building of the main tower of the fortress. After decades of research and restoration, today the “Baba Vida” fortress is an original outdoor museum with internal expositions revealing the life customs of the mediaeval Bulgarian fortresses and important periods of the history of mediaeval Bulgaria. Other cultural and historical sites in the region of Vidin include the Koluka History Museum, The musk and the Pazvantoglu’s library, The Synagogue, St. Dimitar Cathedral, and other.[18]

Vratsa region features a lot of archeological and historic monuments. Of particular value are treasures masterpieces of Thracian art. Vratza treasure of the 4th century BC was discovered on the Mogilan hill inVratza. Near the village of Rogozen in 1986 a treasure dated back to the 4th-5th centuries BC was uncovered, which belonged to a Thracian notable family – the biggest treasure ever found. In includes 165 items made of massive

[18] Source: http://en.vidin.government.bg/094/60-16-16/sidebar/oblast_vidin/zabelejitelnosti.html

silver with gilt. On the Borovan hill there are remains of an ancient Thracian fortress. The monasteries offer unique environment of peace and serenity – the Cherepish Monastery, Strupesh Monastery, the Monastery of Archangel Michael near the village of Dolna Beshovitsa, etc. [19]

Within the region of **Monana** is located the Roman Fortress "Kaleto", which is archeological site, supplemented by national monuments like the house Museum "Ivan Vazov", the Clock Tower since 1762, the unique Churches "Nativity of the Virgin" since 1843 and "St. Nicholas the Miracle Worker" since 1871, the Art Gallery and the Ethnographic Museum defined Berkovitsa as a city with rich history and culture.[20]

Pleven region, perceived as an area of traditional villages and maintained interlinks existed since antiquity and combines historical traces of four major eras, including the great Roman military camp, later transformed into a remarkable city Ulpia Oescus. Ancient fortresses Storgozia / part of Kailuka park, Pleven / and Dimum near the town of Belene also join antiquity sites. The area has a unique example of history and art cohesion - history as a source of inspiration and art as a means of presenting and telling a story - presented by the Pleven panorama.[21]

Veliko Tarnovo region has existed since antiquity and combines historical traces of four distinct eras. Prominent are the ancient city of Nicopolis ad Istrum and the major military bivouac Nove. The impressive medieval heritage of Tarnovo is deployed on the hills of Tzarevetz and Trapezitza. Distinctive fort he area is the variety of monasteries and churches belonging to different epoch and raised under different circumstances - to praise the temples of antiquity, to promote Christianity; to note the Middle Ages.[22]

Famous archaeological sites in **Ruse** region are the Sexaginta Prista Castle, the rock monastery in Basarbovo, the Rock monastery near the village of Ivanovo, the Medieval Town of Cherven Archeological Reserve, the Thracian tomb of Borovo. Undoubtedly the most significant part of the cultural heritage of the municipality Borovo is the Borovsko treasure from the middle of IV century BC, discovered in 1974. Ancient fortress "Sivri kanara" is discovered within the boundaries of Senovo. In the vicinity of Krivnya is fortress "Singrad." In Ruse region are also located the fortress "Kale", Paleolithic deposit "Black cave", etc.[23]

The wealth of archaeological sites and discoveries in **Silistra** region evidence for cultural layering from prehistory to modern history. Almost two thirds of the territory of the town of Silistra (1720 acres) is a national architectural and archaeological reserve "Durostorum – Drastar - Silistra". Emblematic are the Roman and medieval ancient sites. Excavations and research carried out so far have confirmed the richness and complexity of the ancient cultures of this area, including: Thracian cult center along Taban River ; Late Antique Roman tomb in Silistra ("Silistra tomb" - the only one on the Balkan Peninsula dating from the first half of the IV century) ; the palace of Dorostolski bishops dating from V- VI century and many other.[24]

Historical monuments in **Dobrich** categorized as having "national significance" are concentrated in Balchik (ancient fortress and ancient necropolis in the city, late ancient

[19] Source: http://www.guide-bulgaria.com/NW/vratsa

[20] Source: http://oblastmontana.org/en/index.php?do=cat&category=oblast

[21] Source: http://www.pleven-oblast.bg/subsection-500-oblastna_strategiya_za.html

[22] Source: http://www.vt.government.bg/documents/OSR_Veliko_Tarnovo_27.05.13.pdf

[23] Source: http://www.ruse.bg/zone/admin/uploads/files/OSR%2018_07_2013%20part1_1.pdf

[24] Source: http://www.strategy.bg/FileHandler.ashx?fileId=3696%E2%80%8E

and medieval fortress in the Horizon quarter, architectural and park complex "The Palace"), Kavarna (ancient and medieval fort in the area of Kaliakra, archaeological reserve "Yailata"), etc.[25]

3.2.8 Material Assets

Tangible assets are a component of the anthropogenic environment. In the framework of the Programme it is assumed that most relevant will be the assets pertaining to transport infrastructure, cultural infrastructure, social infrastructure, and infrastructure for coping with flood and landslide.

Transport Infrastructure

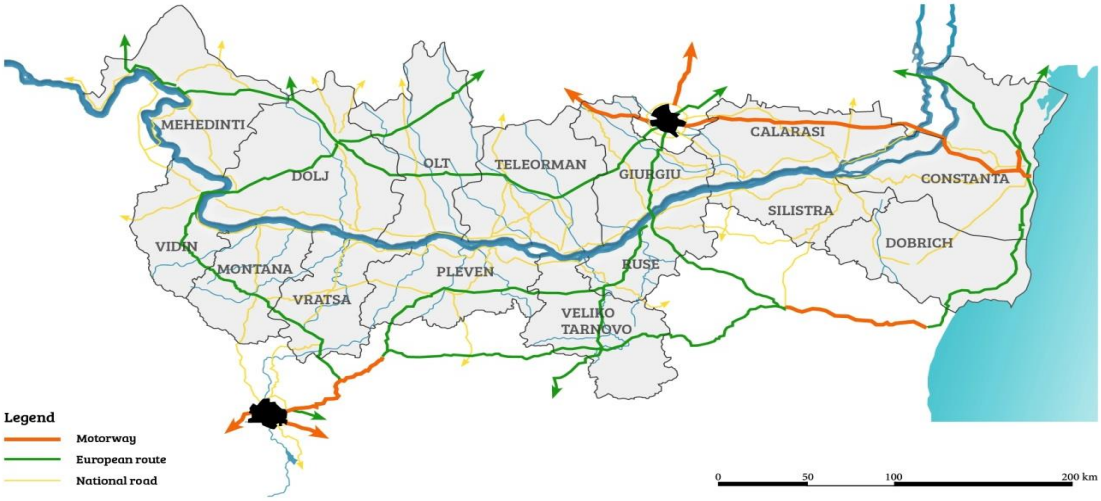
Roads

According to the "Teritorial Analysis", the total length of the roads in the cross-border area is 16,511 km, including district and communal roads. The total density of public roads is 22.95 km/100km^2, which is very low, compared to the EU average of 110km/100 km^2. The density of roads along the Danube is to a great extent under the national average.

The cross-border region only contains one motorway between Bucharest and Constanţa (220 km). The construction of the Bucharest-Constanţa motorway has led to an increase in the traffic flow towards the Black Sea on the Romanian side of the border.

Secondary and tertiary road networks are under-developed and poorly maintained throughout the area, and have a high risk of accidents. Moreover, some roads are exposed to flooding, especially on the Romanian side of the Danube. Lots of roads have insufficient capacity, leading to traffic jams and, as a consequence, to increased travelling times, vehicle operating costs, accidents and damage to the environment.

Figure 3-13: Hierarchy of the road network



Sorce: Territorial Analysis

[25] Source: http://dobrich.government.bg/files/news/OSR_Dob_format____I_II_fin1.pdf

Table 3-10: Length of public roads (km)

	2007	2008	2009	2010		2007	2008	2009	2010
Romania	80 893	81 693	81 713	82 386	**Bulgaria**	19 425	19 435	19 435	19 456
Constanța	2 325	2 325	2 325	2 327	Vidin	611	611	611	611
Călărași	1 348	1 317	1 318	1 324	Vratsa	634	634	634	637
Giurgiu	1 139	1 139	1 143	1 156	Montana	602	602	602	603
Teleorman	1 525	1 525	1 525	1 525	Pleven	791	791	791	791
Olt	2 176	2 176	2 176	2 176	Veliko Târnovo	937	937	937	937
Dolj	2 211	2 242	2 268	2 406	Dobrich	826	826	826	826
Mehedinți	1 861	1 857	1 857	1 858	Ruse	512	512	512	512
					Silistra	506	506	506	506

The public road network is more concentrated in Romania compared to Bulgaria.

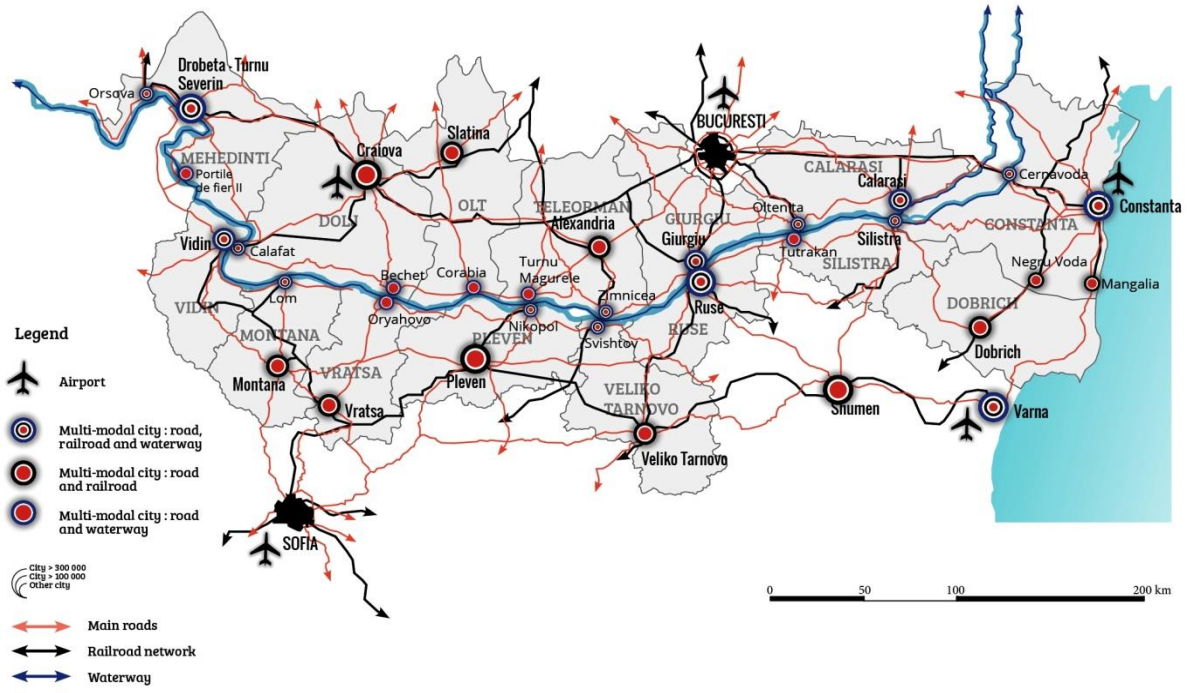
Most of the road network has a durable road surface but it is worn out and the available protective equipment does not correspond to the contemporary requirements. In certain sections, the bad condition of the roads creates serious difficulties for the winter maintenance of the road network which often leads to isolation of settlements.

Railways

The density of operating railways is approximately 46.1 km per 1000 km^2 in Romania and of 38.9 km per 1000 km^2 in Bulgaria, being under the average of EU countries (65 km/ 1000 km^2). The main railroad connection between Romania and Bulgaria crosses the Danube via the Giurgiu-Ruse Bridge but is currently closed and a second railway between Negru-Voda and Kardam records a low traffic (only freight trains and Regio trains).

The 280 km railway section Sofia-Vidin is electrified, but two thirds of it is built with simple tracks, and the allowed speed is below 100 km/h. A feasibility study on the improvement of this section, with ISPA financial aid, is currently undergoing. Upgrading works for the Calafat-Craiova railway (108 km) are also necessary.

Figure 3-14: The road and railroad network, ports and waterways by multimodal nodes



Source: Détente Consultants

The length of the railway network in Bulgaria for the cross-border region shows no changes in the period 2010-2012. It constitutes 25.8% of the Bulgarian railway network. ERDF funds are used to upgrade the existing railway network, and increasing speed limits.

Border crossing infrastructure

At the moment there are two existing bridges for road transport across the Danube between Romania and Bulgaria (Calafat-Vidin, Giurgiu- Ruse).

The table below shows the different border crossing modalities along the Romanian-Bulgarian border.

Table 3-11: Border crossing infrastructure

Romania border point	Bulgaria border point	Border crossing way	Intentions
Calafat	Vidin	Water transport Road transport (bridge) Rail transport	
Bechet	Oryahovo	Water transport Road transport (ferry)	There is an intention to build an overpass across the Danube
Corabia	Magura	Water transport	
Somovit	Nicopol	Water transport	
Zimnicea	Svishtov	Water transport (ferry)	
Giurgiu	Ruse	Road and rail transport (bridge) Port and ferry	There is an intention to build a new bridge (road and rail) There is an intention for construction of an intermodal terminal to facilitate cargo flows.
Oltenița	Tutrakan	Water transport (ferry)	
Călărași	Silistra	Water transport (ferry)	There is an intention to build an overpass across the Danube
Ostrov	Silistra	Road transport (road)	
Negru Voda	Kardam	Road transport (road) and rail transport	
Vama Veche	Durankulak	Road transport (road)	

According to data in the Bulgarian National Report for the Status of Environment for 2012, almost 100% of freight is carried by road transport. The structure of the freight transport changes as the share of road transport increased from 51.9% in 2000 to 85.0% in 2012, on account of the share of rail transport, which decreased from 44.9% to 10.1% in 2012.26 Among the analysed regions in the cross-border area, highest transport network development in 2012 has the region of Veliko Turnovo for the railway lines and all road categories, except for category II roads where Dobrich is at first place. Specific details are provided in Table 3-12 below.

[26] National Statistics Institute data

Table 3-12: Transport network development for 2012

Region / Indicator	Length of motorways (kilometers)			Length of railway lines (km)
	Category I roads (km)	Category II roads (km)	Category III roads (km)	
Vidin	74	91	446	101
Vratsa	59	231	347	112
Montana	52	162	391	115
Pleven	96	205	490	206
Veliko Tarnovo	153	141	643	236
Ruse	110	155	247	155
Silistra	57	147	302	70
Dobrich	83	242	502	60

Source: NSI

Social and health infrastructure

Romania

According to INS information, in the cross-border area on the Romanian territory (7 counties) only 34 nursery schools have been identifies, all state-owned. As for the health infrastructure, private establishments have been found to expand at the expense of state-owned ones.

Table 3-13: Number of medical institutions per counties

Region	SUD-VEST OLTENIA						SUD - MUNTENIA						SUD-EST	
County	Mehedinti		Dolj		Olt		Teleorman		Giurgiu		Calarasi		Constanta	
	state-owned	private	TOTAL	private	state-owned	private	state-owned	private	state-owned	private	state-owned	private	state-owned	private
Hospitals	4		15		6		8	0	3		6*	0*	12	7
Outpatient Clinics	0			21	1		1	0	0		0*	0*	1	1
Medical Surgeries	5		6		5		5		3		4*		6	
Mental Health Centres	2				1									
Nurseries	4		9				8		1		2*		10	
Pharmacies, including chemists	9	99	322	305	119		8	83	6	78	6*	52*	12	280
Family Doctor surgeries		31	427	60	251			34		0		12*		433
General Practices		7		58	5			0		7		20*		259
Specialist surgeries		114		695	90			76		11		46*		331
Dental surgeries		64	402	312	83			33		28		32*		657
Medical Laboratories		9		83	48			14		7		6*		35
Dental Laboratories		11		36	28			31		18		4*		18

Source: NSI

Bulgaria

In all Bulgarian NUTS II regions, the common case is that the social infrastructure is ill-adapted to current situation and emergent needs or is in disrepair.[27] Interventions for promotion of economic, social and cultural integration of the urban areas are envisaged under OP Regional Revelopment. Even though there is no particular data concerning the condition of the material base in the social infrastructure sector, the information about its severe condition is in the public domain. Very few institutions were improved or built anew with the aid of various charity programmes. Table 3-14 provides an overview of social services provided in the cross-border area.

Table 3-14 Social services provided in specialized institutions in 2008

(Number)

Bulgaria	Establish-ments	Places (capacity)	Persons in social establishments as of 31.12		
			Total	Male	Female
Social services, provided in specialized institutions					
Veliko Tarnovo - Total	**18**	**1124**	**1039**	**477**	**562**
of which:					
Homes for the elderly	5	335	317	111	206
Homes for mentally retarded children or youth	3	156	149	79	70
Homes for physically disabled adults	1	50	48	30	18
Homes for mentally retarded adults **	5	322	299	126	173
Homes for children deprived of parental care	4	261	226	131	95
Vidin - Total	**14**	**807**	**661**	**416**	**245**
of which:					
Homes for the elderly	4	123	97	45	52
Homes for mentally retarded children or youth	2	132	105	58	47
Homes for physically disabled adults	1	50	50	34	16
Homes for mentally retarded adults **	4	322	318	228	90
Homes for children deprived of parental care	3	180	91	51	40
Vratsa - Total	**14**	**920**	**810**	**352**	**458**
of which:					
Homes for the elderly	4	231	221	74	147
Homes for mentally retarded children or youth	3	137	135	71	64
Homes for physically disabled adults	1	90	80	34	46
Homes for mentally retarded adults **	1	80	69	-	69
Homes for children deprived of parental care	5	382	305	173	132
Dobrich - Total	**8**	**579**	**548**	**212**	**336**

[27] Source: http://www.bgregio.eu/en/op-regional-development/op-regional-development-priorities/priority-axis-1--sustainable-and-integrated-urban-development/social-infrastructure.aspx

of which:					
Homes for the elderly	3	165	178	74	104
Homes for mentally retarded children or youth	1	108	99	49	50
Homes for mentally retarded adults **	2	180	176	42	134
Homes for children deprived of parental care	2	126	95	47	48
Montana - Total	**15**	**967**	**835**	**439**	**396**
of which:					
Homes for the elderly	3	229	211	77	134
Homes for mentally retarded children or youth	1	90	90	72	18
Homes for physically disabled adults	2	100	98	42	56
Homes for mentally retarded adults **	4	210	205	132	73
Homes for persons with sensory disabilities	1	48	47	25	22
Homes for children deprived of parental care	4	290	184	91	93
Pleven - Total	**6**	**344**	**306**	**146**	**160**
of which:					
Homes for the elderly	2	75	71	28	43
Homes for mentally retarded children or youth	1	45	45	20	25
Homes for physically disabled adults	1	45	43	15	28
Homes for children deprived of parental care	2	179	147	83	64
Ruse - Total	**10**	**893**	**778**	**373**	**405**
of which:					
Homes for the elderly	2	269	266	108	158
Homes for mentally retarded children or youth	1	60	30	18	12
Homes for physically disabled adults	1	82	85	40	45
Homes for mentally retarded adults **	1	120	120	45	75
Homes for children deprived of parental care	5	362	277	162	115
Silistra - Total	**7**	**618**	**540**	**302**	**238**
of which:					
Homes for the elderly	3	290	284	135	149
Homes for physically disabled adults	1	130	77	38	39
Homes for mentally retarded adults **	1	70	69	69	-
Homes for children deprived of parental care	2	128	110	60	50

*) Incl. services, done by providers of social services, which are included in the Register of the providers of social services at the Agency for Social Support.
**) Incl. homes for adults with demencia, homes for adults with mental disorders and homes for mentally retarded adults.

Source: NSI

Medical service establishments for hospital aid are of largest number in Vratsa region, followed by Veliko Turnovo and Pleven. The lowest number of health establishments for hoispital aid in the analyzed area have Vidin (2) and Silistra (3). Outpatient health establishments are of largest number in Ruse and Veliko Turnovo.

More details for the cross-border area are presented in the next tables.

Table 3-15: Health establishments as of 31.12.2012

Statistical regions and districts	Health establishments for hospital aid			Outpatient health establishments						Other health establishments
	Total	Multi profile hospitals	Specialized hospitals	Total	Diagnostic and consulting centres	Medical centres	Medical diagnostic & medical-techical laboratories	Dental centres	Medical-dental centres	
Bulgaria	**339**	**168**	**144**	**1804**	**121**	**575**	**1 026**	**49**	**33**	**141**
Vidin	**2**	2	-	**29**	2	8	15	2	2	**4**
Vratsa	**13**	6	4	**40**	1	18	20	-	1	**3**
Montana	**5**	3	2	**27**	1	9	16	1	-	**5**
Pleven	**11**	9	2	**50**	8	20	20	1	1	**7**
Veliko Tarnovo	**12**	4	5	**63**	3	24	35	1	-	**6**
Ruse	**9**	2	5	**63**	3	11	47	2	-	**3**
Silistra	**3**	3	-	**30**	1	3	26	-	-	**3**
Dobrich	**7**	4	2	**32**	2	11	19	-	-	**4**

Source: NSI

Table 3-16 Nursery and Higher Education Schools in 2013

Spatial Scope	Creches (number)	Kinder-gartens (number)	Primary & Secondary Schools (number)	Higher Schools (number)	Colleges (number)
Bulgaria	754	2051	2097	45	8
Vidin	14	39	31	-	-
Vratsa	34	50	61	-	-
Montana	18	53	56	-	-
Pleven	44	93	89	1	1
Veliko Tarnovo	22	79	75	3	-
Ruse	21	36	55	1	-
Silistra	8	27	39	-	-
Dobrich	12	105	71	-	1

Source: NSI

Cultural Infrastructure

Romania

The cultural infrastructure which belongs to the cultural hefitage was described in the previous section. Besides, especially in county seats, there are cinema halls, in some of them theatres, opera, operetta, e.g. “Fantasio” musical/review theatre in Constanta.

Bulgaria

In terms of cultural infrastructure, the cross-border region containts 2 UNESCO Cultural Heritage Sites (the Rock-Hewn Churches of Ivanovo and the Tomb of Sveshtary) out of 7 in the country. According to data published in the National Concept for Spatial Development 2013-2025, the whole corridor along the Danube River is of cultural inftastructure importance.

Tangible fixed assets

According to data in the National Report for the Status of Environment (dd 2014) in 2012, for activities to prevent the consequences of landslides, erosion and abrasion processes in the Republic of Bulgaria, framework agreements are concluded for 5 years with state-owned companies Geoprotection Ltd - Varna, Pleven, and Pernik.

The tangible fixed assets with ecological use include:

- facilities, installations and equipment necessary for environmental protection and recovery by use (water resources, air, soil, waste disposal, protection from noise);
- monitoring and control equipment.

The tangible fixed assets with ecological use are a part of the total tangible fixed assets within the country. According to data published by the National Statistics Institute, the tangible fixed assets with ecological designation by the end of 2012 are as follows:

Table 3-17 Tangible fixed assets with ecological use

No	Region	K BGN
1	Vidin	10328
2	Vratsa	421808
3	Montana	39544
4	Pleven	12416
5	Veliko Tarnovo	72470
6	Ruse	113139
7	Silistra	42825
8	Dobrich	44645

Source: NSI

3.2.9 **Waste**Error! Bookmark not defined.

The emblematic initiative "A resource-efficient*Europe*" under the Europe 2020 Strategy aims to support transition to an efficient economy in the use of all the resources, completely separating economic growth from resource and energy consumption and from environmental impact, cut back greenhouse as emissions, increase competitiveness through efficiency and innovation and promote higher energy security. The Roadmap to an energy efficient Europe and the Roadmap for transition to a competitive low carbon economy are key elements of the initiative, setting the framework for the future actions that will help meet these objectives.

Turning waste into a resource, as indicated in the Roadmap for efficient resource use, will require the full implementation of the EU legislation on waste across the Union, based on strict enforcement of the waste hierarchy and targeting different types of waste.

This includes application of the waste hierarchy and the effective use of market-based tools and measures to ensure the phasing out of landfills, limit energy recovery to non-recyclable materials, the use of recycled waste as major and reliable source of raw materials for the EU, safe management of hazardous waste and limiting generation thereof, eradication of illegal waste transports and removing the domestic market barriers to ecological recycling activities.

Every year, the EU economy uses 16 tonnes of materials per capita, of which 6 tonnes become waste, and half of this goes to disposal. If such waste cannot be avoided, the European Commission urges the respective parties to reuse, recycle and recover the waste type that may become a veluable resource.

In 2012, the European Union published a review-report on waste management performance in the EU Member States. The purpose of this initiative was to outline the differences between EU Member States in point of waste management. The review introduces the Member States with the lowest and the highest gaps, respectively, in the implementation of environmental protection policies.

Both Romania and Bulgaria were ranked in the lowest of the three groups into which the Member States were classified, **i.e. the group of countries with the largest gaps in the implementation of waste management** scoring 3 to 18 points out of the 42 possible.

Romania

Municipal waste

Municipal waste represents the total amount of waste generated in the urban and rural areas from households, institutions, commercial units, economical units (household and assimilated waste), street waste collected from public spaces, streets, parks, green areas, waste from constructions-demolitions collected from waste management operators.

Collection of municipal waste is the responsibility of municipalities, directly (through specialized services within Local Councils) or indirectly (by giving this responsibility on a contract basis to companies specialized in sanitation).

Figure 3-15: Percent composition of domestic and biodegradable waste collected in 2011

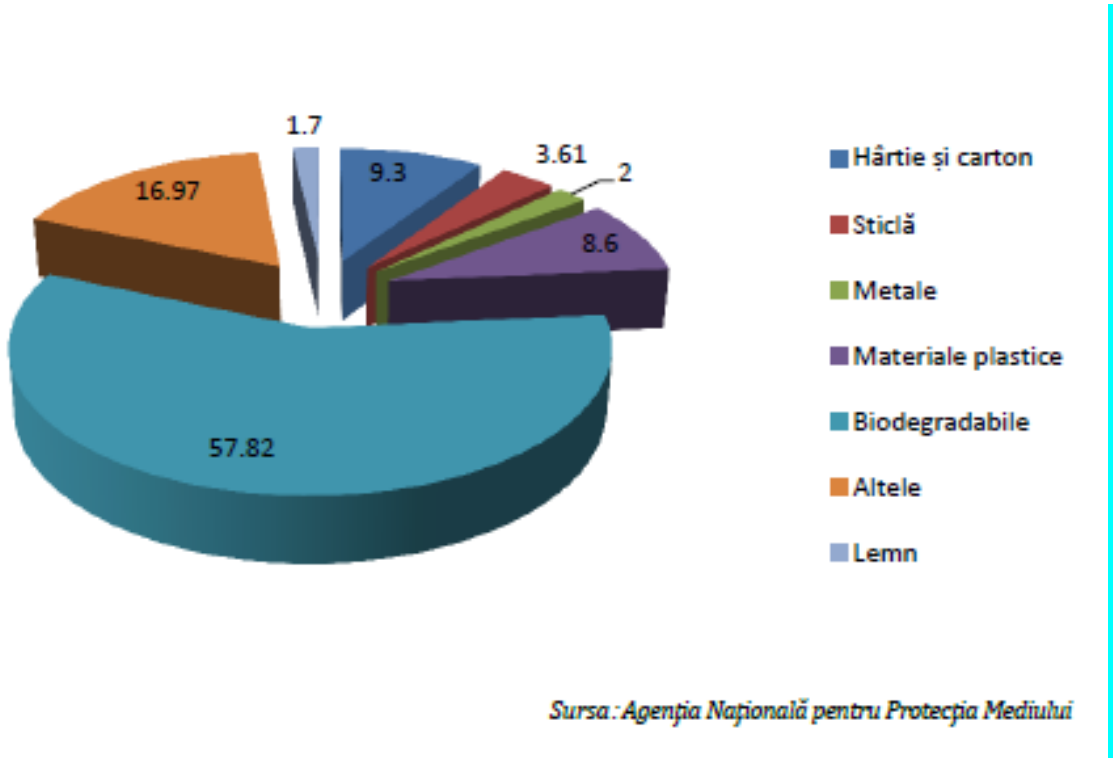
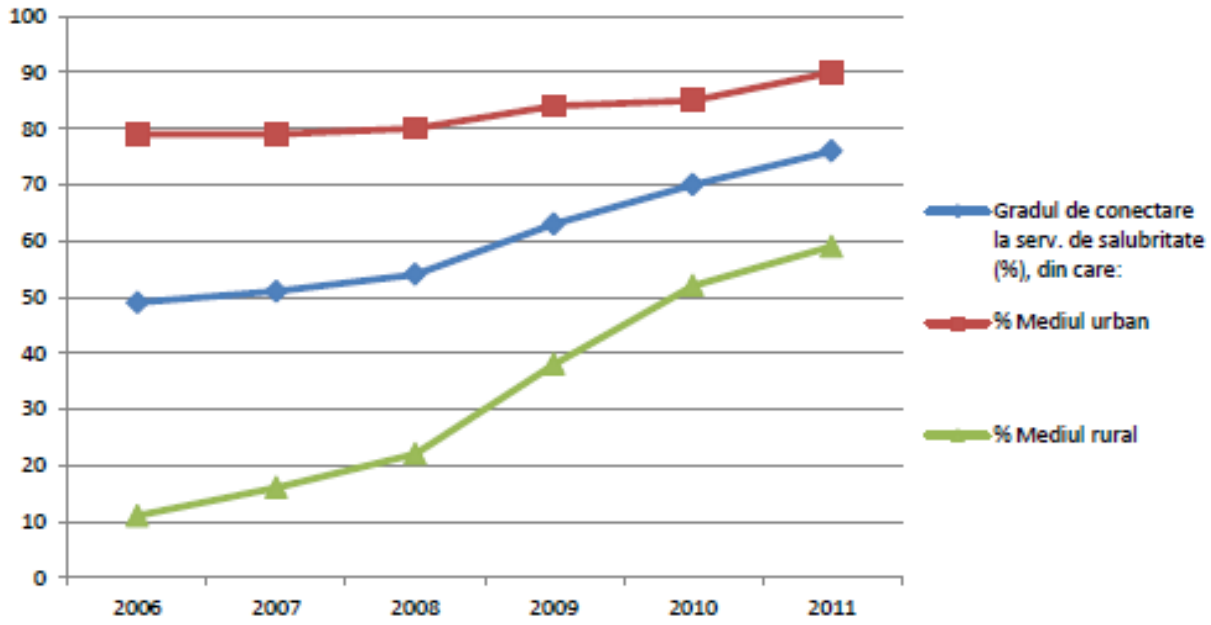


Figure 3-16: Evolution of the connection degree to sanitation services during 2006-2011



Sursa: Agenția Națională pentru Protecția Mediului

In 2011, about 93% of the municipal waste collected (excluding construction and demolition waste), collected by waste management operators was disposed of in landfills, recycling and recovery rates of these types of waste are still very low. In 2011, from 4553.3 thousand tons of municipal waste collected by waste operators (excluding construction and demolition waste), 198.5 thousand tons were recovered, by material recycling or energy recovery. Energy recovery is mostly done in cement fabrication plants authorized to co-incinerate municipal waste that are improper for material recycling.
Municipal waste disposal is done exclusively by storage. So far, facilities for municipal waste incineration have not been put into service in Romania.
In 2011, municipal waste was disposed both on compliant landfills (31), and non-compliant landfills (106) which cease activity as approved by EU transition periods (provided by GD no. 349/2005 on waste disposal).

Table 3-18: List of compliant municipal deposits in operation in the cross-border area

Item	County	Landfil	Operator
1.	Constanta	Ovidiu	SC TRACON SRL
2.	Constanța	Costinești	SC IRIDEX GROUP IMPORT EXPORT BUCUREȘTI - FILIALA COSTINEȘTI SRL
3.	Constanța	Mangalia - Albești	S.C. ECO GOLD INVEST S.A.
4.	Constanța	Incinta Port	SC IRIDEX GROUP IMPORT EXPORT BUCUREȘTI - FILIALA COSTINEȘTI SRL
5.	Dolj	Mofleni-Craiova	SC ECOSUD SRL BUCUREȘTI
6.	Mehedinti	Halanga	SC Bratner Servicii Ecologice SA
7.	Teleorman	Mavrodin	CONSILIUL JUDEȚEAN TELEORMAN

Within the cross-border area, projects of Integrated Waste Management Sytems approved by the European Commission and by AM SOP Environment are undergoing implementation, respectively:

- Giurgiu (approved in 2009, finalised);
- Călăraşi, Olt (approved in 2011);
- Mehedinti (approved in 2013).

By the time of the "State of the Environment" report's preparation (2013), other waste projects prepared within Technical Assistance contracts financed with the support of "Environment" SOP, 6 Priority Axis and by own contribution of beneficiaries, existed in the assessed area:

- 1 project whose financing applications are to be finished by the end of 2013: Constanţa;
- 1 project for which activities of drafting the financing applications are being elaborated: Dolj.

Bulgaria

According to the analysis of socio-economic development, presented at the National Regional Development Strategy 2012 - 2022, the total amount of waste generated is reducing in recent years. Since 1999, the average quantities of municipal waste per capita in Bulgaria are lower than those of the EU. The proportion of the population covered by the organized systems for waste collection and transportation of municipal waste continues to increase. Regionally, the lowest proportion of the population served by waste collection systems is East Bulgaria and especially NER - 87.8% , with Dobrich among the regions of the lowest proportion in the country (78.7%) . With a very low share is also Vidin region - 83.2%.

According to data published by the National Statistics Institute, household and construction waste parameters for the Bulgarian part of the cross-border area are as follows:

Table 3-19. Emissions of harmful substances into the air from road* and other transport in 2012, t / y

No	Region	Total municipal waste - thousands of tons	Serviced settlements - number	Population in serviced settlements - number	Household landfills - number
1	Vidin	31	139	97544	6
2	Vratsa	39	122	181568	3
3	Montana	42	130	143662	1
4	Pleven	107	123	262969	10
5	Veliko Tarnovo	94	193	251385	9
6	Ruse	85	83	231580	3
7	Silistra	38	116	116868	1
8	Dobrich	73	188	176236	7

**Road transport includes all motor vehicles using the road transport network and other transport includes air, river, sea and rail transport*

Hospital waste generated by the activities of medical institutions are transferred for further treatment to companies licensed to transport these to the relevant plant for controlled disposal under a signed contract .

According to the Report on the Condition of Environment for 2013 published by RIEW-Vratsa, on the territory of Vratsa there are still no facilities built for composting and pre-treatment of household waste, neither installations for recovery of construction waste.

Planned for 2014 is putting into operation the separation plant for household waste at the site of RDNO - Vratsa - Mezdra.

Improvement of the cleanness of settlements in the region, reduction of the amount of waste, improvement of the organization of collection, transportation and disposal of waste types, reduction of the risk of past pollution is noticed in 2013.

In 2010 National strategic plan for the gradual decrease of the quantities of the biodegradable waste that are to be deposited for the period 2010-2020 was developed and verified by the minister of environment and water. The Plan should ensure the implementation of the requirements for the gradual decrease of the quantities of the biodegradable waste that are to be deposited according to Directive 1999/31/EC on the landfill of waste.

According to the data that were presented in OPRG 2014 – 2020 about environment the territorial differences in view of the quantities of generated waste per 1 inhabitant were relatively low despite the imprecise data that exceed multifold the officially accepted accumulation rates. The differences between the regions and inside the regions concerning the share of population being served by organized waste collection are also very low. There is greater differentiation between the regions concerning the construction of regional domestic waste landfills and municipal landfills that are not in conformity with the requirements and should be closed. With the additional construction of the regional landfills that are included in the National programme for the waste activities management 2009-2013, being funded in line of Operational Programme "Environment", we can forecast the decrease of the differences between the regions.

Transport is a major source of emissions of nitrogen oxides, as their quantity reaches 28.3% of national emissions. As regards other substances, precursors of ozone, transport is a less important source, as only carbon monoxide emissions represent 9.25% of national emissions.

Table 3-20. Emissions of harmful substances into the air from road* and other transport in 2012, t / y

Groups of emission sources	SOx # (x 1000 t/y)	NOx** (x 1000 t/y)	NMVOC (x 1000 t/y)	CO (x 1000 t/y)	Pb t/y	PAH t/y
Road transport	0,13	32,93	6,496	40,49	1,168	0,172
Other transport	0,13	2,95	0,122	0,79	-	0,0007
Modal share of national emissions (%)	**0,08**	**28,3**	**2,37**	**9,25**	**1**	**0,54**

Source: EEA, NSI

** Road transport includes all motor vehicles using the road transport network and other transport includes air, river, sea and rail transport*

 # Calculated as sulfur dioxide

*** Calculated as nitrogen dioxide*

CO_2 emissions from road transport represent 98.8% of the total emissions in the sector; N_2O accounted for 1% (CO_2-eq.) and the third GHG in the sector CH_4 – less than 0.2% (CO_2-eq).

Control actions to prevent the pollution of seawater and the Danube in 2012 are illustrated in the following table.

Table 3-21. Actions to prevent pollution of seawater and Danube

Parameter	Tons
Adopted bilge and ballast water from ships	15262
Black Sea	15078
Danube	184
Collected solid waste	761
From the harbor area	0
from ships	761
Collected oil and oil spills	6,2

3.2.10 Population and Human Health

The population in the RO-BG CBC 2014-2020 area is affected by the local poor economic state.

The Romanian-Bulgarian cross-border region is one of the least developed in Europe. According to the "GDP-Based Classification of European Regions" (source:Eurostat, 2012), 6 of the 10 regions (NUTS level 3) classified as "poorest" in the EU, are located within the programme scope.

Romania

Population distribution and demographical features

According to INS information, the county with the least number of inhabitants on the Romanian side of the RO-BG CBC 2014-2020, based on the 2011 census results, is Constanta County (684082), followed by Dolj County (660544).

The natural increase per 1000 people is negative in all the counties within the programme scope. Teleorman County reports the lowest natural increase in 1000 people (-11.3) and the highest number of deaths in 1000 people (18.1).

The highest number of deaths before the age of 1 year in 1000 live-born was recorded in Mehedinti County (14.7), with nearly 2% (19.3 death before the age of 1 year in 1000 live-born) in the rural areas.

Detailed information on population dynamics is provided in the table below.

Table 3-22: Population dynamics on the Romanian side of the RO-BG CBC Programme 2014-2020

Region		SUD-VEST OLTENIA			SUD - MUNTENIA			SUD-EST	ROMANIA
County		Mehedinti	Dolj	Olt	Teleorman	Giurgiu	Calarasi	Constanta	
Population 20.10.2011 (census)		265390	660544	436400	380123	281422	306691	684082	20121641
Live-born	total	2591	6087	3447	2981	2617	3022	7535	196242
	urban	1195	3287		1132	833	1136	4899	
	rural	1396	2800		1849	1784	1866	2636	
Live-born in 1000 people	total	9	8.8	8.2	6.8	9.3	9.7	11	9.2
	urban	8.5	8.8	8.6	7.3	9.5	9.4		
	rural	9.4	8.8	7.8	6.5	9.3	9.9		
Natural increase in 1000 people	total	-4.9	-5	-4.6	-11.3	-5.9	-4.1	-0.4	-2.6
	urban	-1.2	-0.9	-0.3	-4.4	-1.3	-0.4		
	rural	-8.5	-9.7	-8.6	-14.6	-8.1	-6.4		
Deaths before the age of 1 year in 1000 live-born	total	14.7	7.9	9.9	10.1	13	10.9	9.7	9.4
	urban	9.2	7	8	7.8	7.2	10.6	8.6	
	rural	19.3	8.9	12	11.4	15.7	11.1	11.8	
Deaths in 1000 people	total	13.9	13.8	12.8	18.1	15.3	13.8	11.4	11.8
	urban	9.7	9.7	8.9	11.7	10.8	9.8		
	rural	17.9	18.5	16.4	21.1	17.4	16.3		

Source: NSI

State of Health/ Mortality

In point of life expectancy and the main causes of deaths, the information is provided for the national level.

The top ranking cause of death on Romania is circulatory system diseases, followed by tumours, according to the table below.

Table 3-23: National mortality, by main cause of death

Mortality, by main cause of death in 10000 people in 2012	Average	Men	Women
total	1198.8	1286.9	1115.2
circulatory system diseases	719.5	685.5	751.7
tumours	230.2	281.2	181.8
respiratory system diseases	62.2	79.1	46.1
digestive system diseases	67.9	83.9	52.7
infectious and parasitic diseases	11.2	15.7	7
accidents, poisoning, traumas	49.7	79.5	21.5
other causes	10.7	13	8.6

Socio-economic situation of the population

In point o statistical socio-economic condition of the population within the Romanian scope of the RO-BG CBC 2014-2020, high unemployment rates were recorded in the following counties: Teleorman (9.6%), Mehedinti (9.5%) and Dolj (9.4%). The lowest unemployment rate in the area of concern was recorded in Constanta County (4.7%), below the national unemployment rate level (5.2%).

In point of education, the county with the highest percentage of higher education graduates is Constanta (16.28%), above the national percentage of higher education graduates in the total population of Romania (14.38%) All the other counties in the area of concern rank below the national level, which needs to be considered in the selection of Programme actions under Priority Axis 1.

Percentages reflecting the share of population of primary school graduates (or less) are above the national level (17.19%) in all the counties except for Constanta (15.27%). The highest numbers (more than 25%) were recorded in the following counties: Teleorman, Giurgiu and Calarasi.

Table 3-24: Socio-economic statistics

		Mehedinti	Dolj	Olt	Teleorman	Giurgiu	Calarasi	Constanta	ROMANIA
Average number of employees	2012	43400	115628	63169	51000	29700	41000	165200	4349000
Unemployment %	2012	9.5	9.4	8	9.6	5.9	6.3	4.7	5.2
Stable population 10 or more years of age		239605	598751	396427	346644	252529	272106	610197	18022221
Level of education completed	superior	10.72%	14.29%	8.46%	7.10%	6.80%	6.86%	16.28%	14.38%
	Secondary with or without vocational training	69.60%	66.43%	69.51%	66.52%	67.32%	67.62%	68.45%	68.44%
	primary or no school	19.68%	19.27%	22.04%	26.38%	25.88%	25.52%	15.27%	17.19%

Bugaria

Population distribution and demographic charactersitics

According to data published by the National Statistics Institute of Bulgaria, Pleven is the region with biggest population in the Bulgarian part of the assessed area. It is also second ranked after Veliko Turnovo by number of live-births in 2013. However, the infant mortality rate is higher in Vidin, followed by Veliko Turnovo. The natural increase rate is negative in all the assessed regions and in the country in general. In Vidin it is almost three times higher than the national rate. The mortality rate in the cross-border area is higher in Montana, followed by Vratsa and Pleven.

More detailed data about the demographic and socio-economic characteristics of the regions in presented in the following tables.

Table 3-25: Demographic characteristics for 2013

Indicator	Total for Bulgaria	Vidin	Vratsa	Montana	Pleven	V.Tarnovo	Ruse	Silistra	Dobrich
Population as of 31.12. - Total (number)	7245677	95467	178395	141596	259363	251126	229784	116038	184680
Live-births in 2013 (total number)	66 578	656	1388	1193	2154	2234	1847	1025	1614
Natural increase rate (per 1 000 persons of the population) - ‰	-5.2	-14.3	-10.1	-11.7	-9.1	-6.9	-8.0	-6.8	-6.7
Infant mortality rate (per 1 000 live births) - ‰	7.3	10.7	5.8	8.4	6.5	7.6	7.0	5.9	9.3
Mortality rate - Total (per 1 000 population) - ‰	14.4	21.1	17.8	20.1	17.3	15.8	16.0	15.6	15.4

Source: NSI

Table 3-26: Socio-economic characteristics for 2012

No	Indicator	Vidin	Vratsa	Montana	Pleven	V.Tarnovo	Ruse	Silistra	Dobrich
1	Average annual number of employees under labor contract (number)	17 670	40 506	28 722	61 042	67 706	70 007	21 313	42 641
2	Unemployment rate (%)	17.4	9.4	14.9	10.3	13.8	12.9	16.0	15.4
3	Relative share of the population aged between 25 and 64 years with higher education (%)	15.7	18.2	18.1	21.7	23.5	22.1	15.8	18.3
4	Relative share of the population aged between 25 and 64 years with secondary education (%)	69.0	62.9	65.5	57.9	60.3	60.1	49.4	55.9
5	Relative share of the population aged between 25 and 64 years with primary or lower education (%)	15.3	18.9	16.3	20.4	16.3	17.9	34.8	25.8

Source: NSI

Various programs and employment measures were implemented targeted to certain priority groups of unemployed persons affected the outflow, but it failed to exceed the inflow of unemployed. Labor supply is greater than the demand, which also determines the imbalance in the labor market.

Health status and medical service

According to the analysis of socio-economic development, presented at the National Regional Development Strategy 2012 - 2022, the areas with increased health risk from air pollution are concentrated almost entirely in Southern Bulgaria - in SWR, SER and SCR. Areas with increased health risks associated with pollution of soil are again within two regions of South Bulgaria - SWR and the SCR, i.e. outside the scope of the Programme.

Mortality in Bulgaria is 14.4 ‰ per 1 000 population. The reasons for mortality vary, but diseases of the circulatory system appear to be the most common one. This decease has lead to the death of 1578,6 female and 1497,3 male people in Vidin Region, which is the highest number among the analysed regions. Transport accidents are of highest number in Silistra (25.7 male) and exceed more than 10 times the average for the country.

More details for the cross-border area are presented in the next tables.

Table 3-27: Mortality by causes and sex in 2013 (per 100 000 of population)

ICD, X-th Revision, European Short List	Bulgaria			Vidin		Vratsa		Montana		Pleven	
	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total	**1 495,8**	**1 594,6**	**1 402,1**	**2414,3**	**2233,0**	**2 064,9**	**1 827,7**	**2201,9**	**2082,7**	**1984,4**	**1783,4**
Infectious and parasitic diseases (A00-B99)	8,6	11,2	6,1	12,5	2,0	11,1	8,6	15,5	6,8	16,9	8,2
Tuberculosis (A15-A19, B90)	2,3	3,8	0,9	6,2	-	5,5	3,2	11,2	1,4	3,8	2,2
Meningococcal infection (A39)	0,1	0,2	0,0	-	-	-	-	-	-	0,8	-
Human immunodeficiency virus [HIV] disease (B20-B24)	0,2	0,3	-	-	-	1,1	-	-	-	-	-
Viral Heptitis (B15-B19)	0,2	0,3	0,2	-	-	-	-	-	-	0,8	-
Neoplasms (C00-D48)	250,5	300,9	202,6	399,3	265,7	347,8	251,0	350,1	225,2	413,6	250,6
Malignant neoplasms (C00-C97)	248,5	298,5	201,1	397,2	265,7	345,6	247,7	347,3	222,5	413,6	250,6
Diseases of the blood (-forming organs), immunol. disorders (D50-D89)	1,8	2,1	1,7	2,1	-	2,2	3,2	1,4	2,7	2,3	0,7
Endocrine, nutritional and metabolic diseases (E00-E90)	23,6	21,3	25,7	12,5	21,8	65,4	65,7	59,1	67,8	1,5	3,0
Diabetes mellitus (E10-E14)	23,0	21,0	25,0	12,5	19,8	64,3	65,7	59,1	67,8	1,5	3,0
Mental and behavioural disorders (F00-F99)	1,2	1,3	1,1	2,1	4,0	2,2	2,2	2,8	-	0,8	-
Alcohol abuse (including alcoholic psychosis) (F10)	0,3	0,5	0,1	-	-	2,2	1,1	2,8	-	-	-
Drug dependence , toxicomania (F11-F16, F18-F19)	0,0	0,1	0,0	-	-	-	-	-	-	-	-
Diseases of the nervous system and the sense organs (G00-H95)	15,5	16,2	14,8	10,4	9,9	28,8	21,5	12,7	14,9	17,7	24,5
Meningitis (other than meningococcal infection) (G00-G03)	0,4	0,5	0,2	-	-	1,1	-	-	1,4	-	-
Diseases of the circulatory system (I00-I99)	980,6	969,0	991,7	1497,3	1578,6	1 159,8	1 156,7	1406,1	1493,8	1207,9	1309,6
Ischaemic heart diseases (I20-I25)	189,6	208,2	171,9	399,3	372,8	345,6	254,2	507,6	553,6	192,2	126,8
Other heart diseases (I30-I33, I39-I52)	298,6	295,8	301,4	324,4	384,7	304,6	300,5	125,1	95,0	571,3	672,6
Cerebrovascular diseases (I60-I69)	298,2	280,2	315,2	613,5	620,7	455,3	536,4	672,1	716,4	346,8	413,0
Diseases of the respiratory system (J00-J99)	54,4	69,2	40,4	170,5	87,3	88,6	46,3	36,6	36,6	118,4	69,7
Influenza (J10-J11)	0,1	0,1	0,1	-	-	-	-	-	-	-	-
Pneumonia (J12-J18)	20,4	25,1	15,8	43,7	17,8	22,2	10,8	14,1	16,3	30,8	16,3
Chronic lower respiratory diseases (J40-J47)	19,7	27,2	12,7	106,1	53,5	55,4	29,1	9,8	6,8	52,3	26,0
of which asthma (J45-J46)	0,5	0,6	0,5	-	-	-	1,1	-	-	0,8	-
Diseases of the digestive system (K00-K93)	48,6	66,1	32,1	83,2	43,6	96,4	40,9	83,0	48,8	57,7	28,9
Ulcer of stomach, duodenum and jejunum (K25-K28)	4,1	5,3	3,0	14,6	4,0	2,2	1,1	7,0	1,4	3,8	0,7

Chronic liver disease (K70, K73-K74)	22,9	36,6	9,9	27,0	9,9	51,0	9,7	46,4	10,9	33,8	8,9
Diseases of the skin and subcutaneous tissue (L00-L99)	0,4	0,5	0,4	-	-	1,1	1,1	2,8	1,4	-	0,7
Diseases of the musculoskeletal system/connective tissue (M00-M99)	0,7	0,4	0,9	-	-	-	-	-	-	-	-
Rheumatoid arthritis and osteoarthrosis (M05-M06, M15-M19)	0,2	0,1	0,4	-	-	-	-	-	-	-	-
Diseases of the genitourinary system (N00-N99)	18,5	21,6	15,5	12,5	27,8	47,6	23,7	43,6	40,7	18,5	17,1
Diseases of kidney and ureter (N00-N29)	18,1	21,0	15,3	12,5	27,8	46,5	23,7	43,6	40,7	18,5	17,1
Complications of pregnancy, childbirth and puerperium (O00-O99)	0,0	-	0,1	-	-	-	-	-	1,4	-	-
Certain conditions originating in the perinatal period (P00-P96)	3,2	4,1	2,5	4,2	4,0	3,3	1,1	5,6	1,4	3,8	2,2
Congenital malformations and chromosomal abnormalities (Q00-Q99)	2,0	2,4	1,5	2,1	-	-	-	9,8	2,7	6,2	1,5
Congenital malformations of the nervous system (Q00-Q07)	0,4	0,5	0,3	-	-	-	-	1,4	-	1,5	1,5
Congenital malformations of the circulatory system (Q20-Q28)	0,7	0,9	0,6	-	-	-	-	1,4	1,4	1,5	-
Symptoms, signs, abnormal findings, ill-defined causes (R00-R99)	44,3	42,9	45,7	120,6	166,6	125,2	186,3	74,5	122,1	57,7	40,8
Sudden infant death syndrome (R95)	0,1	0,1	0,1	-	-	-	-	-	1,4	0,8	0,7
Unknown and unspecified causes (R96-R99)	17,8	21,0	14,6	37,4	27,8	17,7	12,9	12,7	14,9	22,3	13,3
External causes of injury and poisoning (V01-Y98)	41,9	65,5	19,5	85,3	21,8	85,3	19,4	98,4	16,3	61,5	26,0
Accidents (V01-X59)	24,4	37,9	11,6	62,4	15,9	47,6	11,8	59,1	13,6	35,4	17,8
of which											
Transport accidents (V01-V99)	7,4	11,8	3,2	16,6	2,0	22,2	3,2	12,7	1,4	16,1	5,9
Accidental falls (W00-W19)	3,7	5,4	2,0	10,4	4,0	3,3	2,2	9,8	2,7	3,8	3,0
Accidental poisoning (X40-X49)	1,1	1,7	0,6	-	2,0	1,1	1,1	-	-	1,5	1,5
Suicide and intentional self-harm (X60-X84)	11,9	18,9	5,3	18,7	-	27,7	2,2	29,5	1,4	22,3	6,7
Homicide, assault (X85-Y09)	1,5	2,3	0,7	2,1	-	2,2	-	8,4	1,4	1,5	0,7
Events of undetermined intent (Y10-Y34)	2,6	4,1	1,1	2,1	4,0	2,2	1,1	-	-	2,3	0,7

Source: NSI

Table 3-28: Mortality by causes and sex in 2013 (per 100 000 of population) – Cont.

ICD, X-th Revision, European Short List	Veliko Tarnovo		Ruse		Silistra		Dobrich	
	Male	Female	Male	Female	Male	Female	Male	Female
Total	**1757,7**	**1622,7**	**1 711,4**	**1 542,0**	**1 844,1**	**1 526,4**	**1732,4**	**1435,5**
Infectious and parasitic diseases (A00-B99)	12,2	3,0	5,3	2,5	10,3	6,7	9,8	2,1
Tuberculosis (A15-A19, B90)	6,5	0,8	3,5	-	3,4	-	5,4	-
Meningococcal infection (A39)	-	-	-	-	-	-	-	-
Human immunodeficiency virus [HIV] disease (B20-B24)	-	-	-	-	-	-	-	-
Viral Heptitis (B15-B19)	0,8	-	-	-	-	-	-	-
Neoplasms (C00-D48)	387,4	267,0	283,0	191,2	272,2	146,4	339,5	201,3
Malignant neoplasms (C00-C97)	368,8	257,2	279,5	188,7	243,1	138,0	335,2	201,3
Diseases of the blood (-forming organs), immunol. disorders (D50-D89)	4,1	4,6	3,5	-	-	-	2,2	2,1
Endocrine, nutritional and metabolic diseases (E00-E90)	26,8	35,7	22,9	23,5	15,4	25,2	58,8	58,7
Diabetes mellitus (E10-E14)	26,8	35,7	22,9	23,5	15,4	25,2	57,7	57,7
Mental and behavioural disorders (F00-F99)	1,6	0,8	5,3	7,5	1,7	-	2,2	1,0
Alcohol abuse (including alcoholic psychosis) (F10)	-	-	4,4	-	1,7	-	2,2	-
Drug dependence , toxicomania (F11-F16, F18-F19)	0,8	-	-	0,8	-	-	-	-
Diseases of the nervous system and the sense organs (G00-H95)	23,6	15,2	11,5	13,4	6,8	3,4	14,1	6,3
Meningitis (other than meningococcal infection) (G00-G03)	1,6	0,8	0,9	-	-	-	1,1	-
Diseases of the circulatory system (I00-I99)	1013,7	1087,1	1 093,3	1 099,3	1 260,2	1 198,3	989,1	978,3
Ischaemic heart diseases (I20-I25)	181,1	141,1	149,0	140,9	155,8	111,1	202,4	183,5
Other heart diseases (I30-I33, I39-I52)	307,0	328,5	257,5	218,8	558,2	491,4	132,8	137,4
Cerebrovascular diseases (I60-I69)	281,9	341,4	147,2	156,8	357,9	437,6	341,7	349,2
Diseases of the respiratory system (J00-J99)	59,3	45,5	97,9	50,3	46,2	18,5	75,1	35,7
Influenza (J10-J11)	-	-	0,9	-	1,7	-	-	-
Pneumonia (J12-J18)	30,1	26,6	43,2	25,2	18,8	6,7	27,2	8,4
Chronic lower respiratory diseases (J40-J47)	17,9	7,6	46,7	16,8	13,7	8,4	39,2	17,8
of which asthma (J45-J46)	0,8	1,5	0,9	0,8	1,7	-	2,2	1,0
Diseases of the digestive system (K00-K93)	60,1	26,6	63,5	53,7	87,3	45,4	75,1	41,9
Ulcer of stomach, duodenum and jejunum (K25-K28)	6,5	3,0	11,5	10,1	3,4	-	9,8	3,1
Chronic liver disease (K70, K73-K74)	35,7	8,3	30,0	12,6	37,7	21,9	34,8	10,5

Diseases of the skin and subcutaneous tissue (L00-L99)	0,8	-	-	0,8	1,7	-	-	-
Diseases of the musculoskeletal system/connective tissue (M00-M99)	-	1,5	1,8	-	-	-	-	-
Rheumatoid arthritis and osteoarthrosis (M05-M06, M15-M19)	-	0,8	-	-	-	-	-	-
Diseases of the genitourinary system (N00-N99)	29,2	19,0	22,0	15,9	12,0	11,8	27,2	19,9
Diseases of kidney and ureter (N00-N29)	29,2	19,0	19,4	15,9	12,0	11,8	27,2	19,9
Complications of pregnancy, childbirth and puerperium (O00-O99)	-	-	-	-	-	-	-	-
Certain conditions originating in the perinatal period (P00-P96)	3,2	3,8	3,5	2,5	3,4	-	4,4	3,1
Congenital malformations and chromosomal abnormalities (Q00-Q99)	1,6	1,5	1,8	2,5	1,7	5,0	3,3	2,1
Congenital malformations of the nervous system (Q00-Q07)	-	0,8	0,9	-	-	-	1,1	1,0
Congenital malformations of the circulatory system (Q20-Q28)	1,6	0,8	0,9	0,8	1,7	1,7	2,2	-
Symptoms, signs, abnormal findings, ill-defined causes (R00-R99)	55,2	81,2	30,9	57,0	37,7	35,3	37,0	46,1
Sudden infant death syndrome (R95)	-	-	-	-	-	-	-	-
Unknown and unspecified causes (R96-R99)	10,6	12,1	13,2	15,9	18,8	21,9	30,5	30,4
External causes of injury and poisoning (V01-Y98)	78,8	30,3	65,2	21,8	87,3	30,3	94,7	36,7
Accidents (V01-X59)	16,2	8,3	36,2	8,4	46,2	20,2	65,3	26,2
of which								
Transport accidents (V01-V99)	2,4	2,3	6,2	1,7	25,7	5,0	17,4	6,3
Accidental falls (W00-W19)	4,9	1,5	5,3	1,7	-	1,7	5,4	2,1
Accidental poisoning (X40-X49)	2,4	-	0,9	-	1,7	3,4	2,2	-
Suicide and intentional self-harm (X60-X84)	30,1	10,6	15,9	6,7	29,1	8,4	23,9	10,5
Homicide, assault (X85-Y09)	1,6	3,0	-	0,8	-	-	-	-
Events of undetermined intent (Y10-Y34)	28,4	7,6	13,2	2,5	6,8	1,7	4,4	-

Source: NSI

3.3 Likely evolution without implementation of the programme

The evolution without the implementation of the Programme would be the so-called "Zero Alternative". Likely effects are reviewed by factors/components below.

3.3.1 Climate and Air Quality

According to the data provided by the Executive Environment Agency in the last two decades there is positive anomaly of the average annual temperature in comparison to the climate norm for the period 1961-1990. Climate is a complex system that is influenced by many factors among which is the quantity of greenhouse gas in the atmosphere that in turn depends on the greenhouse gas emissions in the atmosphere at global level. Thus we can expect that the trend of average annual temperature increase in the country will continue for some period irrespective of whether the Programme is being implemented or not. This assumption is also confirmed by the results of the performed modelling of the Bulgarian climate in the end of the 21st century.

There is a permanent decrease of the basic air pollutants. For a 10 year period the atmospheric concentration of nitrogen dioxide has decreased with 53%, of sulphur dioxide with 65% (mainly because of the decrease of Thermal power plant emissions as a result of installing sulphur-cleaning installations), of ammonium with 62%, of the non-metal volatile organic compounds with 85%.It is expected that this trend will be maintained even without the implementation of RO-BG CBC Programme, but with lower positive values.

3.3.2 Water

3.3.2.1 Surface Water

In the recent years we have registered the trend towards the improvement of the water quality in the country. It is expected that the River Basin Management Plans (RBMP) will contribute for achieving good ecological condition and good chemical condition of the surface and groundwater and the ecosystems related to them. Thanks to the RBMP implementation it is expected that the water consumption will decrease (including in the energy sector) with the introduction of turnover cycles and other methods for the effective water utilization, as well as for decreasing the load as a result of the polluted wastewater discharge.

Bulgaria has undertaken to be in conformity with the requirements of Directive 91/271/EEA concerning the treatment of wastewater from the populated areas. It requires from the EU member-states to develop sewage networks and to ensure biological or stricter treatment of the collected wastewater. The forthcoming regulation of water-taking by all water-taking equipments from surface and groundwater, design, establishment and development of sanitary-protected areas around the water sources for drinking and household needs in conformity with the requirements in the abovementioned regulations is also expected to contribute for improving the quality of the surface water.

Activities that will potentially be carried out for the realization of the strategic objectives of the Programme and can affect both surface and groundwater, will be developed both on watersheds (urbanized areas, agricultural areas, lakes) and the river network (river correction, banks reinforcement, facilities for abstraction of surface and groundwater, etc.) by finding a balance between environmental protection and social development. Non-implementation of the Programme will not alter the tendencies for improvement of the water quality.

3.3.2.2 Ground Water

According to the National Report on the status and protection of the environment in the Republic of Bulgaria in 2012 (EEA, 2014 edition) gradual improvement in the quality of groundwater is registered during the period 1990 - 2012 for most of the indicators except sulfates and phosphates. Changes in nitrate content in groundwater shows a strong increase in unprotected ground water bodies and reduction in protected underground

water bodies. Great spatial diversity and well-marked downward trend is observed in the change of water resources.

Without applying the CBC program "Romania - Bulgaria 2014-2020 the trend for improval of the status of groundwater is expected to continue due to the ongoing implementation of the approved plans for river basin management in the Danube and Black Sea Region for 2010 - 2015 and implementation of updated river basin management plans for the period 2016 - 2021. Possible impacts on the geological environment and groundwater may result from any development of natural erosion-accumulation and gravitational processes, floods, earthquakes, minor excavation maintenance utilities, road and railway networks, local pollution by petroleum products and / or hazardous substances in road accidents, etc.

3.3.3 Soil

In recent years we have registered the soil pollution and erosion slowdown, which is significantly due to the termination of the activity of some enterprises, the developed treatment equipments and the anti-erosion events that were performed in some regions while at the same time the salinization and acidification processes keep their levels. Soil sealing continues increasing even though with slower rates than the ones in Western Europe, despite that the total number of our population decreases as the process is more prominent in the seaside regions and resorts where the construction has the highest rates.

It is expected that with the implementation of the Programme in view of soils the trend of soils pollution decrease will be maintained, and the salinization and acidification processes will remain without significant changes and the soil sealing rates will remain the same.

3.3.4 Landscape

The environmental development without the implementation of OPRG 2014-2020 would result in maintaining the status quo and trends concerning the landscapes. No change of landscapes and their visual impact is expected.

3.3.5 Biodiversity

In recent years in Bulgaria we notice desire that becomes stronger and stronger to maintain and restore the biodiversity, which is prominent in many strategic documents at national and European level: Operational programme “Environment” (OPE), National programme for development: Bulgaria 2020, National biodiversity strategy, National action plan for biodiversity, EU Biodiversity strategy to 2020, etc.

With the achievement of the objectives defined in these strategic documents it is expected that the ecosystems will be significantly restored, the ecological infrastructure will be improved, the number of invasive foreign species will be decreased, fish resources use will become more and more sustainable, maintenance of the favourable environmental protection condition of the types of natural habitats and species at local level (site level), biogeographical and national level, which will contribute for the prevention of biodiversity global loss.

To some degree the priorities of the RO-BG CBC Programme supplement the OPE objectives. Without the implementation of the Programme the target preservation and improvement of the biodiversity will be achieved with slower rates since the insufficient prevention of natural risks and the low-efficient measures in the case of disasters that affect the biodiversity will still be a problem in the next programming period in addition to the insufficiently introduced low-carbon transport systems. In the case there are no activities that are related with the increase of environmental pollution the Programme is not expected to impact the biodiversity.

3.3.6 Cultural Heritage

Romania

Maintenance of national heritage objects in Romania has to face the general economic shortages of the country. Including the objects into tourist trails under this program would stimulate business management and provision of additional funds for maintenance expenses.

Bulgaria

Despite the progress that was recently registered in the public attitude towards the preservation and socialization of the ICV and especially after the implementation of the EU programmes upon the pre-accession funds, as well as the work that is finalized now for the implementation of priority axis 3.1. of OPRD 2007-2013 (improvement of the tourist attractions), promotion of cultural heritage will be restricted to national level only without the implementation of international, including cross-border cooperation.It is expected that without RO-BG CBC Programme:

- the ICV will significantly lose their current priority in the state policy and the municipal policies and will be left without the necessary financial support from the public sector for protecting them and for the development of exhibition environment of full value;
- ICH will not become active factor for the economic and social progress in regions development and will not function as a factor for employment increase of the local population;
- The impact on the enhancement of the development of the other functional systems of the living environment of the regions will grow weaker, the practice of the so-called “partial modifications” of the arrangement plans will recur being undoubted manner for compromising the quality of the arrangement tools impact.

3.3.7 Waste

The non-implementation of the Programme would not impact the quantity of the generated waste and the manner of managing since the activities that are set in the Programme do not directly concern the waste management. It can be expected that the trends of greater parts of the population being covered by the waste collection system and the system for separate package waste collection will be maintained, as well as that the planned regional domestic waste landfills will be developed.

3.3.8 Material Assets

In the context of the continuing global economic crisis we can expect that without having the funding for the European operational programmes, the regions will encounter ever increasing difficulties in covering their current costs for education, health, culture and social services and the probability to have remaining resources for developing environment-friendly and low-carbon transport systems is insignificant. Thus in the case the activities provided for in the CBC Programme are not implemented, it can be expected that the condition of the educational, health, social and cultural infrastructure of the country will keep deteriorating.

3.3.9 Population and Human Health

The cross-border cooperation policy tools can help for finding ways to bring economic revival of the individual regions, improvement of the urban environment and living conditions of the population, for certain risky groups of the population, for decreasing poverty and for social inclusion of the isolated ones, the deinstitutionalization of children and adults at risk and other social activities that are directly related with the health status and demography of the population.

In case the Programme is not implemented, no conditions for promoting the sustainable and quality employment and supporting labour mobility by integrated cross-border labour markets between Romania and Bulgaria will be created. Without the implementation of the Programme some of the negative trends could exacerbate concerning the health status

of the population since there will be hindrances for ensuring the better quality of life for the population and for healthy living conditions that in turn is a prerequisite for increased health risk for the population.

4 Environmental characteristics of the areas to be significantly affected

Considering there is no specific information about the projects that will be implemented under the CBC Programme, at this stage it is deemed that any part of the cross-border area could be significantly affected by the future projects. Therefore the fundamental condition prior to implementing such projects is to undertake specific environmental impact assessment and appropriate assessment, where applicable. However, in order to focus the attention to the most vulnerable areas that should be taken into consideration in the future assessments, a brief overview is presented below for the main groups of these areas.

4.1 Landscapes and areas having a recognised international protection status

At international level, in the programme's area are identified:

- one biosphere reservation (in ROMANIA, partially in the programme's area) - *Danube Delta* (1991) and
- Ramsar sites (ROMANIA): Techirghiol Lake (2006), Portile de Fier – Iron Gates Natural Park (2011), Comana National Park (2011), Bistret (2012), Iezerul (lake) Calarasi (2012), Olt-Danube confluence (2012) and Suhaia (2012).
- Ramsar sites (BULGARIA): Ibisha island (Montana), Belene islands complex (Pleven, Veliko Tarnovo), Srebarna (Silistra), Durankulak lake (Dobrich), Shabla lake complex (Dobrich).

Of the national network of protected natural areas, *the **Danube Delta Reservation*** distinguishes itself both as area, as well as at the level of biological diversity, having a triple international status: Biosphere reservation, Ramsar Site (humid area of international importance), Natural and Cultural World Heritage Site. The concept and the name of "Biosphere Reservation" have been promoted over 25 years ago (1971) through the "Man and Biosphere" Programme (MAB) under the auspices of UNESCO. The concept was intended to preserve specific natural areas, representative ecosystems capable of maintaining and extending some endangered or almost disappeared species of plants and animals.

Ramsar Sites

Wetland areas have been defined as ponds, swamps, natural or artificial water surfaces, permanent or temporary, where the water is still or running, sweet or salty, including the surfaces of marine waters with a depth under reflux no higher than 6 m.

Table 4-1: Ramsar sites in the Romanian programme's area

Name of the RAMSAR site	County	Size (ha)	Designation date as RAMSAR site
Total		**1156448**	
Delta Dunării	Tulcea, Constanța	647000	21/5/91
Parcul Natural Porțile de Fier	Caraș-Severin, Mehedinți	115666	18/1/11
Ostroavele Dunării - Bugeac - Iortmac	Călărași, Constanța	82832	2/2/13

Name of the RAMSAR site	County	Size (ha)	Designation date as RAMSAR site
Total		1156448	
Confluența Olt-Dunăre	Olt, Teleorman	46623	13/6/12
Blahnița	Dolj	45286	2/2/13
Calafat-Ciuperceni-Dunăre	Dolj	29206	2/2/13
Bistreț	Dolj	27482	13/6/12
Dunărea Veche - Brațul Măcin	Brăila, Tulcea, Constanța	26792	2/2/13
Parcul Natural Comana	Giurgiu	24963	25/10/11
Brațul Borcea	Călărași, Ialomița	21529	2/2/13
Confluența Jiu-Dunăre	Dolj	19800	2/2/13
Suhaia	Teleorman	19594	13/6/12
Canaralele de la Hârșova	Ialomița, Constanța	7406	2/2/13
Iezerul Călărași	Călărași	5001	13/6/12
Lacul Techirghiol	Constanța	1462	23/3/06

Table 4-2: Ramsar sites in the Bulgarian programme's area

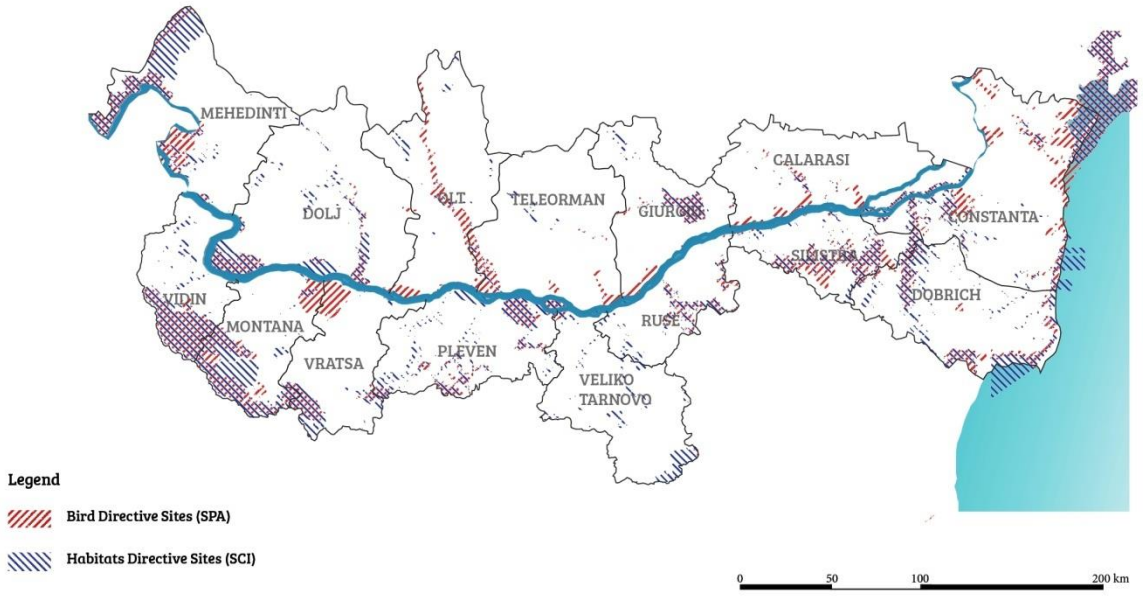
NAME OF THE RAMSAR SITE	COUNTY	AREA [ha]
Ibisha island	Montana	372.19
Belene islands complex	Pleven, Veliko Tarnovo	6 897.58
Srebarna	Silistra	1 464
Durankulak lake	Dobrich	350
Shabla lake complex	Dobrich	404

4.2 Landscapes and areas of Community interest

Natural-interest habitats are distributed in a relatively uniform manner in the Romanian counties, having a bigger territorial incidence in counties with higher variety of relief, climate, and hydrology. There are 82 NATURA 2000 sites in the Romanian cross-border area, presented in Item 3.2.6.2.

As for Bulgaria, there are a total of 131 protected sites included in NATURA 2000 network located in the cross-border region (91 sites under the Habitats Directive and 40 sites under the Birds Directive). The distribution of the sites varies from 10 in the Ruse district to 16 in the Dobrich district, spreading also to the neighbouring district of Varna. Full list of Natura 2000 sites within the Bulgarian cross-border area is provided in the baseline above.

Figure 4-1: Natura 2000 areas in the Romania-Bulgaria cross-border area



Source: Détente Consultants

Vulnerability

Due to the economic pressure and the lack of natural resource management, protected areas are exposed to great risks because of illegal exploitations, tourism, constructions, and poaching. These activities cause irreversible damage in the natural environment of the cross-border region. Because of these serious problems and issues related to climate change, all the protected areas, including future Natura 2000 areas, are facing major challenges of natural environment conservation. However, several guidances exist related the management and protection of Natura 2000 sites[28], which lay down the most important requirements of conservation measures and planning.

4.3 Landscapes and areas having a national nature protection status

Besides the landscapes and areas having an International protection status (such as Biosphere reservations and Humid areas of International significance – RAMSAR sites) and those of Community interest (NATURA 2000 sites, both presented above, the landscapes and areas having a national protection status in Romania include as well:

- monuments of nature;
- scientific reservations;
- natural reservations, and
- national parks.

As for Bulgaria, the categories of nationally designated areas are:

[28] http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

- reserve;
- national park;
- monument of nature;
- maintained reserve;
- nature park;
- protected locality.

The tables bellow presents the most important sites of these categories.

Table 4-3: Romanian Natural and National Parks in the programme's area (2012)

Name	County	Area (ha)
National Parks		
Delta Dunării	Constanta Tulcea	580 000.00
Domogled - Valea Cernei	Caras-Severin Gorj Mehedinti	61 211.00
Natural Parks		
Comana	Giurgiu	24 963.00
Platoul Mehedinti	Gorj Mehedinti	106.50
Portile de Fier	Caras-Severin Mehedinti	115 665.80

There are 3 National Parks in Bulgaria, none of which within the programme's area. Therefore the table below lists only the Nature Parks in the programme area.

Table 4-4: Bulgarian Nature National Parks in the programme's area (2013)

Name	District	Area (ha)
Nature Parks		
Rusenski Lom	Ruse	43 080.00
Persina	Pleven Veliko Tarnovo	22 405.00
Brachanski Balkan	Montana Vratsa	31 587.

Full list of nationally protected areas within the Bulgarian cross-border area is provided in Item 3.2.6.2 above.

4.4 Areas designated for extraction of water intended for human consumption

In locating the facilities established under the RO-BG CBC 2014-2020, consideration must be given to the specific provisions regarding protection zones for water abstraction sites, whether surface or underground.

Romania

In Romania, definition of the protection zones was provided under the Water Law and HG 930/2005 approving the Special Norms for the nature and size of sanitary and hydro-geological protection zones.

Designation of the protection areas around surface and ground-water abstraction used for drinking water was based on the following criteria:

- supplying average flow rates of more than 10 m3/day or serving more than 50 people;
- future use for drinking water abstraction.

Under the law, protection zones are established on site, with various degrees of pollution risks:

a) strict regime sanitary protection zone;

b) sanitary protection zone with restriction regime;

c) hydro-geological protection site.

In order to prevent water contamination or pollution risks from human activities, the protection zones require bans on certain activities and land use restrictions.

In **hydro-geological protection sites** precautionary measures are enforced to:

- prevent pollution with hardly degradable or non-degradable substances;
- prevent or compensate for significant changes in the regeneration regime of the operated water resources. These precautionary measures are established under environmental impact assessment studies, which are mandatory in the regulation procedures for any works or activities within hydro-geological protection zone.

In **sanitary protection zone with restriction regime**, the land may be used for agriculture by its owners, but with band on:

- the use of natural and chemical fertilisers;
- the use of plant protection substances;
- wastewater irrigation, even after complete treatment;
- livestock breeding and animal waste disposal;
- grazing and silo feed storage;
- location of greenhouses or fish breeding ponds.

Apart from the restrictive measures on farming, the following are also banned on such land:

- all the activities listed under hydro-geological protection sites;
- the location of: slaughter houses, railway shunting yards, garages;
- non-sealed residual water tanks, unprotected septic tanks;
- housing, hospitals, airports, military facilities without sewerage systems;
- human and animal graveyards, scrapyards, waste containers;
- ballast, peat, stone quarrying operations;
- camping sites, bathing areas without sewerage systems;
- the building of structures for industrial or farming activities: stables, silos, fertiliser and plant protection storage facilities;
- car fuel, lubricant, solid fuel storage facilities;

- car was and oil changes; etc.

In the **sanitary protection zone with restriction regime** all the activities listed for the sanitary protection zones with restriction regime, the hydro-geological protection sites are banned, as well as:

- the siting of structures or developments not directly related to the operation of the source or installation;
- digging or excavations of any kind;
- the storage of materials, except as strictly required for the operation of the source and the installations, in which case steps will be taken to prevent any pollutant seeping into the soil;
- wastewater sewerage systems, except as related to the protected facility;
- discharge of wastewater, even if treated;
- fishing and bathing;
- ice collection and animal watering.

Farmland included in such zones may only be used for perennial crops, grain and fruit tree growing, the following being banned:

- use of animal or chemical fertilisers and plant protection substances;
- irrigation with non-potable water;
- crops requiring frequent care or the use of animal drawn equipment;
- grazing;

In the strict regime sanitary protection zone the following constructive and operational protective action must also be implemented:

- the operator of the groundwater abstraction works must own at least an area of land equal to the strict regime sanitary protection zone;
- no intervention is allowed on the active soil and aquifer cover deposits;
- the land must be protected against erosion and flooding;
- old open pit works must be secured to prevent the seepage of potentially polluted water.

Every Water River Basin Administration holds a Register of protection zones for the RB, which includes the following information under the heading “Protection Zones for Drinking Water Abstractions”:

- The general characteristics of the protected zone;
- A map of the protection zones for drinking water abstractions;
- A chart of the abstraction flow rate development (surface and groundwater);
- A chart of the served population development;
- A table of the adjoining protection zones for each surface or ground water abstraction.

Bulgaria

Surface water

As regards Bulgaria, Appendix 3.1.1 of the developed RBMP of the Danube River Basin Directorate lists sanitary zones designated for surface waters, and catchments of surface water for potable purposes are listed in Appendix 3.1.2 of the developed RBMP. There are sanitary protection zones (SPZs) that are still to be designated or in the process of designation, as illustrated in the Figure below.

Figure 4-2 Areas designated for protection of surface water intended for human consumption

Source: RBMP, Danube River Basin Directorate

The scope of the program has no potential to affect areas designated for the extraction of water for human consumption to water bodies within the remit of the Black Sea Basin area.

Ground water

In **Bulgaria**, according to Article 119 of the Water Act in the RBMP all 47 groundwater bodies within the geographical scope of the RO-BG CBC Programme 2014-2020 are designated as areas for protection of water used for potable water supply and have an average daily flow rate of 10 cubic meters or are used for water supply of more than 50 people. Therefore, the indicative activities in the Programme, mainly those related to construction work on upgrading transport infrastructure or development of areas with high and medium level of risk from geological hazards, floods, etc. might affect almost all the water protection zones in the Programme area, though primarily those groundwaters with " bad" chemical status. In view of the above, for the protection of groundwater against pollution, the implementation of RO-BG CBC Programme 2014-2020 must comply with the prohibitions set out in Art. 118 of the Water Act concerning:

- Direct discharge of pollutants into groundwater;
- Disposal, including the disposal of priority substances, which can lead to indirect discharge of pollutants into groundwater;
- Other activities on the surface and in the groundwater body, which can lead to indirect discharge of pollutants in ground water;
- The use of materials containing priority substances in building structures, civil engineering works, etc. where contact with groundwater is implemented or possible.

Particular attention should be paid to the protection of groundwater sources of drinking water and mineral water by sanitary zones that are or are to be defined and established according to the requirements currently in Ordinance № 3/16.10.2000 terms and conditions for research, design, validation, and operation of sanitary protection zones around water sources and facilities for drinking water and sources of mineral waters used for therapeutic, prophylactic, drinking and hygiene needs, and subsequently in Ordinance for protection zones of water intended for drinking water and mineral water under Article 135, Para 1(6).

The location of existing water intake facilities and sanitary protection zones for the indicative activities of the Programme shall be specified in the process of the EIA for the investment proposals arising from the implementation of the Programme. Implementation of investment projects and intentions resulting from RO-BG CBC Programme 2014 – 2020, which concern the use or abstraction of ground water bodies subject to authorization under Chapter Four "Permitting " and Chapter Eight "Water conservation and water bodies" of the Water Act , Ordinance № 1 of 10.10.2007 on exploration, use and protection of groundwater, and an Order issued annually by the Director of the Basin Directorate for the approved available resources of groundwater bodies determining on a monthly basis the total abstraction from groundwater bodies and the available water volumes , according to Article 116, Para 2 of the Water Act.

4.5 Water bodies designated for recreation, including areas designated as bathing waters

The relevant EU standards relate to water quality monitoring, assessment and management, and with the provision of water quality information.

There is a twofold objective: to reduce and prevent bathing water pollution and to inform the Europeans on the extent of its pollution. At the European level, bathing water quality is regulated under Directive 76/160/ECE on bathing water quality and Directive 2006/7/EC of the European Parliament and Council of 15 February 2006 on the management of bathing water quality repealing and Directive 76/160/ECE.

As regards **Romania,** the report on bathing water quality for the 2012 season looked at coastal waters (the Black Sea) monitored by the Public Health Directorates under Directive 2006/7/EC of the European Parliament and Council of 15 February 2006 on the management of bathing water quality repealing and Directive76/160/ECE. Te report to the European Commission for 2012 included 49 coastal water bathing areas, of which 48 in Constanta County. The bathing water quality in these areas complied with the legal provisions in force, so the mandatory level was complied with 100%.

In **Bulgaria**, according to RBMP within the BDDR area there are no water bodies designated as recreational waters, including areas designated as bathing under Directive 76/160/EEC.

Within the BSBD area, areas for bathing and for beaches are designated as follows: in Dobrich - 38 beaches and 21 bathing areas.

Black Sea waters, apart from being used for recreational purposes and bathing, are designated as "sensitive area." This requires all sources of pollution (wastewater discharges, mouthing streams, and activities related to the use of Black Sea resources) to

be provided with the so-called III-rd stage of WWTP, which solves the problem of pollution in terms of nitrogen and phosphorus. Many wastewater treatment plants serving the resorts have a capacity that can not meet the growing recreation and tourism resource. This can be a direct stop for sustainable development of tourism complexes, a problem that already exists.

4.6 Areas designated for the protection of economically significant aquatic species

Romania

In Romania, all the river basin management plans provide under "Chapter 5. Identification and mapping of protected zones" a section (5.2) titled "Areas for the protection of economically important aquatic species".

Designation of the areas for the protection of economically important aquatic species sought to identify the water courses that allow for the development of aquatic fauna of economic potential and commercial interest in such species. Areas for the protection of economically important aquatic species are not subject to any special water quality protection measures, which are listed in the framework provided under H.G. 202/2002 and H.G. No. 201/2002 but benefit from some measures to protect living aquatic resources.

Protection of economically important aquatic species considered:

- Protective measures to protect living aquatic resources;
- Technical norms for the quality of surface waters requiring protection and improvement for the support of fish life and water quality for molluscs.

Designation of the protection zones for economically important species is based n the following regulations:

- Government Decision No. 202/2002 approving the technical norms for the quality of surface waters requiring protection and improvement for the support of fish life, as amended (HG 563/2006, HG 210/2007) - transposing Directives 78/659/ECE and 2006/44/EC on the quality of fresh waters needing protection or improvement in order to support fish life;
- Government Decision No. 201/2002 approving the technical norms for the quality of water for molluscs, as amended protection and improvement for the support of fish life, as amended (HG 210/2007) – transposing Directive 79/923/ECE on the quality required of shellfish waters, as amended by Directive 2006/113;
- Order No. 1950/2007/38/2008 of the Minister of Environment and Sustainable Development and the Minister of Agriculture and Rural Development on the definition and recording of marine areas suitable for shellfish breeding operations;
- Law No. 317/2009 approving Emergency Government Ordinance No. 23/2008 on fishing and aquaculture;
- Law No. 69/1994 providing for the ban of international trade in endangered species as amended;
- Order No. 8/126/2010 of the Minister of Agriculture and Rural Development and the Minister of Environment and Sustainable Development on fishing bans in 2010;
- Order of the Minister of Agriculture and Rural Development No. 342/2008 on the minimum individual size of living aquatic resources in the public of the state, by species, hat may be captured from the aquatic environment;

- Order No. 20/2010 on the conditions for practising recreational/ fly fishing, the rues of recreational/fly fishing and the template fly fishing permits;
- O.U.G. No. 57/2007 on the regime of natural protected areas, and the conservation of natural habitats and wildlife flora and fauna, as amended;
- Order No. 262/330/2006 of the Minister of Environment and Water Management and the Minister of Agriculture , Forests and Rural Development on the conservation of sturgeon populations in natural waters and the development of sturgeon aquaculture in Romania;
- Order No. 1231/812/2007 of the Minister of Environment and Sustainable Development and the Minister of Agriculture and Rural Development on approving the Programme for the support population of the Danube with sturgeon larvae in 2007.

Bulgaria

In Bulgaria, in RBMP of BDDR there are not designated areas for protection of economically significant species, as notwithstanding that Article 119a, Para 4 of the Water Act provides for areas for the protection of economically valuable species of fish and other aquatic organisms, the secondary legislation (regulations, rules, instructions and orders), which regulates the manner and criteria for designation, a virtually absent. Water bodies under the category “river” are used only for recreational fishing pursuant to this Act. To the dams designated for commercial fishing there are measures and requirements to protect local natural reproduction of fish for preservation and maintenance of fish stocks and other aquatic organisms.

In RBMP of BSBD, in accordance with Ordinance № 4 / 20.10.2000 concerning the water quality for fish and shellfish breeding, water bodies or parts thereof are designated that providing conditions for fish habitats, as well as coastal waters for habitat and reproduction of shellfish . Appendix III -2.1 RBMP of BSBD lists 12 places of coastal waters in the Black Sea Basin , providing or capable of supporting life conditions and reproduction of shellfish . Areas of surface water bodies providing habitat conditions of fish stocks are 598.

4.7 Areas of nutrient-sensitive waters, including vulnerable areas

4.7.1 Sensitive areas

Sensitive areas are designed to protect surface waters from the increasing content of nutrients from wastewater from settlements.

Romania

Nitrates and phosphates are qualitatively assessed in the “Nutrient” group. Nutrients are environmental compounds of nitrogen and phosphorus that plants and animals need for their growth and development. The presence of nutrients in the water, soil and subsoil is normal, nutrient pollution meaning loads of nutrients in excess of the concentrations determined by ecosystem functioning mechanisms. Under the Urban Wastewater Treatment Directive and the Water Framework Directive, nutrients include the following physico-chemical elements of nitrogen and phosphorus: N-NH4, N-NO2, N-NO3, P-PO4, Ptotal. The ecological state given by the “nutrients” is obtained by applying the “worst case” principle.

From a pollution point of view, nutrients are various forms of nitrogen and phosphorus (nitrates, nitrites, ammonium, organic nitrogen in vegetable residue and other organic compounds, and phosphates) Excess nutrients, irrespective of the source, leach or seep into the groundwater, rivers, lakes and seas. By boiling, the nitrate concentration in water increases, while purification filters do not retain nitrates.

Nitrates (NO3) and phosphates (PO4) in the waters naturally originate from aquatic animal waste (primarily fish), from the soil in the lake basin, or the decay of aquifer specific organic matter.

Surplus phosphate and nitrates accumulates from human activities, i.e. wastewater discharges int surface waters from WWTPs or non-treated sewerage, as well as from human waste and waste from industrial and agricultural sources (fertilisers and animal waste).

Agriculture and livestock breeding cause important pollution of the ground waters, very often cumulative and persistent in the water layers. Nutrient presence in wastewater in large quantities causes the contamination of rivers and lakes that may undergo eutrophication in the form of increased growth of algae and other higher plant forms, the so called "algal blooming" leading to unwanted disturbance in the balance of water organisms and in the water quality. Water oxygen depletion will reslut in the death and massive decay of the entire zooplankton. Without oxygen, water becomes a fermentation and putrefaction medium.

Considering Romania's position in the Danube River Basin and the Black Sea Basin, and the need to protect the environment in these areas, Romania has declared its entire territory a sensitive area. This decisions translates into the requirement for agglomerations of more than 10,000 e.p. to provide infrastructure for the treatment of urban wastewater allowing for advanced treatment, especially nutrient removal (nitrogen and phosphorus) from the wastewater – under Article 3(1) of HG No. 352/2005.

Bulgaria

Sensitive areas are designed to protect surface waters from the increasing content of nutrients from wastewater from settlements. The catchments of designated sensitive areas are subject to the requirement for additional treatment of urban waste water (step for treatment of nitrogen and phosphorus) for settlements of more than 10 000 pe. Sensitive areas encompass the whole BSBD.

For the territory of BDDR sensitive areas are:
- The Danube River within the Republic of Bulgaria, from the border at Novo Selo, in the border town of Silistra.
- All tributaries in the catchment area of the Danube River on the territory of Bulgaria.

4.7.2 Vulnerable areas

Romania

An important consequence, with hazardous effects on human health is the presence of nitrates and nitrites, respectively, in the drinking water. These nitrogen compounds may cause, in babies and pregnant women, a blood disease called the "blue disease" that may seriously impact their health and may even threaten their life.

In order to remove pollution and prevent future pollution and to obtain the same level of protection in all the Romanian waters, an Action Programme against Nitrate Pollution from Agricultural Sources" has been decided. Thus, as of June 2013, according to the decision of the *Interministerial Commission for the Implementation of the Action Plan for Water Protection against Nitrate Pollution from Agricultural Sources* No. 221983/GC/12.06.2013, the Action Programme has been applied at the national level.

In order to reduce the nitrate pollution potential the "Action Programme for Water Protection against Nitrate Pollution from Agricultural Sources" has been implemented in accordance with the measures included in the Agricultural Good Practice Code.

Bulgaria

Vulnerable zones are designated for protection of groundwater nutrient pollution from agricultural sources. Order № RD-930/25.10.2010 of the Minister of Environment and Water specifies vulnerable zones with requirements for breeders and farmers.

Vulnerable zones cover about two thirds of the territory of BSBD, and only part of the catchment of Kamchia River, Veleka and Resovska river are invulnerable areas.

Vulnerable areas are particularly important for the Danube region due to the fact that almost all bodies of groundwater are used for potable purposes which necessitate groundwater protection and storage as a strategic resource for future generations.

In Bulgaria By Order № 930/25.10.2010 of the Minister of environment and water among the 47 groundwater bodies within the geographical scope of the RO-BG CBC Programme, 29 bodies have been identified as waters polluted and threatened by pollution caused by nitrates from agricultural sources, as well as vulnerable areas where the waters are polluted by nitrates from agricultural sources . Of these, 26 bodies are in the Danube region and three bodies within the territory of the Black Sea region.

5 Existing environmental problems

5.1 Climate and Air Quality

The urbanization and industrialization directly impact the local climate conditions changing the values of the meteorological elements above the air dome that is formed over these (urbanized and industrialized) territories. The incorrect and unsuitable planning and urbanistic decisions result in the creation of unfavourable microclimate conditions for the human comfort. In many cases these urbanistic decisions result not only in the elimination of the favourable characteristics of the natural landscape but in the creation of uncomfortable living conditions for the population. The main negative changes are related to:

- High degree of thermal pollution – it is caused by the heat exchange of concrete, stone, asphalt and other construction materials and laying. The thermal stress has been a subject of the scientific research for long time;
- Deteriorated aeration conditions (air exchange), due to all elements of urbanization and industrialization that result in the change of wind characteristics. The incorrect distribution of the urbanization elements results in the formation of areas with prevailing calm weather and no opportunity for normal air exchange. This results in the creation of conditions for keeping the pollutants from transport and other sources in the ground air layer that directly influences the health of the population.

Almost all types of anthropogenic activities result in changing the compounds of the ground level air layer where people live. The main reasons for the creation of high pollution degree are:

- The main problem is the high contents of fine dust particles below 10 microns. The districts of Vidin and Vratsa have measured in 2012 the highest levels in the country for fine dust particles. In total 34% of the population within the Danube environment-monitoring area on the Bulgarian territory is affected by this pollution, measured with average daily norm of 50 μg/m3 being surpassed more than 35 days per year. The reasons for the levels of fine dust particles that are registered over the admissible limit are emissions caused by the transport, the industrial and the housing sectors, and the poor maintenance of the roads.
- The waste traffic gases are the main reason for the air pollution around the city arteries and inside the cities in general. The data provided by the national monitoring system are an example of this.

- The waste gases from the fuel installations for industrial and household needs are another significant factor that results in the deterioration of the air quality.

According to article 27 of the Air Quality Act, the municipalities perform the municipal programmes that are the statutory instrument for the AQ maintenance and management at their territory. In the Municipalities where the programmes upon article 27 of the Air Quality Act are being implemented, continuous control is performed (with the automated measuring stations) and abnormal pollution was established in view of the indicator FDP10 in the following cities within the cross-border area: Veliko Tarnovo, Vidin, Vratsa, Dobrich, Montana, Pleven, Ruse. The main reasons for the abnormal rates of FDP10, according to the programmes are:

- The domestic heating in the winter season in the most cases is combined with the supplementing effect of transport;
- The prevailing influence of the transport sector – in view of the largest cities;
- The prevailing influence of the non-organized sources – for some cities in proximity to large industrial regions;

Currently, the programme area in the Bulgarian side, particularly in Veliko Tarnovo and Gorna Oryahovitsa, has serious environmental problems because of the rate of air and water pollution and soil contamination.[29]

5.2 Water

5.2.1 Surface Water

Some of the problems related to water quality shared by the two countries are as follows:

- Wastewater from (some) human agglomerations is not completely covered by the sewerage network. There are many agglomerations without sewers and collectors for water treatment;
- Wastewater treatment plants have not been implemented in agglomerations of more than 10,000 e.p. and agglomerations of 2,000 to 10,000 e.p. Some of the existing treatment facilities are inefficient, outdated or very dilapidated;
- The existing WWTP do not treat all wastewater due to lack of inlet collectors, insufficient treatment capacity, and require reconstruction, modernization, or retrofitting works.
- Untreated wastewater is discharged directly into surface water bodies;
- Illegal discharge of industrial waste water into water resources;
- Problems with wastewater treatment are typical of the urban and rural areas where no water treatment facilities and the placement of economic activities involves risks for environmental protection;
- Water in rivers used for ballast extraction has poor chemical and status and suffers hydro-morphological impacts.
- The condition of the existing sewer networks is not always good - the networks are dilapidated and allow for water seepage/leaks;
- Pollution from agricultural sources - application of pertilisers and pesticides;

[29] *National Regional Development Strategy of the Republic of Bulgaria for the period 2012-2022 (Ministry of Regional Development and Public Works, 2012)*

- There are non-permitted landfills for household waste, including within the river floodplain and terraces;
- Diffuse sources of pollution from industry - discharges of wastewater into absorption wells and backwaters, existence of non-permitted industrial waste landfills.

The main problems for Black Sea water include: eutrophication/ nutrient enrichment; changes in living marine resources and changes of biodiversity/habitat; chemical pollution (including with oil), including the emergence of alien invasive species; and the coastal erosion of the Black Sea Shore.

5.2.2 Ground Water

Romania

In areas where the soil is impacted by chemical fertiliser application, nitrate concentrations often range around 100 mg NO3/l. Exceedance of the quality standard for nitrates was also recorded in water monitoring wells on the existing and closed large chemical plant complexes, but such exceedance is typically local, primarily on site or adjacent areas, but can still pose a contamination hazard for the local aquifers, considering the hydro-dynamic nature and hydraulic conductivity of water.

In 2012, the highest nitrate concentrations were found in:

- the Dobrogea-Litoral hydrographic space, in the pollution control wells located on water bodies RODL01, 02, 04,05, 09, 10;
- the Jiu River Basin, in the wells of water bodies ROJI05 and 06;
- the Olt River Basin, in the wells of water bodies ROOT02, 07 and 08;
- the Argeş-Vedea River Basin, in the wells of water bodies ROAG03, 05, 08 and 09;

Some of the major polluting factors that can impact water quality include:
- chemical products (fertilisers, pesticides) used in agriculture, causing hard to identify and prevent diffuse pollution,
- municipal and livestock breeding waste, heavy metals.

Ground water quality is also impacted by the pollution caused by non-correlation of higher production capacities in agriculture and urban development and the modernisation of sewerage and building of WWTPs, poor operation of the existing WWTPs, lack of an organised waste and urban wastewater sludge collection, disposal and management system.

Groundwater pollution has important consequences for the use of the groundwater resource for drinking water purposes, as cleaning of groundwater is a laborious and costly process.

Bulgaria

Major environmental problem at the moment is the rather unfavorable chemical status of a significant proportion of groundwater bodies within the RO-BG CBC Programme scope. According to the available information in 2012, as detailed in the baseline above, in "bad" chemical status are 23 groundwater bodies, while in "good" chemical status - 24 groundwater bodies. Of these in "bad" chemical status are 20 bodies in the Danube region and three bodies in the Black Sea region.

Negative anthropogenic impact on the chemical and quantitative status of groundwater results from:

- point sources of pollution: old dumpsites for waste from settlements, pesticide warehouses, etc;
- diffuse sources of pollution : settlements without wastewater treatment plants and no or partial sewerage network, existing greatly depreciated sewerage networks, land use (arable land and permanent crops) with regard to the application of fertilizers and pesticides;
- state of abstraction: seasonal water shortages in some places, large losses of drinking water before reaching consumers; use of potable water for industrial use and irrigation.

5.3 Soil

Romania

The most serious soil degradation problems affect the South-West Region, i.e.the counties of Dolj, Olt and Mehedinti of the RO-BG CBC 2014-2020 area.

Dolj County is the most affected, with vast areas affected by desertification. An area of Dolj County was identified for ecological reconstruction: the sand dune area left of the Jiu, within the Sadova – Bechet – Corabia triangle, where irrational cutting of protective forest screens enhanced the desertification process and extension of the aridisation area.

Massive deforestation and heavy rain in Dolj County in recent years have also increased the number of landslide events, especially in areas of predominantly clayey soil, thus more exposed to such disasters.

- The Dolj Forestry Department jurisdiction includes 1978 ha unproductive land (that cannot be reclaimed by afforestation), of which about 1000 ha sands.

The situation of land in Dolj County is as follows:

- The area of land exposed to erosion in Dolj County is 20707 ha, about 3.5% of total farmland.
- The area of land affected by desertification is 14650 ha, about 3.5% of total farmland.
- The area of land affected by slides is 1324 ha, about 0.2% of total farmland.
- The area of land affected by excess humidity is 14400 ha, about 2.5% of total farmland.
- The area of land affected by desertification County is 233381 ha, about 39.5% of total farmland.
- The area of land with no vegetation or degraded vegetation is 5200 ha, about 0.9% of total farmland.

In Olt County, about 47899 ha of farmland are negatively impacted by soil degradation to a greater or a lesser extent by: surface, deep and wind erosion, landslides, floods, compaction, depleted organic content, siltation, soil and atmospheric draught, switch to non-agricultural use.

In Mehedinti County, soils are affected by frequent draught (78 ha), erosion (85 ha), low humus reserve, mobile potassium and mobile phosphorus, etc.

Calarasi, Giugiu and Teleorman are among the counties with the largest arable areas in Region South Muntenia. However, these counties record an increasing area of fallow land.

Bulgaria

The negative processes in soils that relate to the Programme are mostly about the expansion of problems such as soil sealing, erosion, landslide processes and local pollution.

The soil sealing process refers to soils that are used and permanently built over for the construction of settlements, infrastructural construction, commercial and transport sections, road network. It is expected that in the years to come the process will become ever more prominent because of the planned projects to be implemented.

Soil erosion affects large areas of the country territory, including the cross-border area. It is a natural process that strongly depends on the anthropogenic factors. Cutting forests down and removing the natural plantation in the case of implementation of infrastructural, tourist and other projects, and the absence of adequate anti-erosion events result in problems exacerbation such as the loss of valuable soils as a result of erosion development. Landslides are also natural processes and the reasons for their occurrence are related to the highly broken relief and other specific geologic features in certain regions, but they are also highly dependent on human activity in the very urbanized regions.

The local soils pollution is related in most cases with the transport network, the warehouses for dangerous ingredients and the industrial enterprises. Issues related to transport are expressed in local pollution by petroleum products, salinization of surrounding soil due to road maintenance in winter conditions, and pollution with household waste. Transport and especially industrial enterprises are a major source of soil contamination with heavy metals.

5.4 Landscape

Romania

Landscape is a piece of nature that stands out by a unique grouping of components resulting from a combination of natural and man-made factors. Landscape protection includes actions to preserve and maintain the significant aspects or features of a landscape, justified by its asset value deriving from natural configuration and/or human intervention.

Landscape management includes actions aiming to preserve the landscape, in a sustainable development perspective, in order to guide and harmonise the changes brought about by social, economic and environmental developments. Law No. 451 of 8 July 2002, whereby Romania ratified the European Landscape Convention, adopted in Florence in 2000, specifies the obligations to be met in this regard.

The Convention objectives include: promotion of landscape protection, landscape management and development, and organisation of European cooperation in the area.

In the past decades, the natural conditions and landscapes in Romania have been heavily influenced by the development of economic activities, compounded by the recent economic growth, based on excessive use of natural resources. In such conditions, many plant and animal species are endangered and landscape change is a prime indicator of environmental deterioration. Special attention should be paid to landscape impacts in each of its 3 components: cultural items (settlements, infrastructure, structures, human activities), biodiversity and the geo-morphological structure (relief, geological, hydrological features).

Bulgaria

There are several main issues related with landscape, such as lack of specific legislation, pollution of landscape components, change of landscape types, landscape disturbance, and visual-aesthetic impacts.

Currently the only regulation in Bulgaria that provides for the landscapes preservation and management is the European Landscape Convention. The lack of national legislation in the landscapes area is a significant hindrance for the correct assessment of the impact on landscapes and their components and preservation respectively. The activities for the landscape preservation and sustainable management should be regulated in the legislation.

The construction activities for the development of new sites, as well as for the reconstruction and refurbishment of the existing sites results in dusting and pollution of the landscape components with heavy metals and soot from the roads; with waste and fuel-oiling materials from the vehicles and the construction mechanization, and from the activities related to the transport maintenance.

The change of the existing landscapes as well as their pollution with waste has unfavourable visual-aesthetic impact on landscapes. The creation of new landscape types as a result of the construction of new equipments and anthropogenization of the territories is also a significant problem.

Disturbance of landscape could be direct and indirect. The direct violation of the landscape components is registered during the construction activities and rehabilitation of all types of sites and as a result of the presence and use of construction equipment at the site; there is also visual-aesthetic loading of the territories. Indirect changes in the landscapes are registered as a result of the following activities: changes in the land utilization, placing enclosures and lighting, change of landscape characteristics as a result of intensification of terrains use, soils erosion, impact on landscapes as a result of the suggestions for landscape shaping. Indirect changes in the landscape components also result from the building of new structures and sites.

5.5 Biodiversity

5.5.1 Flora and Fauna

In the past decades, the natural conditions have been heavily influenced by the development of economic activities, compounded by the economic growth, based on excessive use of natural resources. In such conditions, many plant and animal species lose their habitats and become endangered.

The intensive urbanization and overbuilding, the transport intensification, the pollution of the internal water basins and new territories with industrial and domestic waste etc., are powerful negative factors that influence the abundant and original biodiversity of Bulgaria.

Overbuilding or developing tourist and other infrastructure in ever more sensitive areas (including protected areas, Natura 2000 sites, rare and vulnerable habitats and ecosystems such as humid sites, areas along the river valleys, forests etc.) becomes graver problem in recent years.

Road transport is a general environmental problem and its negative impact on the environment in particular concerns biodiversity.

Air pollution, especially in the large cities as a result of the intensive car traffic results in deterioration of the living conditions, hence in the decrease of biodiversity and even the extinction of synanthropic bird and mammal species. The air pollutants depositing is a continuing problem for the health status of woods and the compounds of plant communities. It violates the healthy balance of organisms or ecosystems in direct manner and via soil acidification. The interaction of the deposited air pollutants with the foliage changes the food status of trees and increases their sensitivity to the attacks of the pathogenic fungi or the insect pests.

The cumulative number of the species that are foreign for Bulgaria has been continuously growing since 1900. The most vulnerable habitats in view of the intrusion and

naturalization of foreign plant species are the ones created by the human, followed by the river valley habitats.

Overpopulation results in decrease of green areas, parks and gardens on the account of the new construction. Parks and green areas are places where in addition to the town fauna types, bird and mammal species are successfully preserved that have adapted to the town conditions.

The activities related to irrigation in the Danube floodplain, carried out before 1989, caused major changes in the vegetation.

Uncontrolled disposal of construction waste by the citizens and companies at the exit points of the populated areas, around the road arteries and the pollution of the green areas is also a significant problem. This directly deteriorates the habitats and destroys valuable plant species and influences in direct and indirect manner the fauna diversity.

5.5.2 Designated Areas

Romania

As a result of economic pressure and lack of responsible management of the natural resources, protected areas are exposed to high risks due to: illegal operations, tourism, construction and poaching. These activities cause irreversible damage to the natural environment of the cross-border region. Due to such serious problems, and the challenges of climate change, a;; the protected areas, including future Natura 2000 sites, are facing major challenges for the conservation of the natural environment .

Although important progress was made in some areas, e.g. in finalising the Natura 2000 network of protected areas and in reducing fresh water body pollution from point sources, it cannot be said that the general objective of halting biodiversity loss (by 2011) has been achieved.

Up to 25% of the animal species are still endangered and even common species continue to suffer from the absence of suitable habitats outside protected areas. Urban expansion, industrial development, the new infrastructures, continue to spread at an alert pace, often at the expense of the remaining natural areas.

Not only loss, degradation and constant fragmentation of natural habitats have been recorded, but also the fact of whole ecosystems are on the brink of irretrievable disappearance.

The potential consequences are very serious indeed. Out economic and social welfare are largely dependent on the continuous flow of vital “ecosystem services”, but their benefits to society are often ignored.

All these issues indicate the need to double, in future years, the policy efforts in favour of biodiversity and to ensure that biodiversity and the many ecosystem services it provides are better integrated into the other policy areas, so that biodiversity may become the basis of economic development and social welfare.

Bulgaria

Biodiversity loss is one of the most serious problems for the environment globally as well as for Bulgaria and the cross-border area in particular. As a result of the human activities nowadays the species become extinct from 100 to 1000 times faster than the usual. In the last decades almost all ecosystems and the biodiversity being a part of them are subjected to many negative factors such as destruction, fragmentation, pollution and misuse of habitats and climate changes.

Another problem is the absence of new general arrangement plans that regulate the construction of recreational sites, resort sites, the activities performed in the Natura 2000 sites and others in some of the prominent resort municipalities.

Wildfires are great problem for the flora and fauna, since they change all environmental conditions, including the destruction of plant and animal species, as many of them are rare and valuable, partial or full destruction of the humus soil layer, creation of prerequisites for the penetration and development of fungal and other harmful organisms that result in violating the ecosystem stability.

5.6 Cultural Heritage

The current problems related to the preservation of the cultural and historical heritage are the same in both Bulgaria and Romania, as follows:

- Insufficient compliance with the requirements for protection and preservation of the immovable cultural values according to the Territorial Arrangement Act, the Cultural Heritage Act, the Environment Protection Act and the ordinances to them; the specific rules and norms in the General arrangement plans and the detailed arrangement plans on the arrangement in the territories with cultural and historical heritage.
- Unforeseen and non-undertaken preventive measures for physical protection and preservation;
- Insufficiency of the regulatory requirements concerning the scope and contents of the arrangement plans and the investment projects for envisioning integrated measures for renewal, regeneration and protection of the cultural heritage sites and their exhibition environment against damages and destruction as a result of the effect of foreseeable natural and anthropogenic factors;
- Integrated measures for protection and preservation that are not included in the draft-arrangement and investment tools for the renewal of the environment and the sites, terrains upgrade and planting;
- Measures for the maintenance of the exhibition environment quality of the cultural heritage sites in the remote regions and in the urbanized environment that were not foreseen – there are no requirements for placing small wastewater treatment plants; laying sewage networks; creating prerequisites for good natural air ventilation of the spaces in the ancient densely built town parts;
- Conservation and restoration works (CRW) that were not performed in quality manner or with unsuitably selected materials for CRW concerning the specific conditions (microclimate) in the exhibition environment;
- Unsuitably selected materials for CRW concerning the sustainable and specific conditions (microclimate) in the exhibition environment;
- Incompetence and improvisations in the performance of the current repair works and CRW of the construction and rehabilitation works of immovable cultural values in their exhibition environment;
- Lack of institutionalized permanent monitoring of the changes concerning the parameters of the various impact factors on the material substance and the exhibition environment of the cultural heritage sites;
- Incompletely defined regimes for protection, preservation and management of cultural values' socialization;

- Admittance of priority of the activities that are risky in view of the protection and preservation of immovable cultural values and actions for the renewal of the values themselves of their exhibition environment.

5.7 Waste

According to EUROSTAT data for 2010 (EUROSTAT Communication No. 48/2012-27 March 2012 for the year 2010) there are significant differences among the EU MS in regard to waste management. States where municipal waste is primarily landfilled include: Bulgaria (100%) and Romania (99%), followed by Lithuania (94%) and Latvia (91%). At the opposite end are states where municipal waste recycling is important: Denmark (54%), The Netherlands (39%), Belgium (37%).

Romania

Unwanted consequences of human civilisation include the generation and quantitative increase and diversification of waste. Of the total quantity of municipal waste, the largest share is that of household and similar waste (about 72%), while about 45% of this waste is biodegradable. It comes from the people's homes as well as businesses, commercial properties, offices, public institutions, health units and public spaces (parks, public gardens, markets, streets). Municipal waste disposal is primarily provided by landfilling. To date, Romania has not implemented andy municipal waste incinerators.

Waste not only involves high costs of collection, transport, neutralisation, disinfection and discharge into the natural environment, but also potential health risks.

Direct health risks relate to the presence of pathogens (bacteria, viruses and protozoa, helminths), of decaying organic substances generating odorous and potentially toxic compounds, and of toxic substances as such, causing infectious diseases and intoxications, often of an epidemic nature.

There are also indirect risks due to the contamination of water sources and hence of food, caused by non-hygienic waste management.

Moreover, improper storage and collection creates habitat and food for rats, flies, bugs and other vectors that play a passive role din the spread of diseases. Not only the general population, but especially health and sanitation workers are exposed to this risk, compounded by a high exposure potential to accidents by dust, flammable and other hazardous materials and to road traffic during transport and undisciplined actions of members of society. Solid waste may also contain toxic substances.

Correct waste management should prevent and, to the extent possible, mitigate these negative effects.

Bulgaria

A major problem for the cross-border area is that in some areas there are still no facilities for composting and pre-treatment of waste, as well as no installations for treatment of construction waste. There are still landfills that are not in conformity with the legulatory requirements and should be closed. In addition, there are issues related to the management of industrial and hazardous waste. Some of these are:

- lack of facilities for treatment of certain types of waste;
- disposal of a large part of industrial waste to landfills for non-hazardous waste, which leads to rapid depletion of the capacity of those facilities;
- lack of a center for disposal of hazardous waste;

Unresolved issue remains the hazardous waste generated by households, such as fluorescent tubes, batteries, bottles and containers contaminated with hazardous substances, etc.

In most cases, these wastes fall into the household waste stream. The main reason for this is that municipalities have not designated places for the collection of these types of waste.

An issue is also the illegal enterprises for dismantling of ELV - in most cases, these are individuals who do not have permits for waste processing and are difficult to identify.

The concept of waste utilization as a kind of energy resource has is yet adopted to effective level and prevents the achievement of economically beneficial and environmentally-friendly results in the country.

5.8 Material Assets

Even though there is insufficient publicly available data on the current condition of tangible assets, it is evident that social and cultural infrastructure needs capital repairs (including refurbishment of road infrastructure and disaster prevention systems). Bulgaria still has much to do to reach the European standards of material asset levels.

Social facilities, such as kindergartens, homes for the elderly, orphanages, etc. are neither adequale in numbers, nor in quality. Cultural infrastructure suffers lack of funds for maintenance and development. The same refers to the tangible fixed assets with ecological use, such as facilities and equipment necessary for environmental protection and recovery and monitoring and control equipment.

5.9 Population and Human Health

Romania

In point of population dynamics and health, of special concern is the mortality rate in the counties of the RO-BG CBC 2014-2020 area, exceeding the national death rate in all counties except Constanta (11,8‰). The highest rate (18,1‰) was recorded in Teleorman County. Also alarming is the number of death before the age of 1 in 1000 live born ranging from 7.9‰ in Dolj County to 14.7‰ in Mehedinti County (where the rural rate is 19.3‰).

The statistics of death causes shows that the top ranking cause of death in Romania is circulatory system diseases, followed by tumours.

Bulgaria

The main problem concerning the demographic development of the country is the high mortality rate. The coefficient of total mortality in 1990 was 12.5‰, in 2000 it got up to 14.1‰ and in the next years it remained over 14‰. In 2013 the mortality coefficient was 14.4‰. As a result the natural population growth is negative. The mortality rate in view of the diseases of the circulatory organs keeps growing in recent years. Bulgaria is among the highest ranking countries in Europe with standardized mortality rate that significantly exceeds the EU one - 685.35 (Bulgaria) and 276.3 (EU) per 100 000 people.

The child mortality in the country is relatively constant during the last years - around 9 ‰. This indicator is higher than the EU average. The coefficient of birth has a worrying tendency to diminish in the last 5 years (from 10.7 ‰ in 2009 to 9.2 ‰ in 2013. In general there is a trend of population decrease in the country. This trend is due not only to the negative natural population growth but to the population migration.

The analysis of the data for the last 5 years shows an increase of the disease incidence rate with some socially significant diseases – circulatory, endocrine and malignant tumour formations.

6 Environmental Protection Objectives

6.1 Environmental Protection Objectives at National Level

Romania

Section 2.3.2 of the pesent report presented the "National Strategies, Programmes and Plans in Romania, wich allow the identification of the national environmental protection objectives, as relevant for the RO-BG CBC Programme 2014-2020. The most relevant are considered the objectives established through:

The National Sustainable Development Strategy of Romania (2013-2020-2030) (SNDD) was developed by the Ministry of Environment and Sustainable Development with the United Nations Development Programme Romania (UNDP Romania).

As mentioned in the final document, approved under Government Decision No. 1.216/2007 approving the Memorandum of Understanding between the Central Public Authority for the Environment and the UN Development Programme Romania on revising the National Sustainable Development Strategy, SNDD considered:

- rational correlation of the development objectives, including investment programmes, with the supporting capacity of the natural capital;
- use of the best available technologies from an economic and ecological perspective, in investment decisions involving public funds; firm introduction of eco-efficiency criteria in all the production or service activities;
- anticipating the effects of climate change and preparing both long-term adaptation solutions and inter-sectoral contingency plans, to include alternative solution portfolios for crisis situations generated by natural or anthropogenic events.

Strategic objectives of the SNDD:

- *Horizon 2013: Organic incorporation of sustainable development principles and practices into all the public policies and programmes of Romania as a EU MS.*
- *Horizon 2020: Reaching the current EU average for the main sustainable development indicators.*
- *Horizon 2030: Romania's significantly approaching the year's EU average for the sustainable development indicators.*

The main directions for action, detailed by sector and by time horizon include:

- *Rational correlation of the development objectives, investment programmes, including at the inter-sectoral and regional level, with the potential and supporting capacity of the natural capital;*
- *Enhanced modernisation of the educational and professional training, health and social service systems, taking into account the demographic developments and their impact on the labour market;*
- *Generalised use of the existing best technologies from an economic and ecological perspective, in investment decisions involving public funds; firm introduction of eco-efficiency criteria in all the production or service activities;*
- *Anticipating the effects of climate change and preparing timely contingency plans for crisis situations generated by natural or anthropogenic events;*
- *Ensuring food safety and security by capitalising on Romania's competitive advantages, without giving up on the requirements to maintain soil fertility, preserve the biodiversity and protect the environment;*
- *Identifying additional funding resources for the implementation of large scale projects and programmes, especially in infrastructure, energy, environmental protection, food safety, education, health and social services;*

- *Protection and enhancement of the national cultural and natural heritage; harmonisation with the European norms and standards for the quality of life.*

Of relevance for the CBC RO-BG 2014-2020 project is the national objective set for Horizon 2020, practically summing up a series of general objectives related to energy efficiency and renewable resources, on the one hand, and climate change and climate change adaptation measures, on the other hand.

Horizon 2020. National Objective:

> *Providing efficient and safe operation of the national power system, reaching the current EU average energy intensity and efficiency; meeting Romania's obligations under the legislative package "Climate change and energy form renewable sources" and internationally, based on a new global agreement; promoting and implementing climate change adaptation measures and observing the principles of sustainable development.*

Actions:

• Integrating adaptation to climate change at the time of implementing and amending the current and future legislation and policies;

• Revising the budget, all the national strategies and programmes so as to ensure that they include adaptation in the sectoral policies;

• Establishing ways of communication in view of implementing adaptation measures at the local level. Many of the decisions that directly or indirectly impact on adaptation to climate change are made at the local level;

• Increasing awareness of the adaptation to climate change. Behavioural changes in societies and communities largely depend on awareness of the problem.

Table 6-1: Environmental protection objectives - Romania

Policy and strategies for environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	**Action axes**		**Priority Axis**	**Specific Objectives**
National Sustainable Development Strategy of Romania (2013-2020-2030)				
Horizon 2020. National Objective: *Providing efficient and safe operation of the national power system, reaching the current EU average energy intensity and efficiency; meeting Romania's obligations under the legislative package "Climate change and energy form renewable sources" and internationally, based on a new global agreement; promoting and implementing climate change adaptation measures and observing the principles of sustainable development.*	Rational correlation of the development objectives, investment programmes, including at the inter-sectoral and regional level, with the potential and supporting capacity of the natural capital	Air / Climate Water Soil Landscape Biodiversity	1; 2	1.2: Increased transport safety on waterways and maritime transport routes 2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage
	Enhanced modernisation of the educational and professional training, health and social service systems, taking into account the demographic developments and their impact on the labour market	Population Human Health	4	4.1: To create an integrated cross-border area in terms of employment and labour mobility
	Generalised use of the existing best technologies from an economic and ecological perspective, in investment decisions involving public funds; firm introduction of eco-efficiency criteria in all the production or service activities	Air / Climate Water Soil Waste Population Human Health	5	5.1: To increase cooperation capacity and the efficiency of public institutions in a CBC context
	Anticipating the effects of climate change and preparing timely contingency plans for crisis situations generated by natural or anthropogenic events	Air / Climate Water Soil	3	3.1: To improve joint risk management in the cross-border area

Policy and strategies for environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	Action axes		Priority Axis	Specific Objectives
		Landscape Biodiversity Population Human Health		
	Ensuring food safety and security by capitalising on Romania's competitive advantages, without giving up on the requirements to maintain soil fertility, preserve the biodiversity and protect the environment	Water Soil Landscape Biodiversity Population Human Health	2	2.2: To enhance the sustainable management of the ecosystems from the cross-border area
	Identifying additional funding resources for the implementation of large scale projects and programmes, especially in infrastructure, energy, environmental protection, food safety, education, health and social services	Air / Climate Water Soil Landscape Biodiversity Cultural Heritage Material Assets Waste Population	5	5.1: To increase cooperation capacity and the efficiency of public institutions in a CBC context

Policy and strategies for environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	Action axes		Priority Axis	Specific Objectives
		Human Health		
	Protection and enhancement of the national cultural and natural heritage; harmonisation with the European norms and standards for the quality of life	Landscape Biodiversity Cultural Heritage Material Assets Waste Population Human Health	2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage

Bulgaria

The National Development Programme: Bulgaria 2020 (NDP BG2020) is the leading strategic and programming document detailing the objectives of the development policies of the country to 2020.NDP BG2020 is an integrated document on the socio-economic development of Bulgaria to 2020, showing the link between the priorities of the EU in the context of the Europe: 2020 Strategy and the national priorities of Bulgaria. It covers the full range of actions of the state in the area of socio-economic development, and at the same time it determines the place of measures for the achievement of the national objectives, whose implementation was laid down in the National Reform Programme, the Convergence Programme and all existing strategic and programming documents. For this reason NDP BG2020 provides the basis for the programming document under the EU Cohesion Policy for the period 2014-2020.

National Environmental Strategy 2009-2018 (NES) is the natural continuation of the Republic of Bulgaria environmental policy. NES is primarily a strategic document. It presents a vision for the development of national policy on environment and formulates the national long-term priorities. NES acknowledges that the processes and challenges related to the environment are reflected in all sectors and walks of life, and vice versa, which requires new more integrated and comprehensive approaches to address them. It addresses the growing need for protection and improvement of environmental quality to be considered as one of the pillars of sustainable development, together with economic and social development. The strategy outlines objectives and actions aimed at the protection, restoration and regeneration of the natural environment, maintaining the diversity of living nature, prudent use of natural resources and the resources of the country in the context of sustainable development.

The table below presents the relationship between RO-BG CBC priorities and the national strategic priorities related to environmental protection objectives outlined in these key documents.

Table 6-2: Environmental protection objectives – Bulgaria

Priorities and policies, which are directed towards the environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	**Sub Priorities**		**Priority Axis**	**Specific Objectives**
National Development Programme: Bulgaria 2020 (NDP BG2020)				
3. Achieving of sustainable integrated regional development and use of local potential.	3.2. Stimulating urban development and improving the integration of Bulgarian regions at a national level Under: Risk prevention, development of technical infrastructure OPRD 2014 - 2020	Population Human health Biodiversity Water Soil Climate Air quality Landscape Cultural heritage	3	3.1: To improve joint risk management in the cross-border area
	3.4 Support for effective and sustainable utilization of the tourist potential of the regions and developing cultural and creative industries in the regions		2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage
	3.5 Establishing conditions for preserving and improving the environment in the regions, adapting to the climate changes and achieving sustainable and effective use of the natural resources		2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage
				2.2: To enhance the sustainable management of the ecosystems from the cross-border area
			3	3.1: To improve joint risk management in the cross-border area
	3.6 Enhancing the territorial cohesion by developing and expanding the cross-border, interregional and transnational cooperation		1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks
5. Supporting the innovation and investment activities for increasing the economics competitiveness	5.4 Supporting the tourism sector.	Population Human health Biodiversity Cultural heritage	2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage
8: Improving transport connectivity and access to markets	8.1 Constructing sustainable railway transport system through sector reforms	Population Human health	1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T

Priorities and policies, which are directed towards the environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	Sub Priorities		Priority Axis	Specific Objectives
		Biodiversity Water Soil Climate Air quality Landscape Cultural heritage Material assets		transport networks
				1.2: Increased transport safety on waterways and maritime transport routes
	8.2 Effective maintenance, modernization and development of the transport infrastructure. Integrating the Bulgarian transport system with the European one		1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks
	8.3 Achieving high transport safety and security		1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks
				1.2: Increased transport safety on waterways and maritime transport routes
	8.4: Limitation of the negative impact of transport over the environment and human health		1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks
				1.2: Increased transport safety on waterways and maritime transport routes
	8.5: Sustainable development of public transport		1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks
				1.2: Increased transport safety on waterways and maritime transport routes
	8.6: Improving the connectivity and integration of Bulgarian regions on a national and international scale and the connectivity with big urban centers in neighboring countries		1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks

Priorities and policies, which are directed towards the environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	Sub Priorities		Priority Axis	Specific Objectives
				1.2: Increased transport safety on waterways and maritime transport routes
National Environmental Strategy (2009-2018, draft)				
Reduction and prevention of the effects of climate change and clean energy	Reduce the growth of greenhouse gas emissions relative to the growth of GDP	Climate Air quality Population Human health	1	1.1: Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks
	Adapting to climate change		1	1.2: Increased transport safety on waterways and maritime transport routes
	Achieving environmentally sustainable energy development in the country			Not applicable
Provide sufficient quantity and quality of water for the population and the economy.	Provide good surface and groundwater, good ecological potential of artificial and heavily modified water bodies.	Water Biodiversity Soil Landscape Cultural Heritage	2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage 2.2: To enhance the sustainable management of the ecosystems from the cross-border area
	Provide water with adequate quantity and quality for the population, aquatic ecosystems and the economy and reduce the effects of floods and droughts in the context of global change			
	The perception of water as an element of national security for sustainable development of the country.			
	Implementation of integrated water management and coastal areas in the Black Sea Basin based on the ecosystem approachOvercoming the crises in the water.			
A healthy environment for a better quality of life	Reducing health risks from environmental pollution	Population Human health Biodiversity Water	2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage
	Reaching the common EU standards for ambient air quality (AAQ) on the territory of the country , reducing emission levels and improve the quality of liquid fuels			
	Ending the use of substances that deplete the ozone layer and reduce emissions of fluorinated greenhouse gases			

Priorities and policies, which are directed towards the environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	Sub Priorities		Priority Axis	Specific Objectives
	Reduce the risks to human health and the environment from chemicals	Air quality Soil Landscape Cultural Heritage Waste		
	Prevention of major accidents involving dangerous substances and limit their consequences			
	Prevent unauthorized export of certain dangerous chemicals			
	Raising the awareness of the population , incl. childhood and school age to reduce risks to the environment and human health from the use of certain hazardous chemicals			
	Prevention and reduction of noise in urban			
	Improve control of the sources of environmental noise by the competent authorities			
	Sustainable management of soil			
	Restoration of damaged soils			
Promoting sustainable consumption and production	Expand the use of green technologies and eco-innovation in all sectors of the economy	Population Human health Biodiversity Water Air quality Soil Landscape Cultural heritage Waste Material assets	2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage 2.2: To enhance the sustainable management of the ecosystems from the cross-border area
	Integration of preventive tools in environmental economic policies			
	Encouraging sustainable patterns of consumption and production in all sectors of the economy			
	Sustainable waste management			
	Achieving a sustainable transport system and reduce pressure on transport on the environment			
	Sustainable management of the country's regions			
	Development of sustainable urban agglomerations and			
	Achieving sustainable agricultural development and reduce pressure on the environment sector			

Priorities and policies, which are directed towards the environmental protection		Environmental factors taken into consideration	Linkage of RO-BG CBC Programme priorities to strategic priorities at national level	
Strategic Priorities	Sub Priorities		Priority Axis	Specific Objectives
	Sustainable forest management based on an ecosystem approach			
	Reduction of environmental pressures from tourism and sustainable tourism development			
	Integrated protection and conservation of natural and cultural heritage			
Limiting and halting the loss of biodiversity	Sustainable management of biodiversity	Biodiversity Cultural heritage	2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage
	Protection of habitats and species of European and national importance of the National Ecological Network and beyond			
Formation of new behavior patterns of society-friendly environment and promoting sustainable development, as well as providing better information and monitoring environmental	Improving access to information and public participation in making decisions on the environment, including increasing the use of electronic means of access to information and public participation in the process of decision-making	Biodiversity Cultural heritage Population	2	2.1: To improve the protection and sustainable use of natural heritage and resources and cultural heritage
	Raising awareness , culture, education and the formation of new behavior patterns of society -friendly environment and promoting sustainable development			
	Improvement and development of monitoring systems and monitoring programs			
	Improvement and development of new information systems and registers the state of the environment			
	Development of methodologies and introducing a set of indicators , including indicators of sustainable development as a tool for assessment of the state of the environment and the effectiveness of environmental policy			

6.2 Environmental Protection Objectives at European Level

The strategy "Europe 2020" — EU strategy for intelligent, sustainable and inclusive growth

The general budget of the European Union for the programming period 2014 - 2020 is aimed towards the achievement of the objectives of the Strategy "Europe 2020", with whose implementation Europe strives at achieving once again growth that is **intelligent, inclusive and sustainable:**

The intelligent growth means achieving better results in EU in the field of:

- education (providing incentives for people to learn and improve their skills);
- research/innovations (creating new products/services that generate growth and jobs and assisting in the resolution of the social problems);
- digital society (using the information and communications technology);

Inclusive growth means:

- Increasing the employment levels in Europe – more and better jobs especially for women, young and elderly people;
- Assisting the people from all age groups to foresee and adapt to the changes via investing in skills and training;
- Modernizing the labour markets and social systems;
- Ensuring that the benefits from the growth will reach all EU parts.

Sustainable growth means:

- Developing more competitive low-carbon economy in which resources are used in efficient and sustainable manner;
- Protecting the environment, decreasing the emissions and preventing the biodiversity loss;
- Taking advantage of Europe's leading position in the development of new environmentally friendly technologies and production methods;
- Introducing efficient smart electricity-distributive networks;
- Using networks on European scale for providing our enterprises with additional competitive advantage (especially the small-sized producers);
- Improving the business conditions, especially for the small- and medium-sized enterprises;
- Assisting the consumers in making well-informed choices.

The strategy "Europe 2020" has 5 headline targets for the period until 2020 as follows:

- Employment – jobs for 75% of the people aged between 20 and 64;
- R&D activities and innovations – investing 3% of the GDP of EU (considering both public and private sectors) in the R&D activity and innovations;
- Climate changes and energy – decreasing the greenhouse gas emissions with 20% in comparison with 1990; receiving 20% of the energy from renewable energy sources (individual target for Bulgaria 16%); energy efficiency increase with 20%;
- Education – decreasing the per cent of children that drop off school before graduation under 10%; at least 40% of the 30-34-aged should have higher degree of education;

- Poverty and social exclusion – at least 20 million less poor people or at the risk of poverty and social exclusion;

These 5 targets at EU level are being adapted and turned into national targets for each member-state in conformity with the particular condition and circumstances in it.

RO-BG CBC Programme takes into account the targets of Strategy 2020, as it contributes for the achievement of headline targets Employment, Poverty and Social Exclusion, and Education though its PA 1 (A skilled and inclusive region), and to Climate changes and energy through its PA 3 (A green region).

6.3 Environmental Protection Objectives at International Level

The environmental objectives at international level are reflected in the EU policies on environment and sustainable development and taken into account in RO-BG CBC Programme. For example, according to the UN Environment Programme (UNEP), millennium development goal 7 (of 8 defined millennium development goals) is the "Ensure environmental sustainability", which is defined as main priority in the CBC Programme (PA 3 – Green Region) having the strategic onjective to ensure the sustainable development in the cross-border area.

7 Environmental Impacts

The likely significant effects from the Programme are analysed at two levels:

- Priority axes, Investment priorities, and specific objectives; and
- Indicative activities.

Detailed analysis of likely significant effects incipient to the Programme is presented in tabular form below. The likely effects by indicative activities are assessed in Tables 7-1 to 7-7 and by specific objectives, investment priorities and priority axes in Tables 7-8 to 7-9 respectively.

Assessment is undertaken for each component/factor of the environment or social sphere (population, human health, material assets) relevant to the applicable item. Where a component/factor is not indicated, no impact is likely to occur.

- Impacts are assessed with regard to the following aspects, as appropriate:
- Positive / negative
- Direct / indirect
- Primary / secondary
- Permanent / temporary
- Short / mid / long term
- Simultaneous (coacting)
- Cumulative (accumulating)

Cumulative and transboundary effects are further assessed in Sections 7.2 and 7.3 respectively.

7.1 Likely significant effects incipient to the programme

Identified likely significant effects are both positive and negative. Positive effects are mainly related to priorities and indicative actions aimed at development of environmental

and social benefits, such as those under SO 3.1 (aimed to improve joint risk management in the cross-border area) and SO 5.1 (aimed to increase cooperation capacity and the efficiency of public administration in a CBC context), Analysis shows that PA3 and PA5 are likely to have entirely positive, long term, permanent and cumulative effect. The same applies for the priorities under SO 2.2 aimed to enhance the sustainable development of ecosystems from the cross-border area.

Under the other investment priorities, the strategic investments and relevant indicative activities are likely to have predominantly positive effect, which is likely again to be long term, permanent and cumulative, except for the activities related in the main case with construction works, which are likely to result in short-term temporary adverse effects.

More details are provided in the following tables.

Table 7-1: Environmental impact assessment of indicative activities under Priority Axis 1, SO 1.1

PA 1: A well connected region IP 7b: Enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure, including multimodal nodes SO 1.1 Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks	Relevant components / factors	Risks, comments	Effect
1. Developing cross-border/ joint action-based solutions, management plans, strategies, feasibility studies, environment impact assessments etc., related to works projects for public infrastructure (waterways, roads etc.) in order to connect secondary and tertiary nodes to TEN-T infrastructure and to reduce transportation time and optimising logistics;	All	While the development of solutions, management plans, strategies, etc will not itself have any effect on environment, its results in the long term will have both positive and negative effects resulting from the relevant construction and utilization of transport infrastructure, as described in the item below.	/
2. Developing co-ordinated concepts, standards and tools on the cross-border level for improved mobility services in the public interest (e.g. for disadvantaged groups, for shrinking regions)	Population Human health	The activity will have positive indirect permanent long term effect on population by improving mobility in the public interest	+
3. Facilitating active cooperation among the providers of traffic and travel information and value added services in order to improve the local public transport in the cross-border area and the connection between twin cities (e.g., harmonisation of timetables, provision of bilingual information on cross-border timetables, operating cross-border transport public services especially between twin cities);	Population Human health	The activity will have positive indirect permanent long term effect on population improving mobility and enhancing traffic safety	+

PA 1: A well connected region IP 7b: Enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure, including multimodal nodes SO 1.1 Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks	Relevant components / factors	Risks, comments	Effect
4. Exchanging experience and knowledge, including raising awareness (trainings, seminars, and workshops) in the field of traffic safety measures in the cross-border area (e.g., improved traffic network configurations, introduction of traffic calming measures, utilisation of roundabouts, speed cameras, safety barriers, and speed bumps, improvement of poor road surfaces to avoid e.g. wet-weather crashes, retro-reflective marking materials).	Population Human health	The activity will have positive direct permanent long term effect on population by enhancing the level of competencies and indirect beneficial impact on traffic safety	+
5. Improving the cross-border secondary and tertiary nodes connections to TEN-T infrastructure (e.g., improve/build bicycle routes, bicycle-sheds, construction and modernization of road infrastructure);	Air / Climate Water Soil Landscape Biodiversity Cultural heritage Waste Material assets Population	Development of transport infrastructure will have negative short term effect related to construction activities which will generate construction waste and air pollutants (mainly dust emissions) and may cause disturbance to soil and water quality or balance, permanent fragmentation of habitats and change of landscape visual perception. Cultural sites might be adversely affected depending on the routing of roads and siting of facilities. The use of transport infrastructure is likely to result in long-term disturbance of species and airborne emissions as a secondary adverse effect. Population on the other hand will be positively effected in the long term with enhancement of material assets,	0/-

PA 1: A well connected region IP 7b: Enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure, including multimodal nodes SO 1.1 Improve the planning, development and coordination of cross border transport systems for better connections to national and TEN-T transport networks	Relevant components / factors	Risks, comments	Effect
		reduction of transportation time and optimising logistics.	
6. Setting up of joint traffic management for smart mobility in the cross-border area (e.g., route guidance, incidents/emergencies detection and management, studies on traffic flows, traffic safety measures, black-spot maps)	Population Human health	The activity will have entirely positive primary and permanent long term effect on population facilitating mobility and enhancing traffic safety.	+

Table 7-2: Environmental impact assessment of indicative activities under Priority Axis 1, SO 1.2

PA 1: A well connected region **IP 7c: Developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility** SO 1.2: Increased transport safety on waterways and maritime transport routes	Relevant components / factors	Risks, comments	Effect
1. Raising awareness regarding the importance of developing and improving environment-friendly transport systems in the cross-border area;	All	The activity will have positive permanent long term effect on all analyzed components/factors.	+
2. Exchanging experience, joint seminars, study visits, surveys and trainings leading to implementation of new methods in order to maintain the navigability of the Danube/Black Sea during winter as well.	All	The activity will have positive permanent long term effect on all analyzed components/factors, provided that the new methods of water management are sustainable.	+
3. Investing (infrastructure and equipment) in improved freight and passenger river and sea transport on cross-border level;	Water Biodiversity Waste Material assets Population	Adverse short term, temporary minor impact is expected from construction activities that generate solid and liquid waste and mechanical disruption of the geological environment. Deterioration of water quality and insignificant changes of water flow are also likely. Biodiversity may suffer both short-term (during construction) and long-term (during utilization) disturbance from the projects. In the long term impact on population will be positive and permanent, with development of material assets.	0/-

PA 1: A well connected region **IP 7c: Developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility** SO 1.2: Increased transport safety on waterways and maritime transport routes	Relevant components / factors	Risks, comments	Effect
4. Developing integrated plans and measures in order to improve the navigation conditions for the common sector of the Danube in the cross-border area (e.g., joint feasibility studies, engineering planning documents, morphological and hydrodynamic studies in establishing the sediment accumulation conditions, etc. on river regulation works, unify the reference system used in Romania and Bulgaria on the Danube and introduce the River Information system)	All	While the development of integrated plans and measures will not itself have any effect on environment, its results in the long term will have both positive and negative effects resulting from the implementation of relevant projects and measures to improve the navigation conditions oft he Danube, which should be subject to further EA/AA.	/
5. Developing and implementing joint co-ordinated strategies, tools and pilot applications to improve the development of multimodal nodes and port services	Air / Climate Water Soil Landscape Biodiversity Cultural heritage Waste Material assets Population	Development of multimodal nodes will have negative short term effect related to construction activities which will generate construction waste and air pollutants (mainly dust emissions) and may cause disturbance to soil and water quality or balance, permanent fragmentation of habitats and change of landscape visual perception. Cultural sites might be adversely effected depending on the siting of facilities. The use of this infrastructure is likely to result in airborne emissions as a secondary adverse effect. Population on the other hand will be positively effected in the long term with enhancement of material assets and services.	**0/-**

Table 7-3: Environmental impact assessment of indicative activities under Priority Axis 2, OS 2.1

PA 2 A green region **IP 6c: Conserving, protecting, promoting and developing natural and cultural heritage** SO 2.1 To improve the protection and sustainable use of natural heritage and resources and cultural heritage	Relevant components / factors	Risks, comments	Effect
1. Preparing studies, strategies, management plans etc. in the field of preservation, development and utilisation of cultural/ natural heritage	Biodiversity Cultural heritage	While the preparation of studies, strategies, plans etc. will not itself have any effect on environment, its results in the long term will have positive effect on cultural/natural heritage.	+
2. Raising awareness regarding the protection, promotion and development of natural and cultural heritage	Biodiversity Cultural heritage	The activity is likely to have positive permanent long term effect on cultural/natural heritage.	+
3. Preserving, promoting and developing the intangible cultural heritage, mainly through cultural events with a cross-border dimension	Cultural heritage Population	The activity is likely to have positive permanent long term effect on cultural heritage due to its preservation, promotion and development, and will indirectly have a beneficial effect on population though increasing the level of culture and knowledge.	+
4. Supporting the promotion and utilisation of cultural/ natural heritage potential by investments in sustainable touristic infrastructure	Air / Climate Water Soil Landscape Biodiversity Cultural heritage	Development of tourism infrastructure will have negative short term effect related to construction activities which will generate construction waste and air pollutants (mainly dust emissions) and may cause disturbance to soil and water quality or balance, permanent fragmentation of habitats, and visual amenities. Disturbance of species is also likely to result from human presence. On the other hand, the activity aims at sustainable infrastructure, which means that long term effects will be positive for	0/+

PA 2 A green region **IP 6c: Conserving, protecting, promoting and developing natural and cultural heritage** SO 2.1 To improve the protection and sustainable use of natural heritage and resources and cultural heritage	Relevant components / factors	Risks, comments	Effect
	Waste Material assets Population Human health	population, human health natural and cultural heritage.	
5. Modernizing/constructing roads to natural and cultural heritage interest points that will be part of a cross-border tourism product	Air / Climate Water Soil Landscape Biodiversity Cultural heritage Waste Material assets Population	Adverse short term, temporary minor impact is expected from construction activities that generate solid and liquid waste and mechanical disruption of the geological environment. Depending on the routing of roads, water bodies might be affected, e.g. in case of riverbed diversion or correction. Such effect would be adverse and is likely to also have a short term effect on water quality. Biodiversity may suffer both short-term (during construction) and long-term (during utilization) disturbance from the projects. In the long term impact on population will be positive and permanent, with development of material assets. Promotion of cultural and natural heritage is likely indirect positive effect.	**0/-**
6. Reconstructing cultural infrastructure, recovery and promotion of cultural and monuments based on relevant strategies/concepts	Cultural heritage Landscape Soil Material assets Population	Reconstruction and recovery of cultural infrastructure is likely to have negative short-term direct temporary effect on environment in relation to construction works. Soil is also likely to be affected on a local scale. Landscape would change in appearance, the value of material assets will be enhanced. Promotion of cultural monuments will have direct positive long-term effect and will bring	**0/+**

PA 2 A green region **IP 6c: Conserving, protecting, promoting and developing natural and cultural heritage** SO 2.1 To improve the protection and sustainable use of natural heritage and resources and cultural heritage	Relevant components / factors	Risks, comments	Effect
		indirect benefits to population.	
7. Developing common tourism products and services based on the natural and cultural heritage and joint promotion	All	The activity is likely to generate anthropogenic pressure on environment unless developed in a sustainable way.	**0/-**
8. Developing coordinated management of natural parks, nature reserves and other protected areas	Biodiversity Landscape Air / Climate	The activity is likely to have entirely positive effect on Nature, which will in turn be beneficial for all other components of environment, as well as people and human health. The effect is expected to be long term, permanent and cumulative.	

Table 7-4: Environmental impact assessment of indicative activities under Priority Axis 2, SO 2.2

PA 2 A green region **IP 6d: Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure** SO 2.2 To enhance the sustainable development of the ecosystems from the cross border area	Relevant components / factors	Risks, comments	Effect
1. Coordinating actions and exchanging information to reinforce the implementation of relevant policies (Water Framework Directive), and biodiversity conservation (Habitat Directive and Birds Directive), organise knowledge transfer, exchange of good practice examples, networking and development of innovations on protecting/preserving ecosystems	Air / Climate Water Soil Landscape Biodiversity Population Human health	The effect is likely to be entirely positive in environmental and social aspect. The effect is expected to be long term, permanent and cumulative.	+
2. Protecting ecosystems using classification, mapping and spatial planning and other structural cooperative measures in the field of nature and landscape protection	Air / Climate Water Soil Landscape Biodiversity Population Human health	The effect is likely to be entirely positive in environmental aspect, wich will in turn benefit the population and human health. Planning could be also targeted to prevent water pollution and develop a comprehensive database for development and implementation of appropriate measures for water protection against pollution. The effect is expected to be long term, permanent and cumulative.	+
3. Preparing and implementing joint researches, studies, strategies, plans related to NATURA 2000 sites	Air / Climate Water Soil	Being under the strategic objective aimed to enhance the sustainable development of the ecosystems from the cross border area and the green infrastructure, the activity is expected to have entirely positive effect in environmental and social aspect. The effect is expected to be long term,	+

PA 2 A green region **IP 6d: Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure** SO 2.2 To enhance the sustainable development of the ecosystems from the cross border area	Relevant components / factors	Risks, comments	Effect
	Landscape Biodiversity Population Human health	permanent and cumulative.	
4. Raising awareness for the general public by acknowledging and promoting the potentials related to NATURA 2000 sites	Air / Climate Water Soil Landscape Biodiversity Population Human health	Awareness-raising and promotion of natural assets is likely to have positive long term, permanent and cumulative primary effect on environmental components and factors and secondary positive long term effect in social aspect.	+
5. Joint designation and management of protected sites and species of the NATURA 2000 network	Air / Climate Water Soil Biodiversity Population Human health	The effect on environment is likely to be entirely positive, long term, permanent and cumulative, and will in turn benefit the population and human health.	+
6. Supporting and promoting cross-border investments regarding the green infrastructure	Air / Climate	Development of green infrastructure will have entirely positive environmental effect, which will in turn bring	+

PA 2 A green region **IP 6d: Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure** SO 2.2 To enhance the sustainable development of the ecosystems from the cross border area	Relevant components / factors	Risks, comments	Effect
(e.g. urban tree canopy, corridors connecting habitats)	Water Soil Landscape Biodiversity Waste Material assets Population Human health	benefits to people and human health, including risk prevention from disasters. Beneficial impact related to rainwater harvesting is also likely to result in better efficiency of water use compared to the current situation. Furthermore, the activities comply with the Flood risk management plans of the Basin Directorates in Bulgaria. The effect is expected to be long term, permanent and cumulative.	
7. Protecting/ preserving/ monitoring the ecosystems, especially in NATURA 2000 sites by purchasing the necessary equipment	Air / Climate Water Soil Landscape Biodiversity Waste Material assets Population Human health	The activity is likely to have entirely positive environmental effect, which will in turn benefit population and human health. The effect is expected to be long term, permanent and cumulative.	+
8. Creating/ reinforcing cross-border coordinated infrastructure that protects/ restores	Air / Climate	The effect on environment is likely to be entirely positive, long term, permanent and cumulative, and will in turn	+

PA 2 A green region **IP 6d: Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure** SO 2.2 To enhance the sustainable development of the ecosystems from the cross border area	Relevant components / factors	Risks, comments	Effect
biodiversity/ soil/ promotes ecosystem services, including through NATURA 2000	Water Soil Landscape Biodiversity Population Human health	benefit the population and human health.	

Table 7-5: Environmental impact assessment of indicative activities under Priority Axis 3, SO 3.1

PA 3 A safe region **IP 5b: Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems** SO 3.1: To improve joint risk management in the cross-border area	Relevant components / factors	Risks, comments	Effect
1. Increasing co-ordination and efficient reactions of the authorities in the emergency situations caused by natural disasters (flood, fire, heat waves, earthquakes, storms), as well as setting up common rules/legislation on deforesting and construction in the areas affected by natural and anthropic hazards	Air / Climate Water Soil Landscape Biodiversity Population Human health	The effect on environment is likely to be entirely positive, long term, permanent and cumulative, and will in turn benefit the population and human health, including risk prevention.	+
2. Setting-up and integrating harmonized standards and systems for better forecasting and managing natural and anthropic hazards in the CBC area (flood, earthquake, fire, storms), including preparing/updating hazard maps and ecosystem-based solutions (for floodplains, wetland preservation, forest management)	Air / Climate Water Soil Biodiversity Population Human health	The effect on environment is likely to be entirely positive, long term, permanent and cumulative, and will in turn benefit the population and human health, including risk prevention.	+
3. Setting up integrated tools for risk prevention and mitigation (including detection, early warning and alert systems, risk mapping and assessment) - creation of joint structures for urgent, unexpected situations (including highly specialized response units/civil protection modules), and development	Air / Climate Water Soil Landscape	Environmental and social effects are likely to be positive, permanent and cumulative in the long term. Minor short term adverse effects are likely to result from the development of small-scale infrastructure, but these will be temporary and limited tot he period of construction. Therefore the overall effect is considered to be positive.	+

PA 3 A safe region **IP 5b: Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems** SO 3.1: To improve joint risk management in the cross-border area	Relevant components / factors	Risks, comments	Effect
of small-scale regional level cross-border infrastructure in the field of emergency preparedness (e.g. transport accidents, disasters etc), including in cases of weather-related risks (such as storms, extreme temperature events, forest fires, droughts, floods) and geophysical risks (such as landslides, earthquakes).	Biodiversity Population Human health		
4. Elaborating joint detailed maps and data bases indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services;	Air / Climate Water Soil Landscape Biodiversity Population Human health	Both environmental and social effects are likely to be positive, long term, permanent and cumulative.	+
5. Exchanges of experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the cross-border area (including training and learning programmes, community-based training initiatives, bilingual maps, information sheets, brochures about natural and anthropic hazards) targeted at specific target groups (children/youth, development planners, emergency managers, local government officials,	Air / Climate Water Soil Landscape Biodiversity Material assets Population	Both environmental and social effects are likely to be positive, long term, permanent and cumulative.	+

PA 3 A safe region **IP 5b: Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems** SO 3.1: To improve joint risk management in the cross-border area	Relevant components / factors	Risks, comments	Effect
etc.)	Human health		
6. Land improving for regions with high and medium hazard risk level (including: sanitation and reforestation of river banks, building flood and coastal defence (dikes, reservoirs), forestation/reforestation of non-permanent vulnerable land to torrential formations, reducing desertification tendencies and high drought risks, replanting floodplain forests)	Air / Climate Water Soil Landscape Biodiversity Waste Material assets Population Human health	Adverse short term, temporary and direct impact is expected from construction activities that generate solid and liquid waste and mechanical disruption of the geological environment. Water bodies are likely to be effected from the construction of dikes, reservoirs and other infrastructure, which however is aimed at reducing the risk of flooding or drought, so the overall effect in the long term tends to be positive in environmental and social aspect.	**0/+**
7. Supporting and promoting cross-border investments into the green infrastructure that helps reduce the risk and mitigate disasters (like systems for rainwater harvesting, reforestation)	Air / Climate Water Soil Landscape Biodiversity Waste Material assets Population	Development of green infrastructure will have entirely positive environmental effect, which will in turn bring benefits to people and human health, including risk prevention from disasters. Beneficial impact related to rainwater harvesting is also likely to result in better efficiency of water use compared to the current situation. Furthermore, the activities comply with the Flood risk management plans of the Basin Directorates in Bulgaria. The effect is expected to be long term, permanent and cumulative.	**+**

PA 3 A safe region **IP 5b: Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems** SO 3.1: To improve joint risk management in the cross-border area	Relevant components / factors	Risks, comments	Effect
	Human health		
8. Measuring/monitoring environmental parameters that are important for early warning and effective mitigation measures (e.g. emission levels, water purity, analysis of soil and water samples etc.), through the purchasing of common equipment and joint assessment of results	Air / Climate Water Soil Landscape Biodiversity Waste Material assets Population Human health	While the activity itself will not have any impact on environment, its results (i.e. the application of purchased equipment for protecting/preserving the ecosystems) are likely to have entirely positive environmental effect, which will in turn benefit population and human health. The effect is expected to be long term, permanent and cumulative.	+

Table 7-6: Environmental impact assessment of indicative activities under Priority Axis 4, SO 4.1

PA 4: A skilled and inclusive region **IP 8i: Promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training** SO 4.1: To encourage the integration of the cross-border area in terms of employment and labour mobility	Relevant components / factors	Risks, comments	Effect
1. anticipating long-term employment opportunities created on both sides of the border by structural shifts in the labour market and developing services in the fields of lifelong guidance and lifelong learning to foster career transitions	Population	Positive direct effect expected by increasing employment opportunities	+
2. developing joint strategies, plans, and studies related to the cross-border mobility identifying key branches that can activate workforce mobility	Population	Positive secondary effect expected by increasing employment opportunities	+
3. collaborating in offering services to employers and establishing partnerships with education institutes and other employment services to organise flexible, preventive and efficient service delivery	Population	Positive direct effect expected by facilitating employment	+
4. providing comprehensive and official information on social security, employment legislation and tax issues both in Romanian and Bulgarian border regions through regular training sessions and courses in relevant legal regulations to decrease the doubts of proper administrative units and employers concerning the manner of interpretation and application of specific	Population	Positive indirect effect expected by facilitating employment	+

PA 4: A skilled and inclusive region **IP 8i: Promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training** SO 4.1: To encourage the integration of the cross-border area in terms of employment and labour mobility	Relevant components / factors	Risks, comments	Effect
regulations			
5. developing and providing joint special programs in vocational training in sectors which lack specific skills	Population	Positive direct effect expected by enhancing competencies and skills which will have as a secondary beneficial effect a general increase in employment	+
6. joint training and support, exchanges of good practices for a better integration in the labour market	Population	Positive direct effect expected by enhancing competencies and skills which will have as a secondary beneficial effect increase of employment opportunities and general positive long-term effect from application of good practices	+
7. raising awareness on employment opportunities throughout the CBC area	Population	Positive direct effect expected by facilitating general increase in employment	+
8. providing special language courses for mobile employees and people looking for work, which would potentially increase their chances to find employment in the eligible area	Population	Positive direct effect expected by enhancing competencies and skills which will have as a secondary beneficial effect increase in employment	+
9. creating/ developing infrastructure directly linked to increase labour mobility	Air / Climate Water Soil Landscape	Development of infrastructure will have negative short term effect related to construction activities which will generate construction waste and air pollutants (mainly dust emissions) and may cause disturbance to soil and water quality or balance, permanent fragmentation of habitats and change of landscape visual perception.	**0/-**

PA 4: A skilled and inclusive region **IP 8i: Promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training** SO 4.1: To encourage the integration of the cross-border area in terms of employment and labour mobility	Relevant components / factors	Risks, comments	Effect
	Biodiversity Cultural heritage Waste Material assets Population	Cultural sites might be adversely effected depending on the routing of roads and siting of facilities. The use of transport infrastructure is likely to result in long-term disturbance of species and airborne emissions as a secondary adverse effect. Population on the other hand will be positively effected in the long term with enhancement of material assets.	
10. developing joint strategies and measures for a better inclusion in the labour market of the disadvantaged categories of population	Population	Positive indirect effect expected by increasing employment opportunities for disadvantaged people	+
11. developing information and advice for cross-border commuters and potential employers by creating and developing joint databases in service of labour mobility	Population	Positive direct effect expected by increasing employment opportunities and labour mobility	+
12. providing integrated support tailored to the needs of jobseekers on both sides of the border while extending service provision to job changers and supporting the inactive back to work	Population	Positive direct effect expected by raising employment rate in the long term	+

PA 4: A skilled and inclusive region **IP 8i: Promoting sustainable and quality employment and supporting labour mobility by integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives, information and advisory services and joint training** SO 4.1: To encourage the integration of the cross-border area in terms of employment and labour mobility	Relevant components / factors	Risks, comments	Effect
13. creating and developing cross border business incubators and virtual incubators for promoting employment of staff from both side of the border (companies based on local assets and local service needs such as innovative heritage tourism, nautical and water tourism and ecotourism products located in the region)	Population Biodiversity Cultural heritage Water	Positive direct effect expected by raising employment rate in the long term. As a secondary effect relevant activities will enhance tourism development, which in turn will put an increased anthropogenic pressure on cultural and natural sites, including water streams. This is a two-way effect of negative impact from human pressure and positive effect from promotion of biodiversity and cultural heritage, which cancels out.	**0/+**

Table 7-7: Environmental impact assessment of indicative activities under Priority Axis 5, SO 5.1

PA 5 An efficient region **IP 11iv: Enhancing institutional capacity of public authorities and stakeholders and efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions** SO 5.1: To increase cooperation capacity and the efficiency of public institutions in a CBC context	**Relevant components / factors**	**Risks, comments**	**Effect**
1. Analyzing and harmonizing the regulatory framework	All	While the activity itself will not have any impact on environment, its results as a secondary effect are likely to be positive, long term, permanent and cumulative both in environmental and social aspect.	+
2. Strengthening local/ regional cross border networks;	All	Both environmental and social effects are likely to be positive, long term, permanent and cumulative.	+
3. Designing implementation strategies, developing and transferring of best-practice models and solutions (including best-practices for the provision of public services through e-government tools and methods), organisational models, decision-making tools and promotion of pilot actions for a better participation of all groups of civil society in the cross-border and local decision and policy making process;	Population	While the activity itself will not have any impact on environment, its results as a secondary effect are likely to be positive, long term, permanent and cumulative both in environmental and social aspect.	+
4. Coordinating policies and investments in the programme area - developing common approaches to common problems - in areas such as social policies, education, health, employment, transport, environment and	Population	While the activity itself will not have any impact on environment, its results as a secondary effect are likely to be positive, long term, permanent and cumulative in social aspect.	+

PA 5 An efficient region **IP 11iv: Enhancing institutional capacity of public authorities and stakeholders and efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions** SO 5.1: To increase cooperation capacity and the efficiency of public institutions in a CBC context	**Relevant components / factors**	**Risks, comments**	**Effect**
customs;			
5. Developing models for institutional co-operation and spatial organization for and between different territorial types;	Population	While the activity itself will not have any impact on environment, its results as a secondary effect are likely to be positive, long term, permanent and cumulative in social aspect.	+
6. Trainings for public authorities' staff to increase capacity in view of implementing EU projects, legislation and managing public investments in a CBC context;	All	While the activity itself will not have any impact on environment, its results as a secondary effect are likely to be positive, long term, permanent and cumulative in both environmental and social aspect.	+
7. Developing cross border models for the design, testing, up-scaling, comparison and evaluation of innovations (tools, processes, actors, organizations and interfaces) in the fields of services of general interest, social services and public administration;	Population	While the activity itself will not have any impact on environment, its results as a secondary effect are likely to be positive, long term, permanent and cumulative in social aspect.	+
8. Up-skilling in the field of CBC policy development and implementation;	All	Both environmental and social effects are likely to be positive, long term, permanent and cumulative, provided that policies to be developed and implemented are sustainable.	+
9. Raising awareness regarding cross-border opportunities (employment, health care,	Population Human health	Entirely positive, long term, permanent and cumulative effects are expected.	+

PA 5 An efficient region **IP 11iv: Enhancing institutional capacity of public authorities and stakeholders and efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions** SO 5.1: To increase cooperation capacity and the efficiency of public institutions in a CBC context	**Relevant components / factors**	**Risks, comments**	**Effect**
education, etc.)			
10. Supporting the modernisation of public services in areas such as customs, social policies, education, health and employment (including purchase of equipment and infrastructure development);	Population Material assets	While the activity itself will not have any impact on environment, its results as a secondary effect are likely to be positive, long term, permanent and cumulative in social aspect.	+
11. Developing common structures, systems and tools that ensure continuity and allow to gradually step up the maturity of cross-border cooperation in the programme area;	All	Both environmental and social effects are likely to be positive, long term, permanent and cumulative.	+
12. Promoting actions to reduce the administrative burden for citizens in a cross border context	Population	The activities are not related to environmental impact, but are likely to have positive, long term, permanent and cumulative effect in social aspect.	+

Table 7-8: Environmental impact assessment of priority axes, investment priorities and strategic objectives (Priority Axes 1-3)

Component / Factor of Environment	Zero Option		PA1				PA2				PA3	
			IP 7b		IP 7c		IP 6c		IP 6d		IP 5b	
			SO 1.1		SO 1.2		SO 2.1		SO 2.2		SO 3.1	
Country	RO	BG	RO	BG	RO	BG	RO	BG	RO	BG	RO	BG
Air / Climate	0/-	0/-	0/-	0/-	0	0	0	0	+	+	+	+
Water	0/-	0/-	0/-	0/-	0/-	0/-	0	0	+	+	0	0/+
Soil	0/-	0/-	0/-	0/-	0	0	0	0	+	+	+	+
Landscape	/	0	0/-	0/-	0	0	0	0	+	+	+	+
Biodiversity	0/-	0/-	0/-	0/-	0/-	0/-	+	+	+	+	+	+
Cultural Heritage	0/-	0/-	0/-	0/-	0	0	+	+	+	+	+	+
Material Assets	0/-	0/-	0/-	0/-	0	0	0	0	+	+	+	+
Waste	0/-	0/-	0/-	0/-	0	0	0	0	+	+	+	+
Population	0/-	0/-	+	+	0	0	+	+	+	+	+	+
Human Health	0/-	0/-	+	+	/	/	+	+	+	+	+	+
Accumulation of impacts	/	/	/	/	0/-	0/-	0	0	+	+	+	+
Coaction of impacts	/	0/-	0/-	0/-	0/-	0/-	0	0	+	+	+	+

Table 7-9: Environmental impact assessment of priority axes, investment priorities and strategic objectives (Priority Axes 4-5)

Component / Factor of Environment	Zero Option		PA4		PA5	
			IP 8i		IP 11vi	
			SO 4.1		SO 5.1	
Country	RO	BG	RO	BG	RO	BG
Air / Climate	0/-	0/-	0/-	0/-	+	+
Water	0/-	0/-	0/-	0/-	+	+
Soil	0/-	0/-	0/-	0/-	+	+
Landscape	/	0	0/-	0/-	+	+
Biodiversity	0/-	0/-	0/-	0/-	+	+
Cultural Heritage	0/-	0/-	0	0/+	+	+
Material Assets	0/-	0/-	0/-	0/-	+	+
Waste	0/-	0/-	0/-	0/-	+	+
Population	0/-	0/-	+	+	+	+
Human Health	0/-	0/-	/	/	+	+
Accumulation of impacts	/	/	/	/	+	+
Coaction of impacts	/	0/-	0/-	0/-	+	+

7.2 Cumulative Effects

No significant negative cumulative impact is expected at the level of Priority axes, Investment priorities and Specific objectives of the Programme.

As regards the indicative activities, **positive** cumulative effect is expected on air/climate, biodiversity, landscape and cultural heritage. Part of the indicative activities under the RO-BG CBC Programme 2014-2020 are aimed at protecting the environment and promoting resource efficiency, enhancing the quality of life of the population and improving the environment in settlements.

This corresponds to the main development strategies and policies for sustainable development at all levels – European (e.g. Europe 2020 Strategy), national (e.g. Regional Development Strategy 2012 – 2022, National strategy for the protection of the biodiversity), regional (e.g. Programme of Measures RBMP of DRBD and BSBD aimed at achieving good qualitative and quantitative status of water), etc. Positive and complex effects on the environment, including on surface water, will be in place during the implementation of the Programme.

Good water management will lead to a strong cumulative positive impact on the quality of water for drinking purposes and prevent the loss of fresh water. In the process of implementation of some activities (PA2 and PA3) positive impact is expected on the hydrology of part of the rivers, which will have a positive cumulative and synergistic character on surface water.

Regardless of the positive influences, the implementation of the Programme may be accompanied by **negative** impacts on the environment. These effects are expected to occur mainly during the construction of the facilities (transport infrastructure, etc. under priority axis PA 1 and PA 4), but also during operation of the facilities, mainly as a result of accidents, damage and / or incidents.

Possible negative consequences of the development of regional infrastructure may have a negative impact on the areas of water protection under Article 119 of the Water Act. These are related to and depend on future projects to be developed under the Programme, their implementation and physical planning of adequate operational plans, etc.

Overlapping negative and positive effects may have cumulative effect on the quantitative and qualitative status of groundwater in one and the same surface or groundwater body at:

- Simultaneous implementation of a number of construction works envisaged under the strategic objectives, investment priorities and specific objectives PA4-IP8i-SO4.1, PA1-IP7b-SO1.1 and PA1-IP7c-SO1.2;
- Simultaneous operation of existing, refurbished and newly constructed facilities (sewage and water supply systems, treatment systems and waste recovery, railways, roads, facilities for underground water, etc.).

The likely cumulative effect on the population and human health is entirely positive.

The forecasts at the level of Priority axes, Investment priorities and the specific objectives do not suggest any significant negative, including cumulative impact concerning the other environmental components and factors.

7.3 Transboundary Impact

Having in mind that the Programme assessed is designated with the subject of ensuring transboundary cooperation, it is not envisaged that significant transboundary effects will occur from its implementation. However, for the applicable activities to be implemented under the Programme, relevant EIA procedures shall be held to ensure there are no transboundary effects.

According to the Protocol on Strategic Environment Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context, an analysis and assessment were performed of the impact of the Programme forecasts on environment and human health, including on other states, in view of the criteria for defining the possible significant impact presented in Annex III of the Protocol.

Table 7-10: Assessment of the likely impact of the Programme in line with Annex 2 to the Protocol on SEA

№	Criteria for determining the likely significant environmental, including health, effects according to Annex III of the Protocol on Strategic Environment Assessment to the Convention on Environmental Impact Assessment in Transboundary Context	Analysis and assessment of the assumed transboundary impact of the Programme in view of the particular criteria
1	The relevance of the plan or programme to the integration of environmental, including health, considerations in particular with a view to promoting sustainable development.	On the grounds of the analysis of the Programme forecasts versus other comparable plans and programmes and in comparison to the national, European and international documents that define the environmental objectives, RO-BG CBC takes into account and integrates environmental, as well as health concerns.
2	The degree to which the plan or programme sets a framework for projects and other activities, either with regard to location, nature, size and operating conditions or by allocating resources.	The priority axes of the Programme define the framework for the development of projects and other activities within the cross-border area of Romania and Bulgaria in order to make the region safe, effective, green, well connected and inclusive.
3	The degree to which the plan or programme influences other plans and programmes including those in a hierarchy	The Programme takes into account, results from, conforms and does not conflict with the national and European strategic, planning and programming documents to which it refers (according to the analysis in Section 2.3 of this Report)
4	Environmental, including health, problems relevant to the plan or programme	The Programme and its priority axes are aimed towards cross-border area development that will increase the living standard of the population thus contributing to better health and social status.
5	The nature of the environmental, including health, effects such as probability, duration, frequency, reversibility, magnitude and extent (such as geographical area or size of population likely to be affected).	Any negative impact on environment and human health is expected predominantly for the construction phases concerning the individual activities that are to be implemented under the Programme. Their duration and frequency would short-termed, of low magnitude and local extent and mainly reversible. The long-term impacts from the CBC Programme are likely to have a positive effect on population and human health.
6	The risks to the environment, including health	No significant risks were forecasted concerning the environment and human health as a result of the implementation of

№	Criteria for determining the likely significant environmental, including health, effects according to Annex III of the Protocol on Strategic Environment Assessment to the Convention on Environmental Impact Assessment in Transboundary Context	Analysis and assessment of the assumed transboundary impact of the Programme in view of the particular criteria
		the Programme.
7	The transboundary nature of effects	The Programme in its essence is of transboundary nature, aimed at the cross-border cooperation. Therefore the effect from its implementation is likely to be positive, long-term and of cross-border area of influence.
8	The degree to which the plan or programme will affect valuable or vulnerable areas including landscapes with a recognized national or international protection status	Vulnerable areas will not be significantly affected as any activities to be implemented within these areas will undergo separate environmental/appropriate assessment procedures.

8 Mitigation Measures

The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme are divided into general and PA-specific measures as listed below.

8.1 General Measures

The general measures apply to any Priority Axis, Investment Priority, Specific Objective or Indicative action related to the Programme as appropriate. These are mainly related to investment proposals and incipient construction activities likely to be implemented under the Programme that should provide for:

- Effective implementation of the measures and conditions contained in the issued Decisions and/or Opinions on EIA, EA and CA concerning the construction stage for the particular eligible activity;
- During construction the beneficiary should ensure effective control on the implementation of the measures that are relevant for the particular activity aimed at limiting the dust and harmful ingredient emissions in the air (irrigation of the construction site, loading, unloading and transportation of the generated construction waste and construction materials according to the applicable measures and requirements set out in article 70 of the Bulgarian Ordinance № 1 on the rates of admissible harmful ingredient emissions (pollutants) released in the air by immovable emission sources), and to report about the manner of implementing the measures correspondingly;
- Construction activities shall be limited only within the projects scope. Use of the existing roads for access should be applied wherever possible;
- Construction materials and waste shall be disposed only at the places designated for this purpose;
- In order to prevent potential significant negative impacts and loss of priority habitats of species in protected areas and sites of the National Ecological Network (including 'Natura 2000 ') coordination and approval of investment intentions for each particular case shall be done in the presence document of procedures held under the provisions of Chapter Six of the Bulgarian EPA and / or the Biological Diversity Act (including for sites in "Natura 2000") and, if necessary, under the Protected Areas Act (for sites in protected areas).
- Plans, programs and investment projects under the CBC Programme "Romania - Bulgaria " for 2014-2020 within or not in the scope of the Annexes to the EPA, and under the provisions of Article 31 of the Bulgarian Biodiversity Act shall be assessed for their compatibility with the object and purpose of the conservation of protected areas and may be approved only after a positive decision / opinion on EIA / SEA / AA in compliance with the recommendations in developed assessments and the conditions, requirements and measures laid down in the decision / opinion.
- Measures for fully compliant with the applicable legislation and effective waste management shall be taken in any waste generation activity under the Programme, including forward-looking, professional and effective solutions for waste utilisation to enhance the cost-effective and environmentally friendly waste management;
- It should be borne in mind that the waste type of energy resource, which if taken forward-looking, professional and effective solutions for its use would be achieved cost-effective and environmentally friendly outcomes in both countries;

- Activities undertaken under the Programme should be consistent with the measures in the management plans of the Black Sea region and the Danube region (RBMP 2010 - 2015) in accordance with the Water Framework Directive 2000/60/EC (WFD) in order to prevent the deterioration of the ecological status of surface waters.
- Strict monitoring of the realization of the EIA requirements and measures for the protection of surface waters.
- Cross-border coordination of the monitoring network performance for integrated management of transboundary surface and groundwater between Bulgaria and Romania in the Dobrodzha region and of the meteorological parameters of the atmosphere;
- Implementation of investment projects and plans envisaging use of or abstraction from surface and groundwater under the RO-BG CBC Programme should be coordinated with the Basin Directorates for eligibility against the environmental objectives and planned measures for achievement of good status of water set out in RBMP, as well as against the purpose of managing the risk of flooding and the measures envisaged in FRMP for the relevant period of activity;
- The requirements of Art. 156f of the Bulgarian Water Act shall be observed for each investment proposal envisaging use and / or water intake from surface or underground water body which could lead to:
    - failure to achieve good ecological status of surface water or good ecological potential of heavily modified water bodies or prevented deterioration as a result of the new amendment to the physical characteristics of a surface water body , and new activities for sustainable development of the population with socio-economic impact;
    - failure to prevent deterioration from very good to good condition of surface water body as a result of new activities for sustainable human development;
    - failure to achieve good groundwater status or prevented deterioration as a result of an amendment to their level;
- The implementation of investment projects and intentions under the Programme concerning any use or abstraction from surface or ground water bodies subject to authorization under the Bulgarian Water Act (WA), such as permits for water intake and use of surface and groundwater body shall be issued subject to the requirements of Chapter Four " Permitting" and Chapter Eight "Conservation of water and water bodies" of the WA and the relevant regulations thereto;
- Design solutions for construction, refurbishment and reconstruction of sites to be build shall be aligned with:
    - The results of completed geological, geotechnical and hydrogeological studies and research;
    - The prohibitions set out in Article 118 of the Bulgarian Water Act and the prohibitions and restrictions in the Ordinance under Article 135, Para 1(6) of the Bulgarian Water Act (to its preparation with the prohibitions and restrictions in Annex 2 to Ordinance № 3/16.10.2000 on the terms and conditions for research, design, validation and operation of sanitary protection zones around water sources and facilities for potable water supply and around sources of mineral waters used for therapeutic, prophylactic, potable and hygiene needs;
- When passing through zones II and III of the sanitary protection zones is necessary, action to prevent and eliminate any negative impacts on the quantitative and

chemical status of water located near intake facilities shall be taken together with the holders of water intake permits;

- In emergencies (earthquakes, floods, accidental spills of oil and other hazardous substances and materials) actions to reduce and mitigate the negative effects stipulated in legislation and regulatory documents shall be taken and services staff directly involved in the fight against disaster shall be immediately alerted.

8.2 Specific Measures (by Priority Axis)

Priority Axis 1 (A well connected region)

- In view of the location of each new road site the plans should be in conformity with the regimes for use of protected areas, protected sites, water protection sites according to article 119a of the Bulgarian Water Act, preservation of the cultural-historical heritage, conformity with the sanitary-protected areas and sites subjected to health protection;
- The noise-protective measures, if necessary, should be included in additional, individual project that contains acoustic, architectural and constructive part;
- Credible measures for collection and treatment of wastewater and discharge points shall be designed in the projects to be developed under the Programme;
- To prevent negative impacts on water bodies and areas of water protection, measures from Section 7 (A brief overview of the program of measures to achieve the objectives of environmental protection) to RBMP of BDDR and BSBD shall be observed.
- In case of any construction in riverbeds, no materials and substances in the construction of structures, facilities, etc. shall be used which can lead to water pollution and damage to ecosystems.

Priority Axis 2 (A green region)

- Tourism development shall be in conformity with the rates of recreational load of the territory; No projects / tourist sites whose implementation will negatively affect water quality due to lack of sewerage system or because of unrepresented decision regarding the treatment and discharge of wastewater generated shall be allowed;
- Prioritized development of ecotourism and other alternative tourism patterns, and most of all tourism related to the preservation of the cultural and natural heritage;
- Project planning for new tourist sites should provide for measures that limit their negative impact on the water quality and take into account the necessity of developing a system for collecting, processing and directing the resulting wastewater flows and implementation of waste management system;
- Development of tourist packages should take into account that activities such as “safari” outings, “offroad” routes, observing rare and endangered animal species are not admissible and they result in significant damages for the environment and the biodiversity.
- When performing activities under IP 6d the ex-ante flood risk assessments developed by the two basin directorates shall be taken into account with view of the areas that are potentially at risk from flooding.
- When planning investment actions the results of the international project "Assessment of the risk of flooding in the Danube river floodplains" (Danube

FLOODRISK), funded and implemented under the Operational Programme "South East Europe 2007-2013 " shall be taken into account.

Priority Axis 3 (A safe region)

- In the case of performing activities in proximity to or within the boundaries of protected sites, protected areas and the historical monuments, the beneficiaries should be required to follow up and report on the manner of respecting the regimes, limitations etc. set out in the management plans/orders for designation of the particular areas and sites;
- The boundaries of the sites for water protection according to article 119a of the Bulgarian Water Act and the measures provided for them in the Basin Management Plans of the two Basin directorates shall be taken into account in the implementation of any activities, including mitigating measures to decrease the impact on the natural habitats that are subject to protection within the sites and related with particular water bodies according to: Measures for mitigating the negative impact on the species that are included in Annex 2 of Directive 92/43/EEC on habitats;
- The implementation of investment projects under the Programme that concern the use or water-taking from surface or groundwater bodies shall be subject to permission regime in conformity with the WA;
- Flood protection measures shall be developed and implemented;
- Any actions implemented under this Priority Axis should take into consideration the provisions for risk assessment of the Basin directorates and the Plans for management of flood risks (after these are verified).

Priority Axis 4 (A skilled and inclusive region)

- In case the mobility is supported through the constructions/ rehabilitation/modernization of transport infrastructure, the mitigation measures established for priority axis 1 shall be observed.
- For the other activities, mitigation measures are not envisaged since no negative effects are likely to result from the implementation of this PA.

Priority Axis 5 (An efficient region)

Mitigation measures are not envisaged since no negative effects are likely to result from the implementation of this PA.

9 Alternatives

The "Zero Option" was compared with the proposed Investment Priorities, as selected for each Priority Axis.

Comparing the "Zero Option" alternative with each of the Programme's Axes, the results show that any of these, including those involving indicative actions/ measures potentially impacting the environment (such as infrastructure building), bring more benefits to the environment (+) than the "Zero Option".

Table 9-1: The "Zero Option" compared with the Priority Axis 1

Component / Factor of Environment	Zero Option		PA1			
			IP 7b		IP 7c	
			SO 1.1		SO 1.2	
Country	RO	BG	RO	BG	RO	BG
Air / Climate	0/-	0/-	0/-	0/-	0	0
Water	0/-	0/-	0/-	0/-	0/-	0/-
Soil	0/-	0/-	0/-	0/-	0	0
Landscape	/	0	0/-	0/-	0	0
Biodiversity	0/-	0/-	0/-	0/-	0/-	0/-
Cultural Heritage	0/-	0/-	0/-	0/-	0	0
Material Assets	0/-	0/-	0/-	0/-	0	0
Waste	0/-	0/-	0/-	0/-	0	0
Population	0/-	0/-	+	+	0	0
Human Health	0/-	0/-	+	+	/	/
Accumulation of impacts	/	/	/	/	0/-	0/-
Coaction of impacts	/	0/-	0/-	0/-	0/-	0/-

Table 9-2: The "Zero Option" compared with the Priority Axis 2

Component / Factor of Environment	Zero Option		PA2			
			IP 6c		IP 6d	
			SO 2.1		SO 2.2	
Country	RO	BG	RO	BG	RO	BG
Air / Climate	0/-	0/-	0	0	+	+
Water	0/-	0/-	0	0	+	+
Soil	0/-	0/-	0	0	+	+
Landscape	/	0	0	0	+	+
Biodiversity	0/-	0/-	+	+	+	+
Cultural Heritage	0/-	0/-	+	+	+	+
Material Assets	0/-	0/-	0	0	+	+
Waste	0/-	0/-	0	0	+	+
Population	0/-	0/-	+	+	+	+
Human Health	0/-	0/-	+	+	+	+
Accumulation of impacts	/	/	0	0	+	+
Coaction of impacts	/	0/-	0	0	+	+

Table 9-3: The "Zero Option" compared with the Priority Axis 3

Component / Factor of Environment	Zero Option		PA3	
			IP 5b	
			SO 3.1	
Country	RO	BG	RO	BG
Air / Climate	0/-	0/-	+	+
Water	0/-	0/-	0	0/+
Soil	0/-	0/-	+	+
Landscape	/	0	+	+
Biodiversity	0/-	0/-	+	+
Cultural Heritage	0/-	0/-	+	+
Material Assets	0/-	0/-	+	+
Waste	0/-	0/-	+	+
Population	0/-	0/-	+	+
Human Health	0/-	0/-	+	+
Accumulation of impacts	/	/	+	+
Coaction of impacts	/	0/-	+	+

Table 9-4: The "Zero Option" compared with the Priority Axis 4

Component / Factor of Environment	Zero Option		PA4 IP 8i SO 4.1	
Country	RO	BG	RO	BG
Air / Climate	0/-	0/-	0/-	0/-
Water	0/-	0/-	0/-	0/-
Soil	0/-	0/-	0/-	0/-
Landscape	/	0	0/-	0/-
Biodiversity	0/-	0/-	0/-	0/-
Cultural Heritage	0/-	0/-	0	0/+
Material Assets	0/-	0/-	0/-	0/-
Waste	0/-	0/-	0/-	0/-
Population	0/-	0/-	+	+
Human Health	0/-	0/-	/	/
Accumulation of impacts	/	/	/	/
Coaction of impacts	/	0/-	0/-	0/-

Table 9-5: The "Zero Option" compared with the Priority Axis 5

Component / Factor of Environment	Zero Option		PA5 IP 11vi SO 5.1	
Country	RO	BG	RO	BG
Air / Climate	0/-	0/-	+	+
Water	0/-	0/-	+	+
Soil	0/-	0/-	+	+
Landscape	/	0	+	+
Biodiversity	0/-	0/-	+	+
Cultural Heritage	0/-	0/-	+	+
Material Assets	0/-	0/-	+	+
Waste	0/-	0/-	+	+
Population	0/-	0/-	+	+
Human Health	0/-	0/-	+	+
Accumulation of impacts	/	/	+	+
Coaction of impacts	/	0/-	+	+

10 Difficulties

The main difficulties in SEA analysis encountered upon in the SEA drafting were related to lack of enough available information for the specific counties (RO) and districts (BG) of concern.

11 Monitoring

According to the SEA Directive Article 10, significant environmental effects of implementation of plans and programmes shall be monitored in order to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action.

The proposed monitoring system was developed on the basis of the relevant environmental objectives. These objectives represent those environmental areas and themes, which can be substantially influenced by the implementation of the programme.

Therefore, the impact on the environment generated by the implementation of the programme will be assessed depending on extent to which the programme will influence the achievement of these objectives.

The following indicators will be used:

Table 11-1: Indicators for monitoring the environmental impacts

Indicators
• Number of management plans implemented
• Number of projects improving of air quality
• Number of projects affecting cultural heritage
• No of projects having a positive impact on landscape
• No of projects having a negative impact on landscape
• Number of projects creating a modal shift from road transport to waterways
• Number of projects focusing on road transport infrastructure
• Number of projects focusing on river transport infrastructure
• Number of projects focusing on river bank rehabilitation
• River banks rehabilitated (km)
• Number of people benefiting from flood protection measures
• Land take as a result of building road transport infrastructure (km^2)

Indicators
• No. of initiatives (trainings, education schemes, websites, agreements, networks, job-fairs etc.) that activate workforce mobility in the cross border area
• Number of supported cross border mechanisms (agreement, networks, regulations, studies, policies, strategies, information exchange, tools) to enhance cooperation capacity

The relevant actors involved in monitoring of environmental factors and effects include: final beneficiaries of projects financed under the OP, the Joint Secretariat National Authority and the Managing Authority for the OP.

The monitoring indicators will be used to monitor environmental effects based on the characteristics of the projects selected for funding. The environmental criteria used within the project evaluation and selection will be further used for the monitoring of the project. By monitoring and summarising the single projects´ monitoring results, it will then be possible to estimate the overall environmental effect on the relevant environmental issues.

Monitoring data on the environmental effects of the OP should be provided by the project owners together with the final project reports at the end of the projects implementation. Managing Authority and the Joint Secretariat should request the data at the end of each project implemented as a minimum.

The data on the above-mentioned indicators should be provided by the monitoring systems of the projects that followed EIA procedure (for which the beneficiaries have the responsibility to monitor the intensity of the effects generated by the project on the affected environmental components).

The data will be collected annually, will be submitted for analysis to the Ministry of Environment and Climate Change and will be included in the annual report presented to the Monitoring Committee.

The monitoring tools established by the programme management structures shall be used when collecting the environmental data. In addition, relevant statistical information (State Environmental Report, Romanian Statistical Yearbook) will be used whenever relevant. The relevant ex-post report will be used as well.

The data needed to carry out this task will be collected from the monitoring of the above-mentioned indicators as well as from the Environmental Impact Assessments carried out during the programme implementation and when it’s necessary from the authorities holding the relevant environmental information (such as the competent environmental protection authorities, public health authorities, etc.)

Also, when preparing the terms of reference for the interim evaluations a specific requirement shall be included, namely to propose corrective measures if the evaluation shows unexpected adverse environmental effects.

The projects financed through this OP will fully comply with the EU and national environmental legislation (i.e. EIA/SEA, Habitats and Birds Directives, Water Framework Directive).

Table 11.2 Proposed monitoring indicators

Relevant environmental objectives	Environmental factors	Proposed indicators	Information source	Responsibility
Rational correlation of the development objectives, investment programmes, including at the inter-sectoral and regional level, with the potential and supporting capacity of the natural capital	Air / Climate Water Soil Landscape Biodiversity	• Number of management plans implemented • Number of projects improving of air quality • No of projects having a positive impact on landscape • No of projects having a negative impact on landscape • Number of projects creating a modal shift from road transport to waterways • Number of projects focusing on road transport infrastructure • Number of projects focusing on river transport infrastructure	Progress reports – at project level Internal monitoring records (at Joint Secretariat, National Authority and Management Authority level) Programme evaluation reports Relevant studies	Beneficiaries, Joint Secretariat, National Authority, Management Authority
Enhanced modernisation of the educational and professional training, health and social service systems, taking into account the demographic developments and their impact on the labour market	Population Human Health	• No. of initiatives (trainings, education schemes, websites, agreements, networks, job-fairs etc.) that activate workforce mobility in the cross border area • Number of supported cross border mechanisms	Progress reports – at project level Internal monitoring records (at Joint Secretariat, National Authority and Management Authority level)	

Relevant environmental objectives	Environmental factors	Proposed indicators	Information source	Responsibility
		(agreement, networks, regulations, studies, policies, strategies, information exchange, tools) to enhance cooperation capacity	Programme evaluation reports Relevant studies	
Generalised use of the existing best technologies from an economic and ecological perspective, in investment decisions involving public funds; firm introduction of eco-efficiency criteria in all the production or service activities	Air / Climate Water Soil Waste Population Human Health	• Number of management plans implemented • Number of projects improving of air quality • Number of projects creating a modal shift from road transport to waterways • Number of projects focusing on road transport infrastructure • Number of projects focusing on river transport infrastructure • Land take as a result of building road transport infrastructure (km2)	Progress reports – at project level Internal monitoring records (at Joint Secretariat, National Authority and Management Authority level) Programme evaluation reports Relevant studies	
Anticipating the effects of climate change and preparing timely contingency plans for crisis situations generated by natural or anthropogenic events	Air / Climate Water Soil Landscape Biodiversity	• Number of management plans implemented • Number of projects improving of air quality • Number of projects affecting cultural heritage • No of projects having a	Progress reports – at project level Internal monitoring records (at Joint Secretariat, National Authority	

Relevant environmental objectives	Environmental factors	Proposed indicators	Information source	Responsibility
	Population Human Health	positive impact on landscape • No of projects having a negative impact on landscape • Number of projects creating a modal shift from road transport to waterways • Number of projects focusing on road transport infrastructure • Number of projects focusing on river transport infrastructure • Number of projects focusing on river bank rehabilitation • River banks rehabilitated (km) • Number of people benefiting from flood protection measures	and Management Authority level) Programme evaluation reports Relevant studies	
Ensuring food safety and security by capitalising on Romania's competitive advantages, without giving up on the requirements to maintain soil fertility, preserve the biodiversity and protect the	Water Soil Landscape Biodiversity Population Human Health	• Number of projects focusing on river bank rehabilitation • River banks rehabilitated (km) • Land take as a result of building road transport infrastructure (km2)	Progress reports – at project level Internal monitoring records (at Joint Secretariat, National Authority and Management	

Relevant environmental objectives	Environmental factors	Proposed indicators	Information source	Responsibility
environment		• No of projects having a positive impact on landscape • No of projects having a negative impact on landscape	Authority level) Programme evaluation reports Relevant studies	
Identifying additional funding resources for the implementation of large scale projects and programmes, especially in infrastructure, energy, environmental protection, food safety, education, health and social services	Air / Climate Water Soil Landscape Biodiversity Cultural Heritage Material Assets Waste Population Human Health	• Number of management plans implemented • Number of projects improving of air quality • Number of projects affecting cultural heritage • No of projects having a positive impact on landscape • No of projects having a negative impact on landscape • Number of projects creating a modal shift from road transport to waterways • Number of projects focusing on road transport infrastructure • Number of projects focusing on river transport infrastructure • Number of projects	Progress reports – at project level Internal monitoring records (at Joint Secretariat, National Authority and Management Authority level) Programme evaluation reports Relevant studies	

Relevant environmental objectives	Environmental factors	Proposed indicators	Information source	Responsibility
		focusing on river bank rehabilitation • River banks rehabilitated (km) • Number of people benefiting from flood protection measures • Land take as a result of building road transport infrastructure (km2) • No. of initiatives (trainings, education schemes, websites, agreements, networks, job-fairs etc.) that activate workforce mobility in the cross border area • Number of supported cross border mechanisms (agreement, networks, regulations, studies, policies, strategies, information exchange, tools) to enhance cooperation capacity		
Protection and enhancement of the national cultural and natural heritage; harmonisation with the	Landscape Biodiversity Cultural Heritage Material Assets	• Number of management plans implemented • Number of projects affecting cultural heritage • No of projects having a	Progress reports – at project level Internal monitoring records (at Joint Secretariat,	

Relevant environmental objectives	Environmental factors	Proposed indicators	Information source	Responsibility
European norms and standards for the quality of life	Waste Population Human Health	positive impact on landscape • No of projects having a negative impact on landscape • No. of initiatives (trainings, education schemes, websites, agreements, networks, job-fairs etc.) that activate workforce mobility in the cross border area • Number of supported cross border mechanisms (agreement, networks, regulations, studies, policies, strategies, information exchange, tools) to enhance cooperation capacity	National Authority and Management Authority level) Programme evaluation reports Relevant studies	

12 Conclusion

Following the environmental review of RO-BG CBC 2014-2020 on the grounds of the analysis and assessment of the potential impacts of the activities foreseen under the relevant priority axes, the conclusion of the team of independent experts is that in the Programme will result in comprehensive positive impact on environment and human health at national and cross-border level as the majority of indicative actions either directly or indirectly address the improvement of the environmental condition, the quality of life and human health.

APPENDICES

Non-technical Summary

Appendix 1

References and sources of information for the methods of environmental impact assessment

Appendix 2

List of SEA team with signatures

Appendix 3

Declarations pursuant to Article 16(1) of the Bulgarian EA Ordinance

Appendix 4

List of consultations, statements and way of their integration in the EA Report