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## Romania – Ukraine Joint Operational Programme 2014 ÷ 2020

### Strategic Environmental Assessment ENVIRONMENTAL REPORT

May 2015

# Romania - Ukraine Joint Operational Programme

2014 ÷ 2020

## Strategic Environmental Assessment

### ENVIRONMENTAL REPORT

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## ABREVIETIONS

MRDPA	Ministry of Regional Development and Public Administration
MMAF	Ministry of Environment, Water and Forest
MFE	Ministry of European Funds
MAE	Ministry of Foreign Affairs
CE	European Commission
UE	European Union
SM	Member State
ENI	European Neighbourhood Instrument
ENPI	European Neighbourhood and Partnership Instrument
CBC	Cross Border Cooperation
CCP	Common Committee Programming
MA	Management Authority of the Programme
SME	Small and Medium Enterprises
PA	Partnership Agreement with EU
NRP	National Reform Programme
TO	Thematic Objective
SWOT	Strengths, Weaknesses, Opportunities, Threats Analysis
Ro	Romania
Md	Republic of Moldova
Ua	Ukraine
WG	Working Group
LPI	Large Infrastructure Project
PIB	Gross Domestic Product
NSCC	National Strategy on Climate Change 2013 ÷ 2020
NFRMS	National Flood Risk Management Strategy on medium and long term (2010 ÷ 2035)
PPPMD	Plans for prevention, protection and mitigation of damages caused by floods
F	

## 1. INTRODUCTION

The Strategic Environmental Assessment is carried out based on the requirements of the SEA Directive (European Council Directive no. 2001/42/EC on the assessment of effects of certain plans and programmes on the environment). The main elements recommended to be followed in such environmental assessments by law or guidelines are as follows:

- Description of key environmental aspects to be addressed;
- Description of the reference range of environmental values to be submitted for analysis in the SEA report;
- Ways to identify the environmental impact of the plan/programme implementation;
- Assessment of capacities to address the challenges, risks and their prevention on the environment.

The methodology used in the strategic environmental assessment includes the requirements of the above-mentioned documents and of the following methodological recommendations:

**"Guidance Note on Strategic Environment Assessment in the context of ENI CBC" developed by INTERACT ENPI for the specific situation of Joint Operational Programmes and approved by the Directorate General for Development and Cooperation - Europe Aid (DG DEVCO) and the Directorate General for Environment (DG ENV).**

Considering the extent to which the Joint Operational *Programme "Romania - Ukraine" 2014 ÷ 2020* provides a framework for future projects and other activities, development of its first version will be notified to the environmental competent authorities, for estimation of its impact on environmental factors. In this procedure it is necessary **to finalize the Programme in parallel with developing Environmental Report.**

**The Environmental Report** is a part of the **Programme** documentation that identifies, describes and evaluates the likely significant environmental effects of its implementation and reasonable alternatives, taking into account the objectives and the related geographical area.

The Environmental Report is drafted based on the program version available in April 2015.

The development of the Strategic Environmental Assessment procedure is mandatory, the European Commission **requiring the official opinion** on environmental assessment, for the approval of the Programme *"Romania - Ukraine" 2014 ÷ 2020* under national and European legislation in force.

In accordance with the SEA Directive (2001/42/EC), environmental assessment involves the following steps:

- Identification of environmental authorities of all countries involved (Romania, Ukraine);
- The decision on whether SEA is required or not,

and if yes:

- Determining the SEA scope and development of the Environmental Report;

- Consultation of environmental authorities and the public;
- Inclusion of findings and results of consultations in the Environmental Report;
- Adequate monitoring of recommendations;
- Notification of the authorities consulted and public on the programme approval.

**Environmental assessment is mandatory** when programmes include projects covered by the EIA Directive in the sectors covered by Article 3.2 (energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning, land use, etc) and projects with significant environmental impact in other sectors, under Article 3.4.

**ENI CBC Programmes with Large Infrastructure Projects should perform a SEA procedure.**

Development of the **Environmental Report** involves pursuing the following relevant steps:

- Review of the **environmental status at national level** (geographical areas specified), relevant aspects for the Ro-Ua Programme, respectively, taking into account existing data and information;
- Characterize the current state of the environment, and identify a set of **environmental matters and environmental issues** that are relevant to the concerned area and that can be addressed directly through the cooperation programme;
- For the environmental matters and environmental issues identified, there will be set **relevant environmental objectives** which should be addressed by the Ro-Ua Programme;
- The possible development of the environmental status (of those environmental aspects identified), while not implementing the objectives of the Ro-Ua Programme, **(Alternative "0")**;
- **Assessment the environmental effects** of implementing the Ro-Ua Programme, respectively, by analysing how its objectives and proposed measures contribute to achieving the relevant environmental objectives;
- Development a **cumulative assessment** that can provide an overview of possible future developments of the environmental status in case of implementation of the Ro-Ua Programme;
- A list of indicators proposed for monitoring the Programme effects on the environment will be provided;
- **Recommendations** on the prevention, reduction and offset of any potential adverse environmental impacts, associated with implementation of the Ro-Ua Programme will be drafted.

## **2. Summary of the content, MAIN OBJECTIVES OF THE PROGRAMME AND RELATIONSHIP WITH OTHER RELEVANT PLANS AND PROGRAMMES**

### **2.1 Baseline information**

During 2014 ÷ 2020, the European Union will finance through the European Neighbourhood Instrument (ENI), a bilateral cross-border cooperation programme (CBC) between Romania - Ukraine, as a continuation of the Joint Operational Programme "Romania – Ukraine - Republic of Moldova 2007÷2013".

The main EU regulations in force for the development of the cross-border cooperation programmes financed by ENI are as follows:

- Regulation (EU) no. 232/2014 of the European Parliament and of the Council establishing a European Neighbourhood Instrument;
- Regulation (EU) no. 236/2014 of the European Parliament and of the Council of 11 March 2014 laying down common rules and procedures for the implementation of EU's instruments financing external action;
- Commission Implementing Regulation (EU) no. 897/2014 of 18 August 2014, laying down specific provisions for the implementation of cross-border cooperation programmes financed under Regulation (EU) No 232/2014 of the European Parliament and the Council establishing a European Neighbourhood Instrument;
- Programming Document of the EU support for cross-border cooperation (2014÷2020);
- Commission Implementing Regulation C(2014) 7172 final of 08.10.2014 adopting a programming document for European Union support to ENI Cross-Border Cooperation for the period 2014-2020.

Cross border cooperation at the external borders of the EU continues to represent a top priority for the European Union during the 2014 ÷ 2020 programming period. The ENI CBC aims to create "*an area of shared prosperity and good neighbourliness between EU Member States and their neighbours*". To this purpose the ENI has three strategic objectives:

- (A) promote economic and social development in regions on both sides of common borders;
- (B) address common challenges in environment, public health, safety and security;
- (C) promotion of better conditions and modalities for ensuring the mobility of persons, goods and capital.

Crossborder Cooperation Programme has to address at least one of the strategic objectives; in order to generate a significant impact for the border area each programme has to focus its strategic intervention in the area on a maximum of four thematic objectives from the following:

1. Business and SME development (Strategic objective: A);

2. Support to education, research, technological development and innovation (Strategic objective: A);
3. Promotion of local culture and preservation of historical heritage (Strategic objective: A);
4. Promotion of social inclusion and fight against poverty (Strategic objectives: A, B, C);
5. Support to local & regional good governance (Strategic objectives: A, B, C);
6. Environmental protection, climate change adaptation (Strategic objective: B);
7. Improvement of accessibility to the regions, development of transport and communication networks and systems (Strategic objective: C);
8. Common challenges in the field of safety and security (Strategic objective: B);
9. Promotion of energy cooperation (Strategic objective: B);
10. Promotion of border management and border security, migration and mobility management (Strategic objective: C);

Regulation no. 232/2014 establishing a European Neighbourhood Instrument (ENI) and Regulation no 897/2014 laying down specific provisions for the implementation of cross-border cooperation programmes, say that the programme partners have to cooperate in order to identify the needs of the programme area and select those thematic objectives and priorities, that are most relevant to the border region.

Within this context, the partner countries nominated the Ministry of Regional Development and Public Administration from Romania as Managing Authority and created the Joint Programming Committee (JPC) as decisional body for the programming process. Additionally, two working groups were created, one for the identification of Large Infrastructure Projects and one for the Management and Control structures.

The Joint Operational Programme Romania - Ukraine provides the legal framework for the financing of cross-border cooperation projects between the two countries during 2014 ÷ 2020.

The methodology for the elaboration of the Romania-Ukraine Joint Operational Programme included stakeholder consultations, socio economic analysis (SWOT) and multi criteria analysis, as well as a review of the lessons learnt from the Joint Operational Programme Romania-Ukraine-Republic of Moldova 2007 ÷ 2013.

The main steps of the development of the Ro-Ua Programme were:

- Socio-economic and SWOT analyses;
- Preliminary consultations: interviews, focus groups, online survey;
- Coherence analysis and multi-criteria analysis;
- Public consultations on the first JOP draft.

The Joint Programming Committee approved 4 thematic objectives (TO) for the Romania-Ukraine Programme 2014-2020, together with their subsequent priorities as follows:

***TO2 - Support to education, research, technological development and innovation:***

- **Objective 1:** Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level:
  - *Priority 1.1* - Institutional cooperation in the educational field for increasing *education and quality of education*;
  - *Priority 1.2* - Promotion and support to research and innovation.
- **TO 3 - Promotion of the local culture and preservation of historical heritage**
  - **Objective 2:** Preservation of the cultural and historical heritage in the eligible area, support the developing of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.
    - *Priority 2.1* – Preservation and promotion of the cultural and historical heritage
- **TO 7 - Improvement of accessibility to the regions, development of transport and common networks and systems:**
  - **Objective 3:** Improve public transport services, infrastructure and ITC cooperation and networking
    - *Priority 3.1* - Development of cross border transport and ITC infrastructure
- **TO 8 - Common challenges in the field of safety and security**
  - **Objective 4:** Addressing common challenges in cross-border security, access to health, Managing of natural and anthropic risks and emergency situations through joint projects
    - *Priority 4.1* - Support to the development of health services and access to health;
    - *Priority 4.2* – Support to joint activities for the prevention of natural and man-made disasters as well as joint activities during emergency situations;
    - *Priority 4.3* - Prevention and fight against organized crime and police cooperation

The approval of the four thematic objectives was done by the Joint Programme Committee, which agreed also on the preliminary list of Large Infrastructure Projects. It remains to identify the projects with the best value for the eligible area.

During 2014 ÷ 2020, European Union will finance the Joint Operational Programme Romania - Ukraine, through the European Neighbourhood Instrument (ENI).

The Programme is addressing the area situated at the border between Romania and Ukraine, and contributes to the achievement of the overall ENI objective of “*progress towards an area of shared prosperity and good neighbourliness between Member states and their neighbours*”.

## 2.2 The Programme Area

The Joint Operational Programme Romania - Ukraine 2014 ÷ 2020 would cover the following area, established by ENI CBC:

**Romania: 5 counties:** *Satu Mare, Maramureș, Botoșani, Suceava, Tulcea;*

**Ukraine: 4 oblasts:** *Ivano-Frankivsk, Zakarpatska, Chernivtsi, Odessa.*

The core regions encompass a total of 100,860 km<sup>2</sup>, out of which:

- Romanian territory: 32,760 km<sup>2</sup> (Suceava 8,553 km<sup>2</sup>, Botosani 4,986 km<sup>2</sup>, Satu - Mare 4,418 km<sup>2</sup>, Maramures 6.304 km<sup>2</sup>, Tulcea 8,499 km<sup>2</sup>);
- Ukrainian territory: 68,100 km<sup>2</sup> (Zakarpatska 12,800 km<sup>2</sup>, Ivano-Frankivsk 13,900 km<sup>2</sup>, Odesa 33,300 km<sup>2</sup>, Chernivtsi 8,100 km<sup>2</sup>).

In terms of proportionality, the Ukrainian eligible area is more than double in size compared to the Romanian territory.

The border shared by the two countries represents part of the current virtual border of the European Union, as the Romanian regions of North-West, North-East, and South-East are the outermost border regions of the EU in the region.

### ***Romania-Ukraine border***

The total length of the border is of 649.4 km.

The border is varied in terms of type: land – 273.8 km, river – 343.9 km, sea – 31.7 km. Furthermore, the Southern part of the Romanian-Ukrainian border divides the shared biosphere of the Danube Delta. The two countries share six land border crossing points, accessible by car and train:

- Halmeu – Diakove rail and auto;
- Câmpulung la Tisa – Teresva rail, but not operational;
- Sighetu - Marmației – Solotvino auto;
- Valea Vișeuului – Dilove rail;
- Vicșani – Vadul Siret rail, but not operational;
- Siret – Porubne auto.



The programme area sums up a total of approximately 8,022,042 inhabitants. Of the total *population*, 26% (2,083,538 inhabitants) reside on the Romanian side of the border and 74% (5,938,504 inhabitants) on the Ukrainian side.

The core eligible area concentrates a large population with ages between 15 and 64 years. Territorial comparisons show that the four Ukrainian oblasts have a positive (but sensitive) natural increase of 0.6‰, while the Romanian counties have a negative rate of -3.78‰.

The health infrastructures are limited in development especially in the rural areas. The level of development and the capacity of the health units are below national averages across all of the core eligible area. In Romania, male life expectancy is 71 years and female life expectancy is 78 years, while in Ukraine the life expectancy for males is of 66 years and 76 years for females. Compared to previous years life expectancy is on a rise, but it is still below European averages.

The core eligible area's *active population* represents 45.09% of the total population. Out this total, 93.83% of the active population is employed, while 6.15% is unemployed. The largest employed population by sector is employed in the agricultural sector, and represents 25.35% of the total employed population. Territorial differences are however significant, as in Romania 42.58% of the employed population works in this sector, while in Ukraine only 20.35%. In the latter case, this still represents the largest sector by employed population.

The average gross monthly earnings in the area are some of the lowest at national and European levels. On average the gross monthly earnings reached in 2012 €360 in Romania and €241 in Ukraine. The agricultural sector is the largest sector in terms of

employed population; however, earnings in this sector are some of the lowest, registering values below the averages.

**Competitiveness** is rather low in the core eligible area. The major causes behind this are: the predominance of agriculture and industry as the main economic activity and the lack diverse economic activities; the low level of investments in Research & Development and its underuse in industrial and technological activities, reducing productivity; low accessibility due to the poor quality of the transport infrastructure; the underdeveloped and deteriorating public utilities infrastructure; and the low ICT penetration rates at territorial level.

In terms of **infrastructure**, the core eligible area has a poorly developed transport infrastructure, which cannot insure accessibility and connectivity at international standards, resulting in an isolation effect.

Intermodal transport is still limited, as the naval and air links are underdeveloped, in spite of the gain potential given by the Tulcea-Odessa region. The road and rail infrastructures are sufficiently dense if compared to their national figures. However, quality wise the infrastructure still leaves room for improvement. Local roads lack investments due to limited funding opportunities and bureaucracy, compared to national and European roads, which receive significantly more attention.

The state of the **public utilities and services infrastructure** serving the urban and rural localities in the area raises a number of issues. Even if significant percentages of the localities in the core eligible area are connected to these networks, their quality is rather poor.

A large portion of these infrastructures are developed before 1989 and in general lack serious investments since then, especially in the case of rural localities. This creates problems in terms of environmental protection, as this leads to the evacuation of undertreated or untreated waters and poorly managed waste, which combined have a negative impact on soil and water quality. The analysis shows that the core eligible area is a big consumer of energy, mostly due to industrial activities and energy production with the purpose of heating.

The Ukrainian oblasts have significantly higher levels of energy use compared to the Romanian counties. Furthermore, the Ukrainian oblasts are large consumers of coal and gas as fuels, greatly increasing particle and greenhouse emissions in the area.

The area benefits from over 1000 natural protected areas of national and international importance and numerous historic sites. The increasing number of tourists in the last two years confirms that the attractiveness of this area is one of international level.

#### *Major social, economic and cultural centres*

The programme decided to make use of the art. 8 (3) of the *Regulation no 232/2014 of the European Parliament and of the council establishing a European Neighbourhood Instrument* provisions, and included two major social, economic and cultural centres Bucharest (RO) and Kiev (UA) in the programme area.

A **flexibility rule** set in accordance to point (b) of article 39(2), and article 45(4) of Commission Regulation 897/2014 **may** be used outside the programme area (meaning outside core regions and major social, economic and cultural centres).

Maximum 10 % of the Programme allocation may be used outside the programme area or by the beneficiaries located outside the programme area.



## 2.3 The Programme Description

***The general objective of the Romania-Ukraine Joint Operational Programme is to enhance the economic development and to improve the quality of life of the people in the border area through joint investments in economic development, culture, infrastructure and health.***

The Ro-Ua Programme was concluded with the selection of 4 specific thematic objectives; the activities and the beneficiaries are presented below.

### TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT & INNOVATION

***Objective 1: Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level***

**Priority 1.1 – Institutional cooperation in the educational field for increasing access to education and quality of education**

#### **Indicative activities:**

- Joint planning and joint development of educational strategies;

- Exchanges of experience, teacher exchanges, transfer of good practices between institutions from both sides of the border for increasing the effectiveness of education through the diversification of professional training programs for employees in the education system in areas such as:
  - School development, school management, developing the relation between schools and communities;
    - Developing and applying innovative educational methods, for increasing teaching skills to facilitate and motivate students to perform;
- Developing specific joint programs of entrepreneurship education, programmes that stimulate creativity, innovation and active citizenship;
- Rehabilitation/modernization/ extension/ equipment procurement for the educational infrastructure to provide the necessary material preconditions of a quality educational process and increase the participation in the educational processes;
- Development and implementation of partnerships between education institutions from both sides of the border to:
  - Prevent and correct early school leaving phenomenon through integrated programs (including awareness campaigns) for prevention of school dropout, encourage school attendance and reintegration of those who have left school early;
  - Develop after school programs and extra-curricular activities;
- Development and implementation of joint actions in support of disadvantaged groups, e.g\*.:
  - Integrated support actions addressing children and youth with parents living abroad (which may include inter alia guidance, counselling, after school programmes, educational and cultural activities);
  - Support actions meant to facilitate the social and work integration of people (children, youth and adults) with disabilities\*
- Joint support actions for youth for the prevention of drug use, human trafficking, alcohol abuse, etc.\*\*
- Development and implementation of cross border actions for enhancing/improving/facilitating job qualifications and competences.\*\*

\* *Only activities that do not provide an economical advantage for the beneficiary will be supported.*

\*\* *These activities should be carried out in the framework of educational campaigns and in cooperation with education institutions in order to be eligible.*

### **Indicative Beneficiaries:**

- ❖ National/regional/local public administration and other public institutions;
- ❖ Education institutions;
- ❖ NGOs; / professional teachers associations; other relevant associations;
- ❖ Health organizations acting to prevent and cope with alcohol and drug abuse\*\*

\*\* *These types of beneficiaries may only be eligible for this priority when work in partnership/association with education institutions.*

## **Priority 1.2 – Promotion and support to research and innovation**

### ***Indicative activities:***

- Development of partnerships/networking between universities for joint development of theoretical research
- Joint research actions and studies (including related equipment procurement) in the field of environment (climate change challenges, preservation of biodiversity, renewable energy and resource efficiency, etc.).
- Promotion and support for research and innovation through rehabilitation/modernization/extension of the specific infrastructure including the procurement of related equipment.

### ***Indicative Beneficiaries:***

- ❖ Universities;
- ❖ Research institutes/organizations/NGOs;
- ❖ National /regional/public administration and other public institutions;
- ❖ Professional/ other relevant associations.

## **TO3- PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE**

**Objective 2:** *Preservation of the cultural and historical heritage in the eligible area, support the developing of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.* **Priority 2.1 – Preservation and promotion of the cultural and historical heritage**

### ***Indicative activities:***

- Restoration, conservation, consolidation, protection, security of cultural and historical monuments (including the corresponding access roads), museums, objects and art collections and their joint promotion based on relevant cross-border strategies/concepts;
- Preservation, security, and joint valorisation of cultural and historical monuments and objects;
- Cultural institutions networks aiming at the promotion of the cultural and historical heritage
- Support for specific and traditional craftsman activities, important for preserving local culture and identity.

- Promotion of specific and traditional activities in the eligible area (including cross border cultural events);
- Preserving, promoting and developing the cultural and historical heritage, mainly through cultural events with a cross-border dimension;
- Valorisation of the historical and cultural heritage through developing joint promotion strategies, common tourism products and services.

**Indicative Beneficiaries:**

- ❖ Museums, cultural/religious/higher education institutions;
- ❖ National /regional/ local public authorities and other public institutions;
- ❖ NGOs, cultural and tourism associations;
- ❖ Local business associations in the domain of traditional and craftsmen activities;
- ❖ International organizations.

**TO7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS**

**Objective 3:** *Improve public transport services, infrastructure and ITC cooperation and networking*

**Priority 3.1 – Development of cross border transport infrastructure and ICT tools****Indicative activities:**

- Reconstruction, rehabilitation, modernization of cross-border transport systems
- Development of environmentally friendly (carbon-proofed) cross-border transport initiatives and innovative solutions ;
- Improvements of multimode transport (road/water ) facilities of cross-border interest;
- Reconstruction, rehabilitation, widening of cross-border (segments of) roads connecting settlements alongside the border with main road, which leads to the border;
- Improvement/restoration/construction of (segments of) access roads to centres of cross-border interest;
- Elaboration of joint strategies/policies/plans for improving the cross-border transport infrastructure;
- Development of cross-border connections, information and integrated communications network and services;
- Upgrading existing facilities to enable linkages between communities and public services which promote co-operation on a cross-border and wider international basis;

**Beneficiari orientative:**

- ❖ National /regional/ public administration and other public institutions;
- ❖ State owned companies administrating transport and communication infrastructure.

## **TO8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY**

**Objective 4:** *Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects*

### **Priority 4.1 - Support to the development of health services and access to health**

#### **Indicative activities:**

- Joint activities meant to enhance the access to health in the border area through construction / rehabilitation / modernization of infrastructure of public health services (including through the use of renewable energy etc.);
- Developing labs and mobile labs for screening / clinical monitoring of diseases and prevention of cross border epidemics;
- Equipping specific public medical service infrastructure (outpatient, emergency room facilities, medical centres, integrated social intervention, etc.);
- Joint training programs and exchange of experience, networking for supporting the functioning of the specific public medical services, telemedicine ;
- Exchange of experience, joint activities in order to ensure compatibility of the treatment guidelines, joint diagnosis programmes;
- Awareness campaigns concerning public education on health, diseases and prevention of epidemics.

#### **Indicative Beneficiaries:**

- ❖ National /regional/ public administration and other public institutions
- ❖ National/regional/local/ institutions acting in the field of health and social policies;
- ❖ NGOs, universities and research institutes;
- ❖ Professional medical and other relevant associations.

### **Priority 4.2 – Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations**

#### **Indicative activities:**

- Common measures for preventing land slide and flooding of the cross border areas;
- Joint integrated systems for efficient monitoring and disaster prevention and for the mitigation of consequences;
- Common strategies and tools for hazard management and risk prevention including joint action plans;
- Elaborating of joint detailed maps and databases (indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services;)

- Exchanging experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the cross-border area;
- Development of integrated and common standards for the urban planning and risk management;
- Investments and development of common, integrated, emergency management systems.
- Planning co-ordinated actions of the authorities in emergency situations caused by natural and man-made disasters (flood, fire, heat waves, earthquakes, storms).

***Indicative Beneficiaries:***

- ❖ National/ regional/ county/ public administration and other public institutions acting in the area of mitigation of disaster risks and effects and emergency situations;
- ❖ Research institutes/organizations, universities, NGOs.

**Priority 4.3 Prevention and fight against organised crime and police cooperation*****Indicative activities:***

- Common actions for increasing mobility and administrative capacity of police units (including border police);
- Creating collaborative working platforms in order to increase the efficiency of police, border police and custom structures in the exchange of data and information;
- Joint trainings of police, customs, border police, gendarmerie, exchange of best practices on specific areas of activity (analysis, criminal investigation, organized crime).
- Investment in construction, renovation or upgrading of police and border crossing infrastructure and related buildings;
- Investments in operating equipment and facilities specific for the activity of police/customs/border police/gendarmerie (e.g. laboratories, equipment, detection tools, hardware and software, means of transport);
- Developing common policies and strategies, experience exchange for fighting organised crime.

***Indicative Beneficiaries:***

- ❖ Custom services, border police, police, other national/regional/local public institutions acting in the area of crime prevention and police, professional associations.

**LARGE INFRASTRUCTURE PROJECTS**

The Programme will finance Large Infrastructure Projects, as follows:

- 1. «Clean river» Danube (OT8) 4.2**  
Activities

- ✓ Reconstruction and modernization of sewage pumping (Ua)
- ✓ Conducting of monitoring and control of Danube waters for localization of anthropogenic discharges

## **2. Improving the cross-border infrastructure – opening the gate to Europe (OT7) 3.1**

Activități:

- ✓ Road construction works on the section Krasnoilsk – checkpoint “Krasnoilsk – Vikovu-de-Sus”;
- ✓ International conference in Suceava regarding transport and transit issues of the border area ;

## **3. Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine (OT 8) 4.3**

Activități:

- ✓ Consolidation/ refurbishment/ extension of space for territorial police structures;
- ✓ Construction of police facilities
- ✓ Acquisition and equipping border police infrastructure.

## **4. Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management (OT 8) 4.1**

- ✓ Drafting the joint cooperation plan for emergency situations (including those for mountainous-based intervention);
- ✓ Building/ setting-up the training infrastructure;
- ✓ Upgrading and modernization of the State Service Department of Emergency Situations control centres (Uk);
- ✓ Building/setting up 2 heliports for aerial medical interventions (Ro);

### **3. THE RELEVANT ASPECTS OF THE CURRENT STATE OF THE ENVIRONMENT AND THE LIKELY EVOLUTION THEREOF WITHOUT IMPLEMENTATION OF THE PROGRAMME**

The eligible area of the Programme has more ecological problems, as a result of the aggressive industrialised process before 1989, but in the limits of international pollution. The major problems come from four main sources:

- The industrial emissions and the waste resulted from operating and closing the industrial platforms, that have a negative impact on air, soil and waters;
- Reduced management of waste, especial on the rural zones; this have a direct effect on environment, if we take into consideration that there are no adequate facilities for their treatment;
- The usage of the chemical fertilizers and improper disposal of agricultural waste, with direct impact on soil and on water quality;
- The urban centres are the main generator of greenhouses gas (CO<sub>2</sub>) and have an significant impact on air quality and generally on environment, too.

There are now in the Program area more than 1000 national and international protected areas and many historical sites.

If there won't be any projects financed from Programme Ro-Ua, the ecological status of the eligible areas both from Romania and Ukraine will not be directly influenced.

The projects that can be financed under the thematic objectives TO2 and TO3 are generally soft projects focused more on concept and exchange of experience related to education, research & development and innovation or rehabilitation and promotion of the historical heritage; these can have only an indirect impact on environment.

On the other hand, the projects implemented under TO7 and TO8 would have beneficial effects on the environment through the development of an infrastructure development at the border with a significant positive impact compared to the actual situation and through prevention of the landslides and flooding with a positive impact, too.

If the Programme Ro-Ua will not be implemented , the current status of the environment in the eligible area will stay unchanged and in time will be damaged, affecting almost all the environment factors: air, water, soil, biodiversity, waste management, archaeological an architectural and landscape.

In case of certain indicative action of the Programme when they are not performed, the effect can be beneficial to the environmental aspect - biodiversity, particularly in protected areas because it does not intervene in the existing situation with various projects that would lead to a negative impact.

#### 4. THE ENVIRONMENTAL CHARACTERISTICS OF AREAS LIKELY TO BE SIGNIFICANTLY AFFECTED

##### I. ROMANIA

Characterization of the situation on air and soil quality in the four counties of Romania that are in the eligible Programmer area was based on the environment reports made by Local Environmental Protection Agencies.

Information and data on water resources and their description were taken from the following projects: Somes - Tisa River Area Management Plan –; Prut - Barlad River Area Management Plan Siret River Basin Management Plan and draft Danube River Delta Danube River Area Dobrogea and coastal waters Management Plan. These plans were published on the websites Romanian Waters National Administration and Somes – Tisa, Pruit – Bârlad, Siret, and Dobrogea Costal Water Branch.

**Somes -Tisa river basin** is located in the north and northwest of the country, bordered to the north by the natural boundary - the river Tisa with Ukraine over a length of 61 km, at west the border with Republic of Hungary and the country with Siret basin to east, south Mures basin and Crisuri basin to southwest (fig. 4.1).

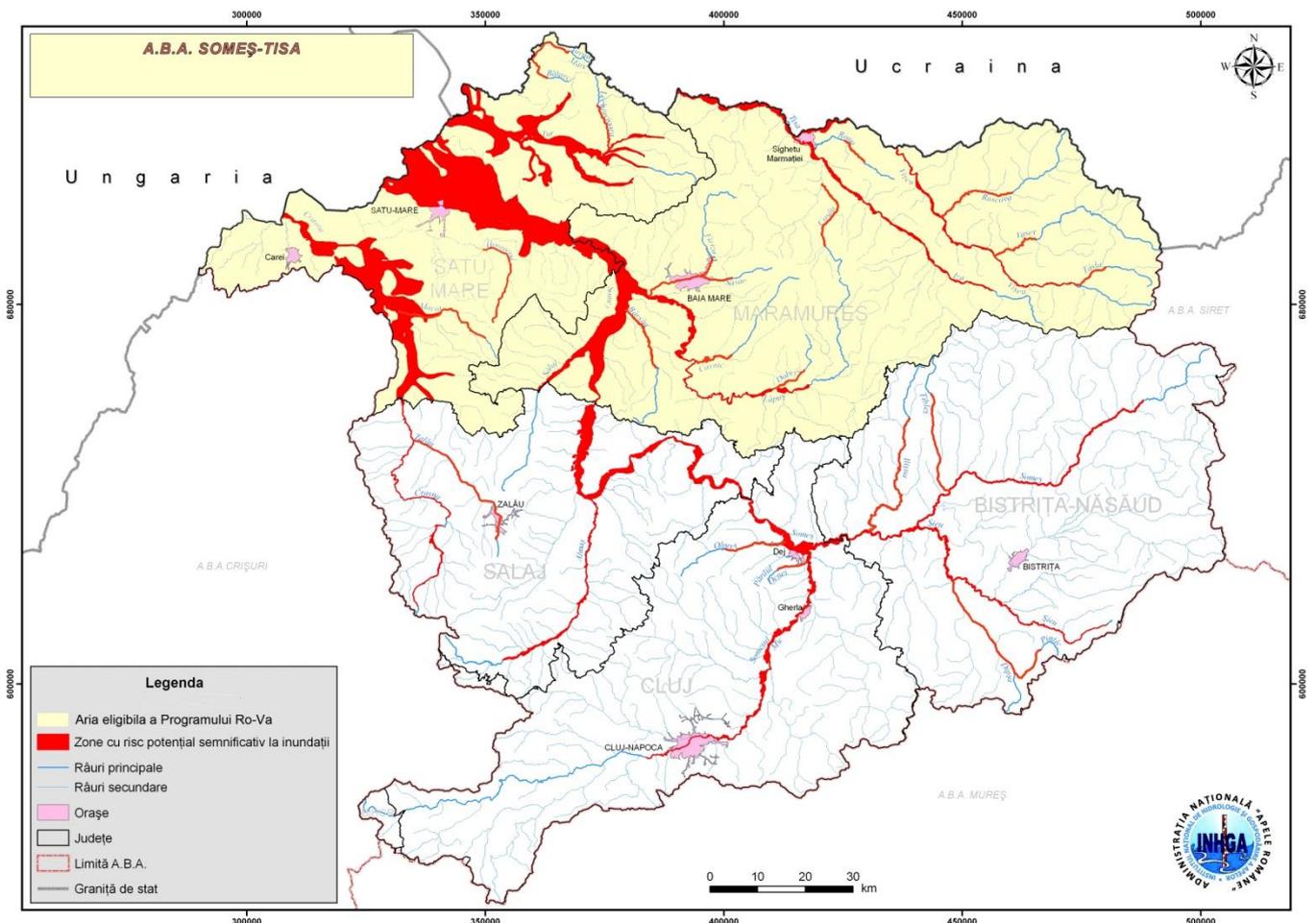


Figure 4.1. – Somes –Tisa river basin

From the administrative point of view, area river Somes - Tisa includes the territory of 7 counties: Cluj, Salaj, Bistrita - Nasaud, Maramures, Satu Mare, Alba and Bihor. The weight of the last two is not significant.

## **Hydrography**

The total area of Somes -Tisa hydrographic area is 22 380 km<sup>2</sup>, representing a share of 9.4 % of the country. The hydrographic network comprises a number of 580 coded streams with a total length of 7828 km and an average density of 0.35 km / km<sup>2</sup>.

In Romania, the area Somes – Tisa include sub-basin Tisa with a total of 123 encoded streams (surface 4540 km<sup>2</sup> and network density 0.35 km / km<sup>2</sup>) , Somes with 403 encoded rivers ( 15740 km<sup>2</sup> area network density 0.35 km / km<sup>2</sup>) and Crasna with 54 encoded streams (area 2100 km<sup>2</sup> and network density 0.34 km / km<sup>2</sup>) .

## **LAND USE**

Regarding land use throughout the AREA Somes- Tisa, there is an uneven distribution of forests, grasslands, farmland, urban and industrial land, depending on the type of relief of those areas.

Agricultural lands are prevalent in all three sub-basins: Tisa (51.9 %), Somes (64.3 %) and Crasna (72.1 %). Forests cover a grand surface in sub- basin Tisa (42.8) in other sub-basins the share is below 30% (28.3 % Somes and Crasna 18.2 %). Other forms of land use, occupy smaller areas of all habitat. Urban areas with lakes account for about 7 % of the total area.

## **WATER RESOURCES**

Water resources stationed in Somes -Tisa river basin could be considered relatively modest (but still insufficient) and unevenly distributed in space and time.

Theoretical total resource totaling an annual average stock of 6593 million m<sup>3</sup>, which is usable technical resource, is 1316 million m<sup>3</sup>, i.e. 20 %. The main component of water resources is composed of the surface water of the river system which ensures an average hydrological year mil.m3 leak a volume of 6110 (theoretical resource), of which 16 % is usable technical resource (approximately 971 million m<sup>3</sup>). Of this, 70 % is provided in a natural regime (650 million m<sup>3</sup>) with Tisa, Somes, Vișeu, Someșul Mic, Lăpus, Iza and Șireu and their tributors as the main courses and the rest by accumulations.

Reported to the basin population, specific usable resource is 504 m<sup>3</sup>/person/year and the specific resource relative to the theoretically available stock (annual average) amounts to 3504 m<sup>3</sup>/person/year. Water resources stationed in the Somes-Tisa basin area are sufficient, with a reserve potential.

Annual average flow of the river Somes record hydrometric station Satu Mare, near the exit from the country, a value of 125 m<sup>3</sup> / s, for a surface of 15,600 km<sup>2</sup> ( specific rate = 8.01 l / s / km<sup>2</sup>) , with significant hydrological contribution rivers : Sieu ( 15.1 m<sup>3</sup> / s), Somes Mic ( 21.2 m<sup>3</sup> / s), Lapus ( 19.3 m<sup>3</sup> / s). For the Tisa River leaving the country has been calculated an annual average flow of aprox.130 m<sup>3</sup> / s, for a total area of the river (including Ukraine) of 6423 km<sup>2</sup> (specific rate = 20.2 l / s / km<sup>2</sup>), with important hydrological contribution Romanian territory rivers Vișeu (33.9 m<sup>3</sup> / s) and Iza (16.6 m<sup>3</sup> / s).

It is noted that the Tisa River has a specific flow three times then river Somes, although surface of Tisa basin are half that of the basin Somes, result of heavy rainfalls which are registered in the catchment of the Tisa. The area with low water resources is Crasna River basin , which is characterized by low leakage due to climatic morphological factors ( low-altitude , low rainfall and high temperatures). Domănești hydrometric station, near the border with Hungary, recorded an average flow of 3.5 specific l / s / km<sup>2</sup>.

Resources of groundwater inventory at the basin level are: theoretically groundwater 483 million m<sup>3</sup> and usable 316 million m<sup>3</sup>, being constituted in proportion of 62.3 % from groundwater aquifers and 41% depth.

## **WATER SURFACE CATEGORY**

In the Somes- Tisa hydrographic river space there are the following surface water categories: 521 rivers with surfaces greater than 10 km<sup>2</sup> and 13 lakes with surfaces greater than 50 ha. They also are selected three natural lakes with surface less than 50 ha.

## **Rivers**

**Tisa River** – came from Woody Carpathians western territory of Ukraine, forms the natural border between Romania and Ukraine over a length of 61 km between the towns of Viseu and Piatra and flows into the Danube in Hungary.

On the Romanian territory, Tisa basin covers an area of 4540 km<sup>2</sup>, the average slope 2 ‰, collecting water for 115 watercourses with areas greater than 10 km<sup>2</sup>, with a total length of 1557 km.

**Viseu River** - with the surface of 1581 km<sup>2</sup> and a total length of 82 km, flows from Maramures Mountains in the Prislop at an altitude of 1535m, drains southwest slopes of these mountains and through Rodnei Mountains of the northern tributaries of the right Cisla, Vaser, Ruscova and Frumuseaua.

**Iza River** – with the surface of 1293 km<sup>2</sup> with a total length of 80 km, has its source in Rodnei Mountains at an altitude of 1275 m, collecting waters left by Gutaiul Mountains. The main tributaries of Iza are Boicu, Ieud, Botiza, Mara Cosău and Rona (right tributary).

**Somes River** drains a catchment of 15740 km<sup>2</sup>, including 362 watercourses with areas greater than 10 km<sup>2</sup> with a total length of 5263 km.

**Little Somes River** with the surface of 3773 km<sup>2</sup> and total length of 178 km is the most important tributary of Somes. It is formed by the union of Somes Cold and Somes Warm, rivers with springs in Vladeasa and Gilau Mountains.

**Lapus River** is almost unique collector's southern slopes of the volcanic mountains of Gutai Mountains Lapus - Tibles and with a strong right asymmetry. Basin covers an area of 1875 km<sup>2</sup> and a total length of 119 km.

## **Natural lakes**

In the space Somes -Tisa River hadn't been accounted lakes with areas exceeding 0.5 km<sup>2</sup>.

### ***Prut – Bârlad River Bazine***

## **Characterization of the ecological and chemical state of the waters in the Somes – TISA basin**

In the Someș – Tisa hydrographic area were analyzed and described from the ecological state/potential point of view 278 water bodies (246 natural and 32 heavily modified natural / artificial) out of which:

- 130 water bodies (representing 52.84% of the natural water bodies and 46.76% of the total of 278 water bodies) are in good ecological status and 11 water bodies (representing 34.37% of water bodies heavily modified / artificial and 3.95% of the total of 278 water bodies) are good potential; the remaining 137 water bodies have a less good ecological status or less good ecological potential;
- 230 water bodies (representing 93.50% of the natural water bodies and 82.73% of the total of 278 water bodies) are in good chemical status and 30 water bodies (representing 93.75% of water bodies heavily modified / artificial and 10.79% of the total of 278 water bodies) are in good chemical status; the remaining 18 water bodies are in bad chemical status.

**Prut - Barlad river area** consists of middle and lower basin of Prut river, Barlad river basin and left tributaries of the Siret river in Botosani and Galati county (fig. 4.2).

**Prut River Basin** is located in the north- east of the Danube basin, bordering northwest Tisa River Siret River to the west and north and east.

The total area of 27,500 km<sup>2</sup> basin is carried out on the territory of three countries: Ukraine, Romania and Moldova. The second longest tributary of the Danube, Prut River (952.9 km)

forms the border between Romania and Ukraine, 31 km and between Romania and Moldova on 711 km.  
 Barlad river basin, left tributary of the Siret River, is bounded in the north and east of the Prut river basin.

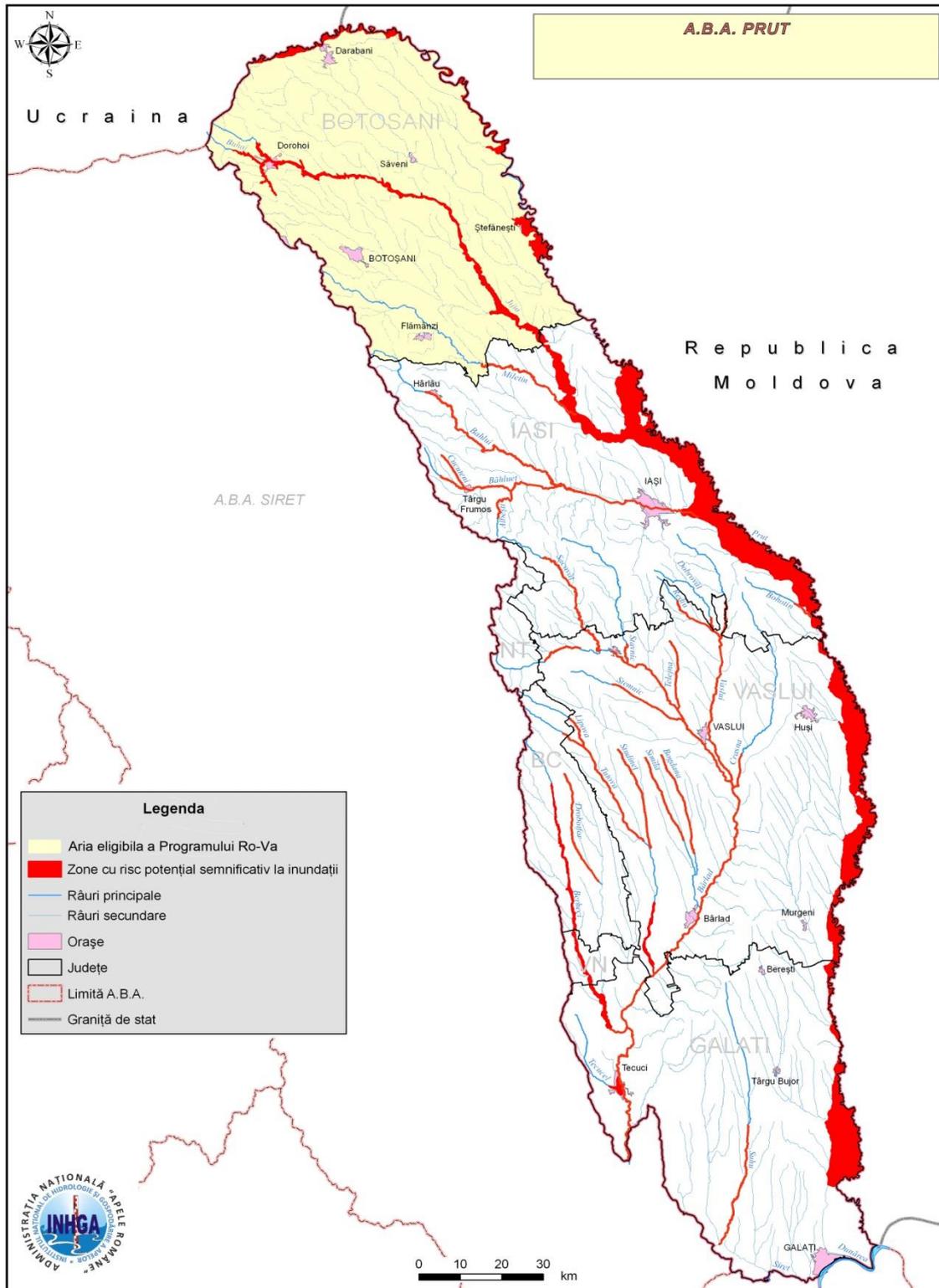


Figure 4.2 - Prut – Bârlad River Bazine

From the administrative point of view, space river Prut - Barlad occupy almost all the counties of Botosani, Iasi, Vaslui and Galati and partly counties of Neamt, Bacau and Vrancea. Prut River Basin in Romania has an area of 10 967 km<sup>2</sup> (approx. 4.6 % of the country). Barlad River, the largest tributary of the Siret left, has a catchment area of 7220 km<sup>2</sup>.

As a feature of space river Prut - Barlad, 80 % of the river is made up of non-permanent training courses of which 60% are temporary ( phenomenon occurring in the upper drying up due to periods without rainfall ) and 18 % are semi-permanent courses.

### **Hydrography**

Total surface of the Prut - Barlad river area is 20,267 km<sup>2</sup> representing a share of approx. 8.7% of the country surface. The hydrographical network comprises of 392 watercourses surveyors, with a total length of 7,679 km and an average density of 0.38 km / km<sup>2</sup>. In Romania, the Prut-Barlad river area includes the following sub-basins: the middle and lower basin of the Prut river, Barlad river basin and left tributaries of the Siret river in Botosani and Galati county with a total of 392 watercourses.

### **Land Use**

Use of the land within the catchment area Prut - Barlad is influenced by physical and geographical conditions and anthropogenic factors.

Arable land predominates both in the river Prut (54.7 %) and in the river Barlad (46%). Forests, occupying 21.4% in the river Prut and in the Barlad river basin 27 %, are developed especially in areas of contact with high plateau relief.

Perennial crops have a relatively uniform development occupying 13.3% in the river Prut and 16.1 % in the river Barlad. Other areas occupy much smaller areas. The lakes occupy a share of 1.19 % in the river Prut and 0.26 in the river Barlad.

### **Water resources**

Total surface water resources of the basin Prut - Barlad totaling about 3661 million m<sup>3</sup> / year, of which about 960 million are usable m<sup>3</sup> / year. The stock of 3.661 billion cubic meters / year , representing about 94 % of total resources and consists mainly of rivers Prut , Barlad and their tributaries.

In the Prut - Barlad river area, are 72 main reservoirs (greater than 0.5km<sup>2</sup>) in which 49 use complex totaling a volume of 614.85 mil. m<sup>3</sup>.

Relative to the basin population, specific usable resource is 437.16 m<sup>3</sup> / person/ year and the specific resource determined as available theoretically stock (annual average) amounts 1667.12 m<sup>3</sup> / person / year. Water resources stationed in the Prut - Barlad river area might be considered low and unevenly distributed in space and time.

The average multi-annual flow rates for major rivers in the hydrographical river area are: r. Prut 105 m / s (3.314 mil. m<sup>3</sup> / year) to Danube confluence; r. Jijia is 10 m / s (316 mil. m<sup>3</sup> / year); r . Barlad to 11 m / s (347 mil. m<sup>3</sup> / year to Siret confluence, r. Vaslui 1 m / s (31.56 mil. m<sup>3</sup> / year) r. Tutova 1 m / s (31.56 mil. m<sup>3</sup> / year).

Of the total length of watercourses in the hydrographic Prut - Barlad river area, temporary watercourses account about 80%.

In the Prut - Barlad river hydrographic area the usable groundwater resources are estimated at 251.4 mil. m<sup>3</sup> (7.97 m/s) out of which 34.7 mil. m<sup>3</sup> (1.1 m/s) mil. are groundwater sources and 216.7 mil. m<sup>3</sup> (6.87 m/s) are underground water.

### **Categories of surface water**

In the Prut - Barlad river area – were identified 417 rivers with surfaces greater than 10 km<sup>2</sup>, 7 natural lakes with surface greater than 0.5 km<sup>2</sup>, one natural lake substantially modified ,72 lakes (reservoirs and a natural lake) with areas greater than 50 ha and 262 pools.

### **Characterization of the ecological and chemical state of the waters in the PRUT – BÂRLAD basin**

In the Prut – Bârlad hydrographical area were analized and described from the ecological state/ potential point of view 322 water bodies (228 naturals and 94 heavily modified natural / artificial) out of which: 75 (32.89 %) water bodies are in good ecological status, 16 (17.02 %)

water bodies have a good ecological potential; the remaining 231 (71.73%) water bodies have a moderate ecological status or moderate ecological potential.

Ecological state and potential of water bodies (rivers) relative to water bodies category is presented below:

- 228 natural water bodies out of which 75 (32.89%) have a good ecological status and 153 (67,1%) have a moderate ecological status;
- 91 substantially modified water bodies out of which 17 (18.68%) have a good ecological potential, 51 (56,04%) have a moderate ecological potential and the evaluation for 23 (25.27%) substantially modified water bodies is unrelevant;
- 3 (100%) artificial water bodies have a moderate ecological potential

**Siret hydrographical river area** is the east, north east of the country, bordered by the Siret River, adjoined by Somes - Tisa, Mures River river basins to west, by Ialomița - Buzău rivers to south and by Prut basin to east ( Fig. 4.3).

**Siret River Basin** is located in the east - north - east of the country is the largest river basin in Romania Siret River with an annual average flow, spill, approx. 250 m / s and represent the largest river basin in Romania.

Siret River Basin has an area of 44.811 km<sup>2</sup> out of which 42.890 km<sup>2</sup> in Romania.

From the administrative point of view , fully occupies the space Suceava river Siret , almost entirely Neamț, Bacău and Vrancea counties and part of Botoșani, Iași , Galați , Buzău, Covasna , Harghita, Bistrița Neamț, Maramureș .

### **Hydrography**

In Romania the total surface of the Siret river hydrographical area is 28 116 km<sup>2</sup> representing a share of 11.8% of the country surface. The hydrographical network comprises of 735 watercourses surveyed, with a total length of 10,280 km and an average density of 0.36 km / km<sup>2</sup>. In Romania, Siret river area includes part of the Siret basin with a total of 735 rivers.

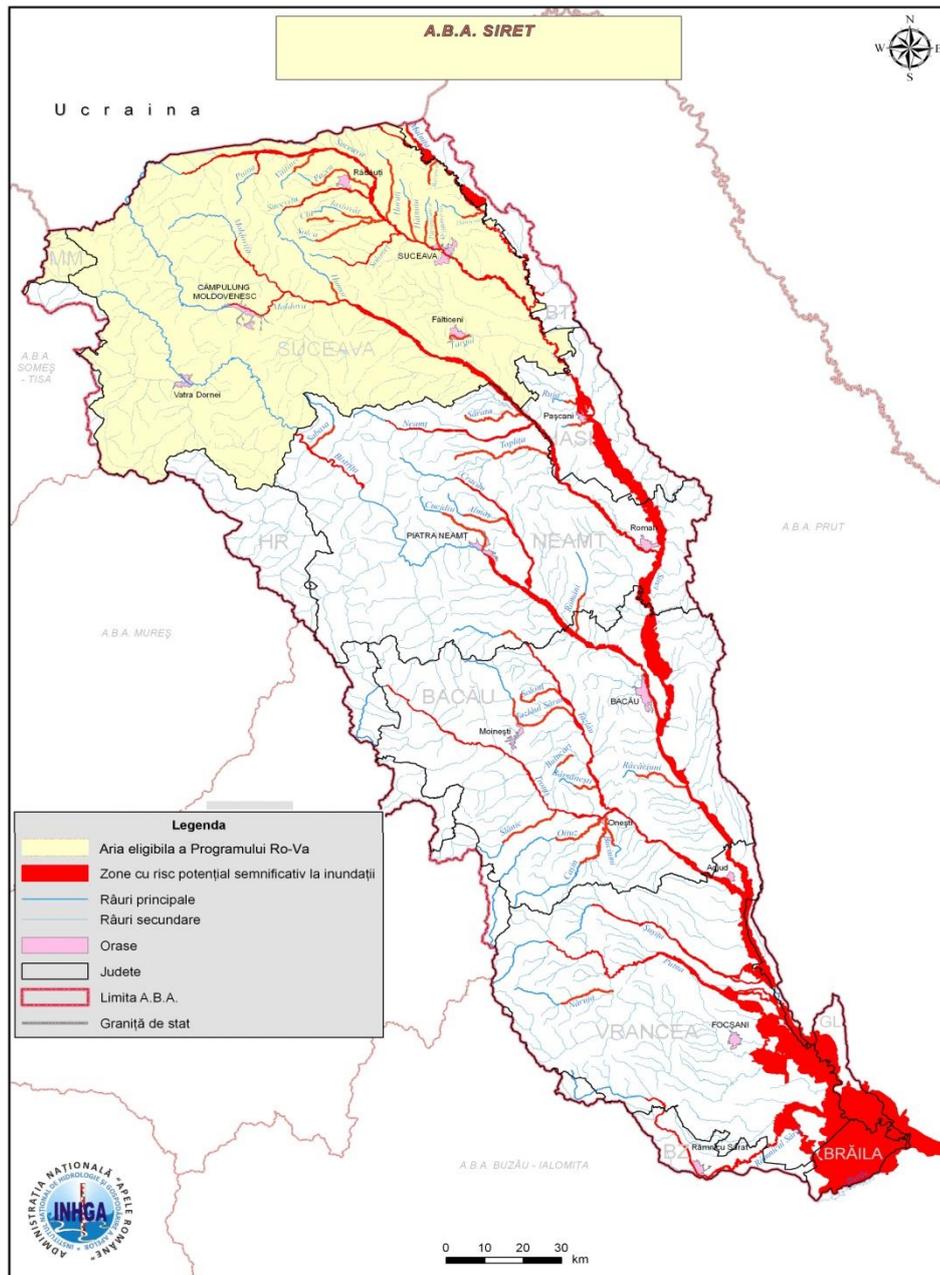


Figure 4.3. - Siret River Bazine

### Characterization of the ecological and chemical state of the waters in the SIRET basin Rivers

In the Siret hydrographical area were analyzed and described from the ecological state/ potential point of view 362 water bodies (333 natural and 29 heavily modified natural / artificial) out of which:

- 230 water bodies (representing 69,06 % of natural water bodies and 63.5% of 362 water bodies) are in very good and good ecological status and 17 water bodies (representing 58.62 % of heavily modified/ artificial water bodies and 4.7% of 362 water bodies) have a maximum and good ecological potential; the remaining 115 water bodies have a less than good ecological status/ potential.

## **Land use**

Use of the land in the Siret River Basin is influenced by physical and geographical conditions existing as well as the main economic activities developed in this area and have the following distribution: 58,29% forests, 12.17% grasslands, 22,7 agriculture land, 0.59% water surface. The areas of forests and shrubs are predominant (58.29 %); compact areas are developed and expanded in areas with high relief. Miscellaneous perennial crops and agricultural areas (12.17 %) have a relatively uniform development throughout the basin area. The areas of arable land lie on the east side of the basin in the plateau and along the Siret river meadow at the rate of 22.7 %.

## **Water resources**

Total surface water resources of the Siret river area accounts approx. 6868 mil.m<sup>3</sup>/year out of which usable resources are about 2655 mil.m<sup>3</sup>/year. These are approx. 38.6% of total resources and are mainly formed by the rivers Siret, Moldova, Bistrita, Trotuș and their tributaries.

The Siret river area comprises 21 major reservoirs (with area less than 0.5 km<sup>2</sup>), with complex usage and accounting a volume of 1206.121 mil.m<sup>3</sup>.

Relative to the basin population, specific usable resource is 1,025 m<sup>3</sup> / person/ year and the specific resource determined as available theoretically stock (annual average) amounts 2.651 m<sup>3</sup> / person / year. Water resources stationed in the Siret river area might be considered quantitative moderate and unevenly distributed in space and time.

The average multi-annual flow rates for major rivers in the hydrographical river area are:

- Siret River, at the country entering in Section Siret has an annual average flow of 13.0 m<sup>3</sup>/s. Flows are increasing to downstream especially after major confluences. Thus, Lespezi (downstream of the Suceava confluence) is 36.5 m<sup>3</sup>/s, Drăgești (downstream of the Moldova confluence) is 75.1 m<sup>3</sup> / s, Răcățoi (downstream of Bistrita confluence) is 140 m<sup>3</sup>/s and Lungoci (downstream of the confluence with Trotuș and Putna) - 210 m<sup>3</sup>/s.
- Moldova River, drain water and sediments that grow lengthwise so that annual average flows (multi values) are: 3.75 m<sup>3</sup>/s at Fundu Moldova, 7.56 m<sup>3</sup>/s at Prisaca Dorna, 18.1 m<sup>3</sup>/s at Gura Humorului, 35.5 m<sup>3</sup>/s at Tupilati and the same value at Roman.
- Bistrita River, is the most important tributary of the Siret River Carpathian. Since its hydrographical area drains highest mountain establishments in the Eastern Carpathians, the drain water is rich. Annual average flow at the Bistrița confluence with Siret is, 62.5 m<sup>3</sup>/s.
- Trotuș River multiannual average flow are the following 0.773 m<sup>3</sup>/s at Upper Meadow, 3.52 m<sup>3</sup>/s at Ghimeș Faget, 6.38 m<sup>3</sup>/s at Goioasa, 17.0 m<sup>3</sup>/s at Tg. Ocna, 25.1 m<sup>3</sup>/s at Onesti and 35.2 m<sup>3</sup>/s at Vrancea.

Of the total length of watercourses in the Siret river cadastral area, temporary watercourses are about 5.3.%.

Siret river hydrographical area the groundwater resources are estimated at 700 mil.m<sup>3</sup> (usable resource), of which 578 mil.m<sup>3</sup> are groundwater sources and 122 mil.m<sup>3</sup> are underground water.

## **CHARACTERIZATION SURFACE WATER**

Siret river, are identified 695 rivers with areas greater than 10 km<sup>2</sup> and 21 lakes with areas greater than 50 ha.

### **Rivers**

**Siret River**, which forms part of the Border Rivers, springs from the Carpathian Mountains. Wooded after entering the territory of Romania collects tributaries that descend from the eastern slopes of the Carpathians.

Siret has a total length of 647 km from its source under Obcina Lungru and flows into the Danube near Galati (at Șendreni).

**Suceava River** - flows from the mountains Bucovina (Suceava County) and flows into the river near the village Liteni Siret (Suceava County), having a length of 173 km. Suceava River Basin has an area (in Romania) of 2298 km<sup>2</sup> and contains a no. 72 encoded streams. The main tributaries of the river Suceava are: Putna , Pozen , Sucevița , Șomuz , Solca , Hora , Soloneț Hătnuța , Dragomirna .

**River Moldova** - Moldova River has a length of 213 km and an area of 4299 km<sup>2</sup>, with an average altitude of 674 m. It rises in the northern tip of Obcina Lucina - Mestăcaniș at an altitude of 1116 m. And flows into Siret river downstream from the Roman (Neamt county), having a length of 213 km and an area of 4299 km<sup>2</sup>.

The main tributaries of the river Moldova are: Sadova, Moldova, Suha, Humor, Suha Mica, Suha Mare, Rasca, Neamt, Nemțișor, and Toplița.

**Bistrita River** - flows from Rodnei Mountain (Suceava County) and flows into river Siret downstream of the municipality Bacau. It is the largest tributary of Siret River and has a length of 283 km and collects water from a hydrographic network encoded with a no. 193 watercourse. Bistrita river basin covers an area of 7039 km<sup>2</sup>.

The main tributaries of the river Bistrita are: Dorna , Black , Borca , Sabasa , Bistricioara, Putna, Bicaz, Damuc , Tarcău , Cracău , Romanian , Trebes.

**Trotuș River** - flows from the mountains Ciuc (Harghita County) and flows into the Siret River downstream from the city of Adjud (Vrancea). It has a length of 162 km and an area of 4456 km<sup>2</sup>. Among the major tributaries of Trotuș are: Slanicului OITUZ , Cașinul , Tazlăul .

**Putna River** - flows from Vrancea Mountains and flows into the Siret River in Vrancea County. It has a length of 153 km and a catchment area of 2480 km<sup>2</sup>. The hydrographic network includes a no. Of 62 encoded streams. Of these the most important are: Zabala, Sturza, Milcov, Ramna, and Naruja

**Ramnicu Sarat River** - stems from Subcarpații Curve (Buzau County) and flows into the river Siret in the Maicanesti - Nămolosa (Vrancea County). It has a length of 137 km and a catchment area of 1063 km<sup>2</sup>. The hydrographic network has a total of 16 streams encoded. The main tributaries of the river are: Greaban; Contact; Virago; Sliming.

### **Natural Lake**

In Siret river hydrographical area there are no natural lakes with a surface less than 0.5 km<sup>2</sup>.

Dobrogea hydrographical area, Danube Delta and coastal waters area are located in the south-east of the country, being bounded as follows:

- Dobrogea Basin Area: north and north - east of the Danube Delta, east of the Black Sea coastal waters, south of the border with Bulgaria, and west of the Danube River;
- Delta: north of the border with Ukraine, the Black Sea to the east, south and west of Dobrogea River Area;
- Coastal Waters: north of the border with Ukraine, east of the Black Sea, south of the border with Bulgaria and west of Dobrogea and the Danube Delta Basin Area.

From the administrative point of view, Dobrogea and the Danube Delta Basin Area comprising the territories of two districts, namely: Constanta and Tulcea.

Romanian Black Sea coastal waters are represented by surface water lying between dry and distance of 1 nautical mile to the nearest point of the baseline (baseline is defined by nine points in the territorial sea of Romania, as specified in Law no. 17/1990 as amended and supplemented), being located between Chile and Vama Veche.

**Danube river basin** covers about 10% of the continent. By length of 2780 km, catchment area of over 801,463 km<sup>2</sup> and annual average flow of about 6,500 m<sup>3</sup> / s, the Danube, after the Volga, is the second longest river in Europe. 97.4 % of Romania is located in the Danube river basin, which is 29 % of the Danube basin, the country with the largest area in the Danube basin. Also 37.7 % of the Danube's length flows on Romanian territory. Due to physic - geographical distribution and character of the hydrological regime, the Danube is divided into three sections: the upper Danube (source - Vienna), Middle Danube (Vienna - Iron Gates) and

Lower Danube (Iron Gate - Black Sea). Below the lower Danube forms the border between Romania and Serbia state and Bulgaria.

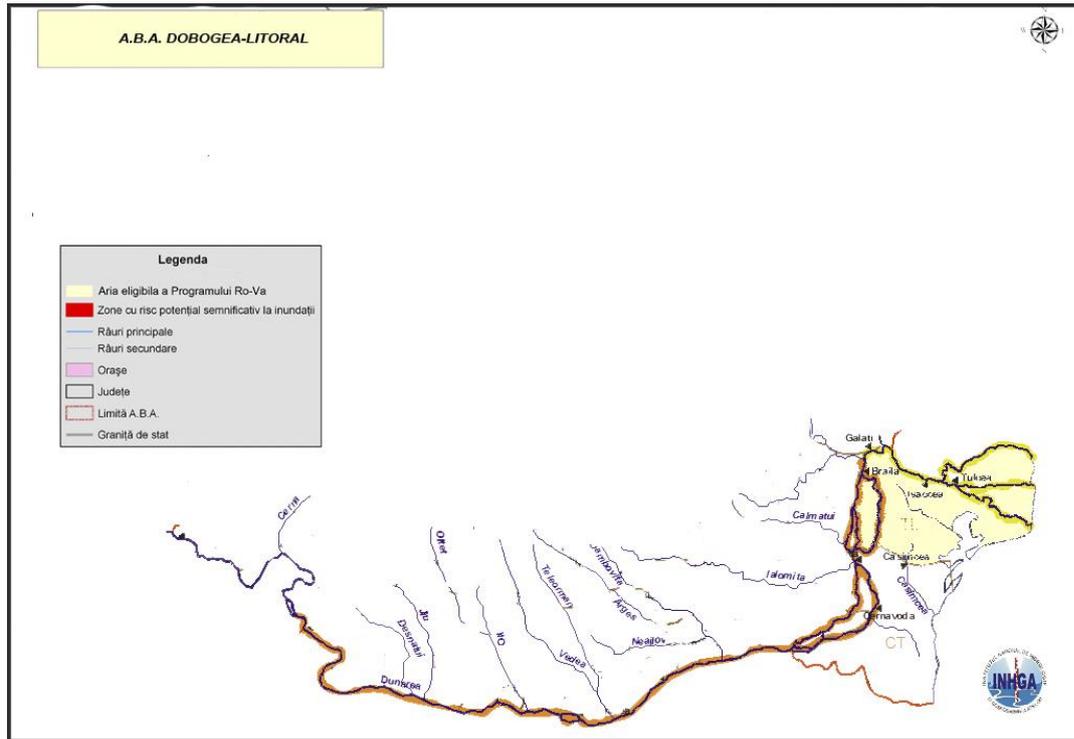


Figure 4.4. – Danube River, Danube Delta, Dobrogea hydrographical area and Coasta Waters

Important tributaries of the Danube are represented by the rivers: Timoc, Lom, Ogosta, Iscar, Vit, Osam and Iantra on the right and Jiu, Olt, Arges Vedea, Ialomita, Siret and Prut, on the left. Danube's water resources in Baziaş section are 175.6 billion m<sup>3</sup> of which 30 billion m<sup>3</sup> is technically usable resources.

### **Land use**

The land use of Dobrogea hydrographical area is influenced by physical and geographical conditions as well as by antropogenic factors and has the following distribution: 22.33% forests, 1.02% grasslands, 71,09% agriculture land, 2.49% water surface, etc.

In Danube Delta the forests represents a share of 11.66%, grassland 1.3%, agricultural land 12.70%, and the water surface account the main share 73.14%.

### **Water resources**

Total surface water resources of the Danube river area (Chiciu – Isaccea sector) Danube Delta and Dobrogea hydrographical area accounts approx. 404,136.4 mil.m<sup>3</sup>/year out of which usable resources are about 51,380.8 mil.m<sup>3</sup>/year. These are approx. 12,71% of total resources and are mainly formed by the Danube River.

Dobrogea hydrographical area comprises 4 major reservoirs (with area greater than 0.5 km<sup>2</sup>), with complex usage and accounting a volume of 24.45 mil.m<sup>3</sup>.

Relative to the Danube Delta and Dobrogea hydrographical area population, specific usable resource is 53,138 m<sup>3</sup> / person/ year and the specific resource determined as available theoretically stock (annual average) amounts 417,961 m<sup>3</sup> / person / year. Water resources stationed in Dobrogea hydrographical area might be considered low and unevenly distributed in space and time.

The average multi-annual flow rates for major rivers in the hydrographical river area are: 0.486 m<sup>3</sup>/s – Taiţa, 0.632 m<sup>3</sup>/s – Casimcea, 0.305 m<sup>3</sup>/s – Topolog, etc.

Of the total length of watercourses in Danube River, Danube Delta, Dobrogea hydrographical area and Coastal Waters, temporary watercourses are about 6.%. In Dobrogea hydrographical area the groundwater resources are estimated at 2,090.818 mil.m<sup>3</sup> (usable resource), of which 372.27 mil.m<sup>3</sup> are groundwater sources and 1,718.548mil.m<sup>3</sup> are underground water.

### **Characterization of surface water**

The categories of surface water are Danube and Iron Gate I and II.

#### **The Danube River**

Hydrological regime of the river Danube is relatively uniform; the ratio between the minimum flow and maximum flow rate is 1/10, compared with inland courses regime for the previously mentioned report varies between 1/200 and 1/2000.

#### **Iron Gate**

Iron Gate Lake was developed in 1972 and has a volume of 2.1 billion m<sup>3</sup> and Lake Iron Gates II was opened in 1986 and has a volume of 800 million m<sup>3</sup>. These lakes have retention times < 1 day.

**General characterization of the Danube Delta:** Danube Delta, the youngest geographical unit in Romania (the first embryo appeared 12,000 years ago) and the second largest deltaic unit in Europe (after the Volga Delta) is a unique ecosystem. The Danube Delta is distinguished on the one hand the positive forms of relief, made up of promontories Bugeac plateau, fluvial, coastal storage formations formed by the juxtaposition of numerous ancient coastal belts (marine areas) and the actual sea banks, on the other hand forms submerged negative relief, that make up the Delta river.

Danube Delta covers an area of 4757 km<sup>2</sup>, accounting for a share of 2% of the country surface. Danube Delta existing hydrographic network is represented by the three branches of the Danube River with a total length of 290 km and an average density of 0.06 km/km<sup>2</sup>. In addition to the three arms of the Danube River, there is a network of canals, streams, creeks, low hollows, linking Delta's lakes and the three arms of the Danube River.

**Danube Delta Biosphere Reserve** lies on Romanian territory over an area of 5,800 km<sup>2</sup> and Ukrainian territory on an area of 465 km<sup>2</sup>. Danube Delta Biosphere Reserve Components on Romanian territory are:

- 3.510 km<sup>2</sup> Actual Delta (Romanian sector);
- 1.145km<sup>2</sup> - Razim-Sinoie;
- 1.030 km<sup>2</sup> - marine waters (up to isobaths - 20 m to the southern tip, Cape Midia
- 13 km<sup>2</sup> Danube riverbed between the Cat Bend and Isaccea (Romania);
- 102 km<sup>2</sup> Danube floodplain between Isaccea and Tulcea.

The waters that reach Delta are:

- Chilia by the canals: Sireasa, Şontea, Pardina,
- Sfântu Gheorghe by the canal Litcov,
- Sulina by side canal

### **Characterization of the ecological and chemical state of the DANUBE RIVER, DANUBE DELTA, DOBROGEA hydrographic area and coastal waters**

#### **Rivers**

In the Danube River, Danube Delta and Dobrogea hydrographic area out of the 115 water bodies there have been analysed and described from ecological state/ potential point of view 93 (81%) water bodies (79 natural (69%) and 14 heavily modified/ artificial (12%)), of which: 57 (61%) water bodies have a good ecological status and 8 (9%) water bodies have a maximum and good ecological potential. The remaining 22 are lakes used for fishing, treatment, that is why their ecological status has been considered irrelevant and unapplicable for these specific until new environmental objectives will be defined.

At Danube River, Danube Delta, Dobrogeahydrographical area and Coastal Waters Area, all 115 water bodies were analyzed and characterized chemically, of which 112 (97%) water bodies reach good chemical status and 3 (3%) do not reach the status of water bodies in chemically.

Analiza informațiilor privind calitatea apelor din Rapoartele APM-urilor locale despre starea mediului în cele 5 județe din aria eligibilă a Programului a arătat că aceasta este în limitele valorilor indicatorilor de calitate prevăzute de legislația în vigoare și că nu a fost înregistrat nici un incident de poluare semnificativ în ultima perioadă de ani.

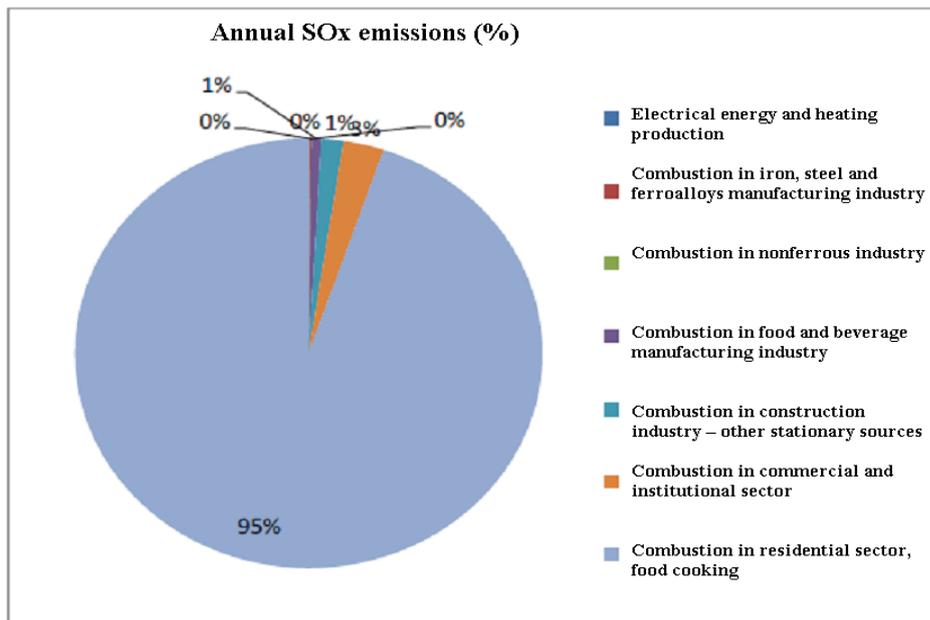
#### 4.1 Botoșani County

➤ **AIR**

*Sulphur dioxide (SO<sub>2</sub>)*

In 2013 total SOx emissions were 115 603 Mg resulted mainly from residential heating combustion and food cooking (95%), commercial and institutional heating (3%),

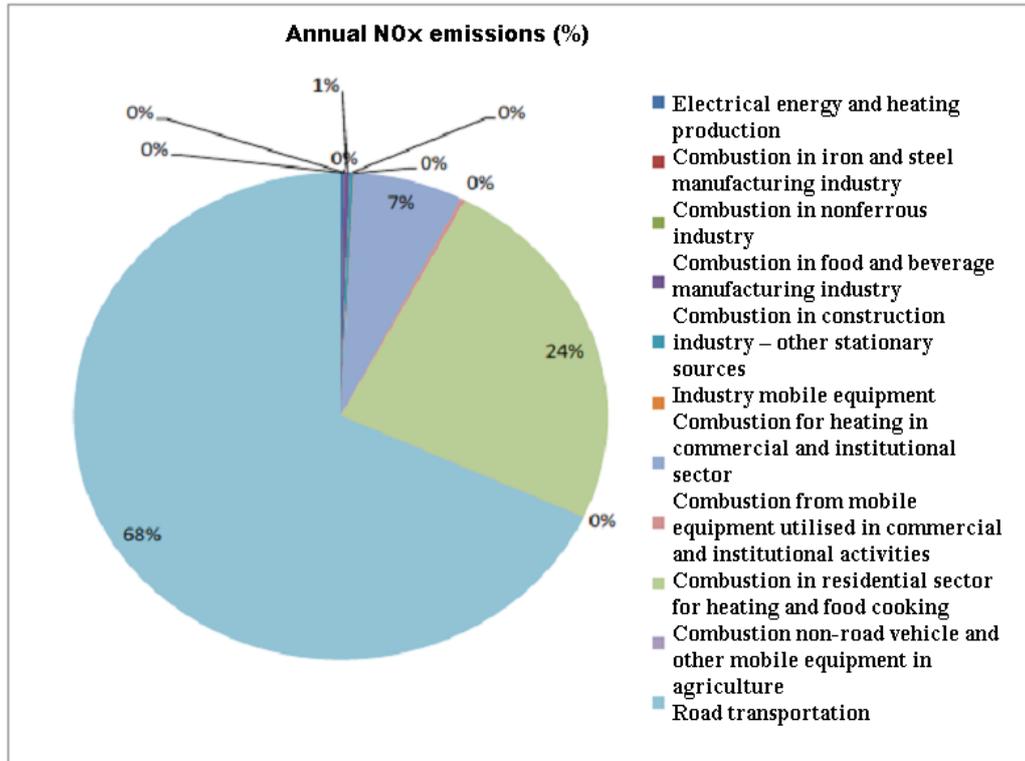
SOx emissions increased in 2013 due to the inventory inclusion of a large number of municipalities (10 municipalities in 2012 and 42 in 2013).



**Figure 3.1.1** Annual SOx emissions (%)

*Nitrogen oxides (NO<sub>x</sub>)*

In 2013 the total NOx emissions were 1335.530 Mg, mainly resulting from road traffic (68%), combustion for residential heating and food cooking (24%), commercial and institutional heating (7%). Total NOx emissions decreased from the previous year to 53.06% due to lower emissions from road traffic.



**Figure 3.1.2** Annual NO<sub>x</sub> emissions

In 2013 the amount of energy produced in cogeneration by SC MODERN CALOR SA was 135,807 MWh of which 73,940 MWh heat and 61,867 MWh electricity.

In the year 2013 air quality monitoring was as follows:

- By automatic continuous measurements performed by Urban background exposure station for the following pollutants: SO<sub>2</sub>, O<sub>3</sub>, BTEX- VOCs and PM<sub>10</sub>;
- Gravimetric measurements - for particulate matter (PM<sub>10</sub> and PM<sub>2,5</sub>);
- Rainfall quality measured in EPA Botosani point, with the following pollutants monitored: pH, conductivity, alkalinity / acidity, hardness, SO<sub>4</sub><sup>2-</sup>, NO<sub>2</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NH<sub>4</sub><sup>+</sup>, Cl, Ca<sup>2+</sup> și Mg<sup>2+</sup>.

Urban background exposure station is placed in the residential area with high population density located at a sufficient distance from stationary or mobile sources and is designed to assess air quality.

*Nitrogen oxides*

In 2013 were made continuous measurements through automatic air quality monitoring stations (in Botosani). NO<sub>x</sub> analyser was defective.

*Sulphur dioxide*

According to Law no.104/2011 on air quality, recorded sulphur dioxide values were well below the hourly limit (350μ/m<sup>3</sup>) and also in the daily limit value (125 μg/m<sup>3</sup>) for the protection of human health.

There was no exceeding of the alert threshold of 500 μg/m<sup>3</sup>, three consecutive hours measured.

### Particulate matter

In 2013, the frequency of exceeding the daily limit value for PM<sub>10</sub> protection of human health (50 mg/m<sup>3</sup>) was 6.86% and 14.09% for PM<sub>10</sub> nephelometry. During 2013 there were 23 breaches of particulate matter determined by the gravimetric method.

Encountered exceeding were due to: traffic, road works, thermal plants operation and weather conditions (atmospheric calm), who favoured keeping pollutants close to the ground.

In 2013 there were no accidental pollution with major impact on the environment and citizens.

### ➤ SOIL

According to data provided by the Department of Agriculture and Rural Development Botosani, changes in the distribution of land use categories in the period 2008 - 2013 were as follows:

**Tabele 4.1.1** Distribution's evolution of agricultural land by use

	Category of use	Area (ha)					
		2008	2009	2010	2011	2012	2013
1	Arable	298,774	298,762	298,762	298,739	298,747	298,742
2	Grassland	75,381	75,146	75,146	75,146	75,146	75,146
3	Meadows and natural grassland	14,635	14,635	14,635	14,635	14,635	14,635
4	Vineyards	1,690	1,690	1,690	1,690	1,680	1,680
5	Orchards	2,559	2,559	2,559	2,559	2,559	2,559
	Total land	393,039	392,762	392,792	392,769	392,767	392,762

In relation to the suitability of field crops, arable land is grouped in 6 suitability classes which take into account the nature and intensity of restrictive factors for production. Situation in Botosani County in 2013, is presented below:

**Tabel 4.1.2** Division of agricultural lands depending on soil uses in Botoșani county

No.	Specification	M.U.	Soil Worthiness classes						
			I	II	III	IV	V	VI	
1	Arable		14,379	110,009	119,055	36,973	18,331	0	209,739
2	Grassland		1,503	12,775	8,266	48,845	3,757	0	75,146
3	Meadows		293	2,488	1,609	9,513	732	0	14,635
4	Vineyards		0	0	23	600	1,067	0	1,680
5	Orchards		33	395	11	117	2,003	0	2,556
			<b>16,208</b>	<b>125,667</b>	<b>128,956</b>	<b>96,048</b>	<b>25,890</b>	<b>0</b>	<b>392,769</b>

During 2013, in Botosani County have not occurred major environment pollution accidents leading to soil contamination.

## 4.2. Maramureş County

### ➤ AIR

#### *Sulphur dioxide (SO<sub>2</sub>)*

In 2013, from the analysis of inventory of emissions of pollutants into the atmosphere in the Maramures County the SO<sub>2</sub> emissions didn't result. Evolution for the annual emissions of the sulphur dioxide into the atmosphere over the past ten years is shown in **Table 4.2.1**:

**Table 4.2.1** Annual emission of SO<sub>2</sub>

<b>Maramures county total</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Annual emission SO <sub>2</sub> (t/year)	726	618.8	353.5	2426.2	1098.5	1197.9	1049.3	481.4	2.76	0

#### *Nitrogen oxides (NO<sub>x</sub>)*

The main sources of emissions of nitrogen oxides are combustion in residential facilities and traffic. In 2013 the emissions resulted from the inventory of pollutant emissions into the atmosphere in the county of Maramures is 3107.87 tons of nitrogen oxides. Evolution for annual emissions of the nitrogen oxides in the atmosphere over the past ten years is shown in **Table 4.2.2**:

**Table 4.2.2** Annual emission of NO<sub>x</sub>

<b>Maramures county total</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Annual emission NO <sub>x</sub> (t/year)	1983	1741	1680.3	2470.2	2873.9	2253.5	3199.3	4130.7	4048.9	0

#### *Particulate matter*

The main sources of particulate emissions come from burning residential sector (especially thermal power plants that use that type of fuel wood and wood waste) and the production of asphalt and asphalt roads and from woodworking. The emission of particulate matter was inventoried from road traffic, but that is much lower than in other sectors.

In the year 2013, 8,104 tons of total suspended particulate emissions were inventoried (22.6 % from industry and 77.4 % from institutional residential combustion, including emissions from the combustion of firewood in households).

Evolution for annual emissions of the total particulate matter during 2004-2013 is presented in Table 4.2.3:

**Table 4.2.3** Annual emission of particulate matter

<b>Maramures</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
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county total										
Annual emission PM (t/year)	1696.4	2020.9	2255.5	1524	1125.2	1691.6	3262.8	1398.2	3355.5	8104

Air quality monitoring in Baia Mare agglomeration was done by 5 automatic stations and a manual networking.

The statistics data for 2013 recorded at the automatic monitoring stations in Baia Mare agglomeration are shown in **Table 4.2.4**.

**Table 4.2.4** - Relevant data regarding performance of automatic air quality networking in Baia Mare agglomeration – 2013 year

City	Station	Station type	Pollutant type	No.	The annual average concentration $\mu\text{g}/\text{m}^3$
Baia Mare	MM1	traffic		7776	7.2
				334	7.2
				8024	22.9
				5862	0.16
				4490	2.46
				325	21.2
				324	0.015
				264	0.32
	MM2	Urban exposure		6577	4.1
				281	4.1
				6965	20.1
				6697	0.22
				7045	33.6
					-
				315	21.3
				273	20.1
				301	18.7
				287	0.016
				266	0.36
	MM3	Residential exposure		7119	5.5
				308	5.5
				227	6.4
				7067	0.27

				7212	30.6
				4197	3.75
				208	21.6
				324	27.1
				324	0.015
				324	0.36
	MM4	Industry		3466	6.1
				148	6.1
				1852	11.0
				2248	0.30
				2965	31.5
				98	24.8
				100	22.3
	MM5	Industry		100	0.035
				86	0.66
				3205	6.6
			134	6.6	
			2674	11.0	
			3020	0.31	
			3498	39.6	
			126	27.2	
	120	27.1			
	120	0.027			
	112	0.61			

### *Nitrogen oxides (NOx)*

Compared to the limit values stipulated in Law 104/2011, for an averaging time of 1 year (VL = 40  $\mu\text{g}/\text{m}^3$ ), annual average concentrations recorded in 2013 were between 6.4  $\mu\text{g}/\text{m}^3$  at MM3 station and 22.9  $\mu\text{g}/\text{m}^3$  at MM1 station. There was no exceedance for annual and hourly limit value, maintaining the same trend of development as in the previous year.

### *Sulphur dioxide (SO<sub>2</sub>)*

Reported to the accepted limit values stipulated in Law 104/2011 on ambient air quality for sulphur dioxide (350 µg/m<sup>3</sup> hourly average concentrations and 125 µg/m<sup>3</sup> daily mean concentrations) in year 2013 there were no exceedance in these 5 stations.

The annual average values determined were between 4.1 µg/m<sup>3</sup> at MM2 and 7.2 µg/m<sup>3</sup> at MM1 station.

### *Particulate matter*

*In 2013 gravimetric and automatic determinations were made for PM<sub>10</sub> at all stations and gravimetric determination were conducted for PM<sub>2.5</sub> at MM2 station.*

*Periods of lack of data is due to technical problems during the 5 stations. Since June 2013 MM4 and MM5 stations have not worked, they being stopped indefinitely.*

Average annual concentration for PM<sub>10</sub> resulted from measurements using nephelometric method is between 21.3 µg/m<sup>3</sup> at MM2 and 27.2µg/m<sup>3</sup> at MM5 station; there were no exceedance of the annual limit value.

For PM<sub>10</sub> gravimetric determinations mean annual values ranged between 20,1 µg/m<sup>3</sup> at MM2 station and 27,1 µg/m<sup>3</sup> at MM3 and MM5 stations without exceeding the annual limit value.

Average daily concentrations values higher than the limit value of 50 mg / m<sup>3</sup> were recorded mainly due to the fuel combustion for residential heating in winter only.

Compared to the 35 average daily concentrations values higher than the limit value of 50 mg / m<sup>3</sup> accepted, no exceedances were recorded (MM1 stop - 6 overruns; MM2 station - 7 overruns; MM3 Station - 30 exceedances; MM4 station - free overruns; MM5 station - 5 overruns).

In 2013 there was no accidental pollution, with major impact on the environment and citizens.

thousand m<sup>3</sup>.

### ➤ **SOIL**

Evolution of the distribution of agricultural land in Maramures County during 2009 - 2013 is presented in Table 4.2.5.

**Table4.2.5** Distribution of agricultural land in Maramures

No.	Usage class	Aria, ha				
		2009	2010	2011	2012	2013
1	Arable	83795	83784	82855	81619	81206
2	Grassland	99734	98279	96495	96654	96888
3	Meadows	119935	119730	120260	120658	120937
4	Vineyards	243	243	243	248	243
5	Orchards	6590	6304	6339306192	6199	6254
		<b>31297</b>	<b>309325</b>		<b>305373</b>	<b>305528</b>

Compared to 2012, there was a slight improvement of the surface, according to the categorization of the total agricultural use, this having a positive impact on the environment.

In 2013 year, in Maramures County there was no accidental pollution of soil.

### 4.3. Satu Mare County

#### ➤ AIR

##### *Sulphur dioxide (SO<sub>2</sub>)*

In 2013, in Satu Mare County at development of emission inventory based on Corinair factors, were obtained a total of 408.5 tons of SO<sub>2</sub> emitted comparing with 108.3 tons in 2012.

**Table 4.3.1** Annual quantities of sulphur dioxide

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2103
<b>SO<sub>2</sub> Annual emission (t/year)</b>	1309.9	1364.7	1060.6	1348.2	2163.8	763.4	715.4	39.5	59.036	109.3	408.5

The main activities which result in significant amounts of emissions of sulphur dioxide are related to road transport activities, combustion in manufacturing industry and non-industrial combustion plants.

##### *Nitrogen oxides (NO<sub>x</sub>)*

The total quantities of nitrogen oxides emissions in 2013 are 3014 tons / year of which 1346 tons come from road traffic.

**Table 4.3.2 -** Annual quantities of nitrogen oxides (tons/year)

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2103
<b>NO<sub>x</sub> Annual emission (t/year)</b>	130	1364.7	1060.6	1348.2	2163.8	2451.5	2587.3	368.8	428	458.08	3014

In the year 2013, in Satu Mare County, the air quality was monitored through automated stations monitoring air quality that are part of the National Network for Monitoring Air Quality.

In 2008 an urban background station was placed in Satu Mare - SM1 and in 2009 a suburban station / traffic was placed in Carei - SM2.

##### *Sulphur dioxide (SO<sub>2</sub>)*

In Satu Mare, at the SM1 station the average annual value was 6.58 µg /m<sup>3</sup>, with an 80.0% data capture. The values from SM2 station present a data capture of 40.8%; the annual

average is  $5.61 \mu\text{g} / \text{m}^3$ . Small capture of data is due to  $\text{SO}_2$  analyzer failure, SM2 station was stopped on 28.07.2013.

#### *Nitrogen oxides ( $\text{NO}_x$ )*

Annual mean concentration determined at SM1 is  $17.91 \mu\text{g} / \text{m}^3$  obtained with a data capture of 13.30% and the average value at SM2 is  $10.98 \mu\text{g} / \text{m}^3$  with a data capture of 40.5%. Small capture of data is due to  $\text{NO}_x$  analyzer failure in SM1 station (from 11.03.2013) and SM2 station was stopped on 28.07.2013.

#### *Particulate matter*

Fine particulate matter PM10 fraction is determined by both monitoring stations, PM2.5 fraction of particulate matter is determined only at SM1 station from Satu Mare.

The gravimetric PM2.5 has a data capture of 76.7%; the annual average value is  $15.08 \mu\text{g} / \text{m}^3$ . The maximum value determined gravimetrically is  $44.65 \mu\text{g} / \text{m}^3$ , on 18 December 2013. Fine particulate matter fraction 10 micrometers, taken at SM1 station recorded a data capture of 67.10%. In Carei, at SM2 station, because of the failure of sampler was recorded a data capture of 28.2% to nephelometry with average annual value of  $19.28 \mu\text{g} / \text{m}^3$ , gravimetrically were obtained a data capture of 35.3% with an average annual value of  $24.19 \mu\text{g} / \text{m}^3$ . The maximum value gravimetrically obtained is  $48.53 \mu\text{g} / \text{m}^3$  at station SM1, on 27.01.2013; a similar situation is found at station SM2 - Carei with maximum gravimetrically obtained of  $48.53 \mu\text{g} / \text{m}^3$  on 28.01.2013.

In 2013 on the county's territory no major environmental accidents affecting air quality were registered.

#### ➤ **SOIL**

Soils repartition in Satu Mare County on categories of used farmland includes: arable land, pastures, meadows, vineyards and orchards.

In Satu Mare County an agricultural area of 318,454 ha was recorded in 2013.

Arable lands and grasslands have the largest share of the agricultural land, 72.2% and 24.44% respectively.

**Table 4.3.3** Land use in Satu Mare County

No.	Usage class	Aria, ha					
		2008	2009	2010	2011	2012	2013
1	Arable	221,653	221,577	227,853	229,775	229,775	229,775
2	Grassland	85,296	85,111	79,176	77,821	77,821	77,821
3	Meadows	7,122	7,159	6,800	7,433	7,433	7,433
4	Vineyards	3,385	3,425	3,662	3,425	3,425	3,425
		317,456	317,278	317,491	318,454	318,454	318,454

In 2013 there was no major environmental pollution or accidental pollution.

#### 4.4. Suceava County

➤ **AIR**

*Sulphur dioxide (SO<sub>2</sub>)*

Evolution of total emissions of sulphur dioxide inventoried in Suceava County in 2011-2013, is presented in Table 4.4.1.

**Table 4.4.1** Annual emissions of sulphur dioxide (tone/year)

Year	2011	2012	2013
SO <sub>2</sub>	1242	1414	853

In 2013 year, a percentage of 75.7 % of total emissions of SO<sub>2</sub> from county resulted from the NFR code 1.A.1.a “electricity and heat production”, such as coal burning plant belonging to SC TERMICA SA Suceava (Suceava power plant).

Inter-annual variability of total emissions of SO<sub>2</sub> is given mainly by fluctuation in annual quantities of coal used in CET Suceava and its sulfur content, with the major contribution of this system to the total SO<sub>2</sub> emissions in the county

Decrease of SO<sub>2</sub> emissions in 2013 compared to 2012 is due to the fact that SC TERMICA SA Suceava (CET on coal) worked only until April 2013.

*Nitrogen oxides (NO<sub>x</sub>)*

Evolution of total emissions of nitrogen oxides inventoried in Suceava County from 2011 ÷ 2013 is presented in Table 4.4.2:

**Table 4.4.2** Annual emissions of nitrogen oxides

Year	2011	2012	2013
NO <sub>x</sub>	5722	5783	4448

\* Relative to 2012, in 2013 has changed the estimation methodology for traffic emissions, directly correlated with mileage reported to RAR type of vehicles in the county of Suceava, so that annual NO<sub>x</sub> emissions related to road transport significantly decreased in 2013, compared to the previous year.

The major share in total NO<sub>x</sub> emissions is related to road transport (the exhaust gases) representing approx. 65% of the total county emissions in 2013, out of which approx. 55% is due to heavy traffic.

Other activities that contributed to the total NO<sub>x</sub> emissions in 2013 are:

- residential combustion plants, NFR code 1.A.4.bi with 14% from all county
- producing electricity and heat in combustion plants, of the SC TERMICA SA Suceava, code NFR 1.A.1.a, with 8,5% from all county;
- combustion in manufacturing industries and construction - other stationary sources; code NFR 1.A.2.f.i., with 5,7% from all county;

- Non-road mobile machinery and equipment manufacturing and construction industries, NFR code 1.A.2.f.ii. , with 4% .

*Particulate matter*

About 96 % of total particulate emissions inventory in 2013 in the county come from residential installations for heating and cooking (area sources) included in NFR code 1.A.4.bi, mainly from burning wood. The contribution of emissions from road transport was about 2.3 % for PM10 particulates and 2% for PM2.5 fraction.

**Table 4.4.3** Quantities of particulate matter emitted to air

<b>Year</b>	<b>Particulate Matter</b>	<b>PM2,5 particulate matter</b>	<b>PM10 particulate matter</b>
2011	3843	3674	3887
2012	1387	1246	1284
2013	4606	4378	4680

\* Lower values of the particulate emissions in 2012 are due to lack of reporting by 2/3 of the county town halls of the wood usage by the population of the respective localities (moast of them located in rural areas) In 2013 air quality monitoring was performed in Suceava with four automatic monitoring stations belonging to the National Network for Monitoring Air Quality, the following pollutants regulated by Law no. 104/2011 and meteorological parameters:

- SV1 urban background station: sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>, NO<sub>x</sub>), carbon monoxide (CO), ozone (O<sub>3</sub>), benzene (C<sub>6</sub>H<sub>6</sub>), toluene, ethylbenzene, o-, m-, p-xylene, particulate matter PM<sub>2.5</sub> (gravimetric), PM<sub>10</sub> (gravimetric and automatic) and meteorological parameters (wind speed and direction, pressure, temperature, solar radiation, relative humidity, precipitation).
- SV2 industrial station: sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>, NO<sub>x</sub>), particulate matter PM<sub>10</sub> (gravimetric) and meteorological parameters (wind speed and direction, pressure, temperature, solar radiation, relative humidity, precipitation).
- SV3 traffic station: nitrogen oxides (NO, NO<sub>2</sub>, NO<sub>x</sub>), particulate matter PM<sub>10</sub> (gravimetric and automatic) and meteorological parameters (wind speed and direction, pressure, temperature, solar radiation, relative humidity, precipitation).
- EM-3 regional background station: sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>, NO<sub>x</sub>), ozone (O<sub>3</sub>), particulate matter PM<sub>10</sub> (gravimetric) and meteorological parameters (wind speed and direction, pressure, temperature, solar radiation, relative humidity, precipitation).

*Sulphur dioxide (SO<sub>2</sub>)*

Measurements from 2013 to sulphur dioxide showed that the air quality in this region was excellent too good at SV2 Suceava stations and excellent at EM3 Poiana Stampei.

#### *Nitrogen oxides (NO<sub>x</sub>)*

Measurements from 2013 to nitrogen dioxide showed that the air quality is from excellent to good in SV2 Suceava and SV3 Siret stations and excellent at EM3 Poiana Stampei.

#### *Particulate matter*

As for the particulate matter the highest values of daily average concentrations of PM10 were recorded at the station SV2 industrial environments.

PM10 daily average concentrations recorded in the cold season (October-March) were higher than in the warm season (April-September), concentrations higher than limit value being recorded in winter in all four county monitoring stations, except one value measured at SV2 station. The value of 51.97 µg/m<sup>3</sup> was registered in 29.07.2013 in calm atmospheric conditions and lack of rainfall, weather phenomena favoring stagnation and accumulation of dust at SV2 station.

The annual limit value for the protection of human health ( 40 µg / m<sup>3</sup>) was not exceeded in any monitoring station, the highest annual average concentration was 29.1 µg / m<sup>3</sup> recorded at SV2 .

In 2013 in Suceava county occurred no major environmental accidents that could affect air quality.

#### ➤ **SOIL**

Evolution of the distribution of agricultural land use in Suceava County, in 2009-2013 is shown in the table below

**Table 4.4.4** Evolution of land distribution

Type of land	Surface (ha)				
	2009	2010	2011	2012	2013
Arable	181.127	180.972	180.678	180.372	180.240
Pastures	91.167	91.596	90.274	90.570	90.547
Meadows and natural	74.394	74.136	73.960	74.053	73.898
Orchards	2.801	2.776	3.008	2.810	2.959
<b>TOTAL</b>	<b>349.489</b>	<b>349.480</b>	<b>347.920</b>	<b>347.805</b>	<b>347.644</b>

In terms of soil degradation in the year 2013, the critical areas that are affected by deep erosion and active landslides are Todireşti - Osoi Hill, part of the second order monitoring.

In 2013 there was no major environmental pollution or accidental pollution.

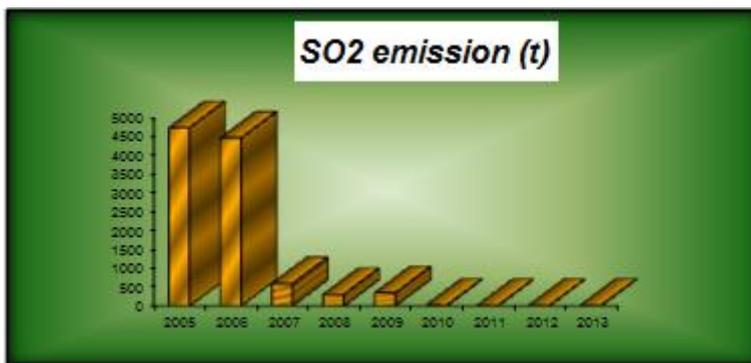
## 4.5. Tulcea County

### ➤ AIR

#### *Sulphur dioxide (SO<sub>2</sub>)*

In 2013, the amount of SO<sub>2</sub> emitted in the atmosphere (amount resulting from the calculation methodology CORINAIR 2009) was of 9137 tonnes of which:

- Combustion in energy and transformation industries	2.069 t;
- Non-industrial combustion plants	4,909 t;
- Combustion in manufacturing industry	0,411 t;
- Production processes	0,349 t.



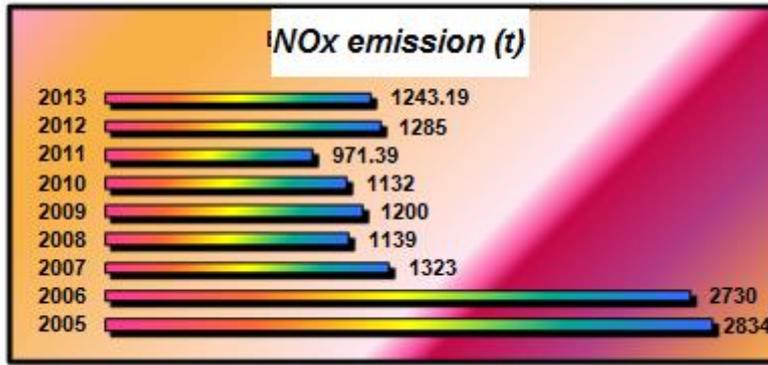
**Figure 4.5.1 Emission of SO<sub>2</sub>**

There is a decrease in SO<sub>2</sub> emissions by 6.9 % from the previous year. This decrease is mainly due to the use of natural gas instead of liquid fuels.

#### *Nitrogen oxides (NO<sub>x</sub>)*

NO<sub>x</sub> emissions come mainly from:

➤ Combustion in energy and transformation industries	19%;
➤ Non-industrial combustion plants	27%;
➤ Combustion in manufacturing industry	7%;
➤ Road transport	32%;
➤ Mobile sources and machinery	15%.



**Figure 4.5.2** Emission of NO<sub>x</sub>

In 2013, there is a decrease in NO<sub>x</sub> emissions by 3.3 % from the previous year. A cause of this phenomenon is the use of low NO<sub>x</sub> burners at SC Energoterm SA Tulcea.

At the county level, there are three air quality automatic monitoring stations as part of the National Network for Air Quality Monitoring (RNMCA) located in accordance with criteria established by the European directives on air quality to protect human health, vegetation and ecosystems to assess the influence of different types of sources of emissions.

To the above mentioned are added laboratory equipment used to measure the concentrations of heavy metals: lead (Pb), cadmium (Cd), arsenic (As), nickel (Ni), particulate matter concentrations of aerosols and deposits (PM10).

**Table 4.5.1** Air quality monitoring stations

Type of stations	Number	Location
Traffic	1	The station is located about 10 m from the intersection, with intense traffic intersection
Industrial	1	The station is located about 1 km from Tulcea Western industrial platform
Suburban/traffic	1	The station is located on Route 22 out of Isaccea

*Sulphur dioxide (SO<sub>2</sub>)*

Determining the level of air pollution with sulphur dioxide was performed in 2013 by air quality monitoring automatic stations: TL1 - Mushroom Traffic, TL2 and TL3 Public -Transport - Isaccea.

Measurements of sulphur dioxide carried in Tulcea, reveals the following:

- There were no problems, with hourly values recorded in 2013 falling below the limit value ( 350 mg / mc)
- Annual averages from three stations were under VL 20 mg/m<sup>3</sup>
- There were no exceedance of the alert threshold of 500 (mg/m<sup>3</sup>) at any monitoring station.

*Nitrogen oxides (NO<sub>x</sub>)*

Determining the level of air pollution with nitrogen dioxide was performed in 2013 by air quality monitoring stations TL2 and TL3 Public -Transport and Isaccea.

Hourly average values for NO<sub>2</sub> was under the hourly limit value of 200 mg/m<sup>3</sup>.

Analyzing NO<sub>2</sub> measurements it appears that in 2013 no exceedances of the alert threshold of 400 µg / m<sup>3</sup> were recorded and nor of the annual limit value of 40 µg /m<sup>3</sup>.

*Particulate matter*

In 2013, measurements for PM10 were made at two automatic air quality stations: TL1 and TL3, namely TL1 Ciuperca – traffic station and TL 3 Isaccea parallel to gravimetric determinations. Valoarea limită anuală și orară pentru protecția sănătății nu a fost depășită în nici una din stațiile automate de monitorizare a calității aerului situate în județul Tulcea..

Annual and hourly limit value for health protection was not exceeded in any of the automatic stations located in Tulcea.

During 2013 no major environmental incidents with impact on air quality were recorded

➤ **SOIL**

**Table 4.5.2** shows the distribution of land uses in different categories.

**Table 4.5.2** Distribution of soil by use

Year	Use category (ha)				TOTAL
	Arable	Pasture and meadow	Vineyard	Orchards	
2008	291.923	62.806	8.202	1.010	363.941
2009	294.039	60.688	8.202	1.012	363.941
2010	291.866	62.980	8.274	821	363.941
2011	294.039	60.869	8.202	831	363.941
2012	194.039	60.869	8.202	831	363.941
2013	294.180	60.869	8.102	790	363.941

Source: DADR Tulcea

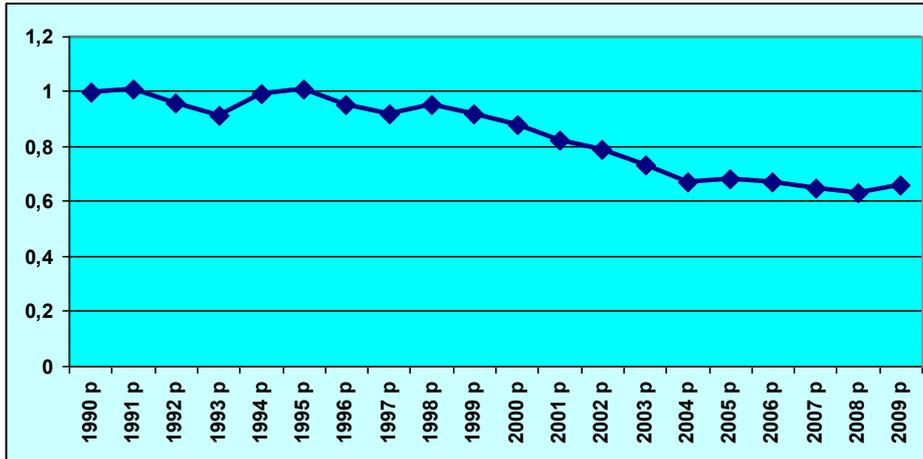
In 2013 there was no major environmental pollution or accidental pollution.

**II. UKRAINE**

**Informations regarding environmental description in Ukraine are based on documents from websites: urile <http://eng.menr.gov.ua/index.php/norbaza> and [http://www.kmu.gov.ua/control/en/publish/article?art\\_id=91651](http://www.kmu.gov.ua/control/en/publish/article?art_id=91651)**

➤ **AIR**

Lately, in Ukraine there was a reduction of pollutants in the atmosphere due to the economic crisis and recession. However, the country has made significant steps to protect air quality, reducing the rate of emission of greenhouse gases (Figure 4.6.1).



**Figure 4.6.1** Changes in atmospheric emissions per unit GDP, 1990 ÷ 2009

Emissions of pollutants in Ukraine into the atmosphere came from industrial sources, around 62 %, and the remaining emissions from stationary and mobile sources (Table 4.6.1).

### **Stationary and mobile sources**

**Table 4.6.1** Variation of atmospheric pollutants from stationary and mobile sources for 2000 ÷ 2011

Year	The amount of emissions of pollutants (thousand tons)			CO <sub>2</sub> emissions (thousand tons)		
	Total	Stationary sources	Mobile sources	Total	Stationary sources	Mobile sources
2000	5.908,6	3.959,4	1.949,2	...	...	...
2001	6.049,5	4.054,8	1.994,7	...	...	...
2002	6.101,9	4.075,0	2.026,9	...	...	...
2003	6.191,3	4.087,8	2.103,5	...	...	...
2004	6.325,9	4.151,9	2.174,0	126,9	126,9	...
2005	6.615,6	4.464,1	2.151,5	152,0	152,0	...
2006	7.027,6	4.822,2	2.205,4	178,8	178,8	...
2007	7.380,0	4.813,3	2.566,7	218,1	184,0	34,1
2008	7.210,3	4.524,9	2.685,4	209,4	174,2	35,2
2009	6.442,9	3.928,1	2.514,8	185,2	152,8	32,4
2010	6.678,0	4.131,6	2.546,4	198,2	165,0	33,2
2011	6.877,3	4.374,6	2.502,7	227,7	202,2	25,5

In terms of air pollution in Ukraine - 14 cities exceed 100 thousand tons. The total amount of emission of pollutants into the atmosphere in these cities represents 54.2 % of total emissions.

**Table 4.6.2.** Variation of emissions of pollutant in atmosphere in cities in Ukraine (Thousand tons)

No	Cities	2000	2005	2007	2008	2009	2010	2011	Percentage of the total area
1.	Burštın	118,9	176,5	246,1	218,3	191,2	146,8	198,7	4,5
2.	Debaltseve	108,6	95,5	101,9	114,9	119,2	112,8	127,0	2,9

3.	Dnipropetrovsk	97,3	128,8	122,8	120,3	105,6	110,0	110,0	2,5
4.	Dniprodzerjînsk	105,0	126,1	120,7	110,3	110,8	108,5	124,7	2,8
5.	Zaporijjjea	135,5	153,9	147,5	130,4	94,3	109,6	117,1	2,7
6.	Zelenodolsk	79,4	108,6	142,6	146,0	133,6	173,4	205,3	4,7
7.	Enerhodar	80,8	98,4	75,5	80,6	79,2	100,3	104,9	2,4
8.	Komsomolske	95,2	104,4	98,8	115,5	95,1	108,1	126,2	2,9
9.	Krivoi Rog	443,4	523,9	608,5	449,4	321,6	395,0	358,6	8,2
10.	Kurahove	117,2	103,4	160,2	162,8	121,9	123,9	166,2	3,8
11.	Luhansk	144,2	118,8	150,6	175,8	150,4	160,7	142,6	3,3
12.	Mariupol	340,4	425,7	421,1	359,3	283,9	364,3	382,4	8,7
13.	Novi Svet	121,8	123,7	108,6	98,1	104,8	109,9	105,4	2,4
14.	Hartîzk	88,4	68,9	91,4	73,3	73,0	75,4	103,1	2,4
	<b>Total</b>	<b>2.076,1</b>	<b>2.356,6</b>	<b>2.596,3</b>	<b>2.555,0</b>	<b>1.984,6</b>	<b>2.198,7</b>	<b>2.372,2</b>	<b>54,2</b>

Emissions of pollutants from stationary sources are:

- The amount emissions of SO<sub>2</sub> is 1 342 600 tons/year (representing 30.7 % of the total pollutants);
- The amount emissions of CO is 1 066 100 tons/year (representing 24.4% of the total pollutants);
- The amount emissions of CH<sub>4</sub> is 878 200 tons/year (representing 20.1% of the total pollutants)
- The amount emissions of particulate matter is 606 600 tons/year (representing 13.9 % of the total pollutants)
- The amount emissions of NO<sub>x</sub> is 381 900 tons/year (representing 8.7 % of the total pollutants)

**Table 4.6.3** - Emissions of pollutant from stationary sources

Pollutants	Number of emissions unities		Emissions Volume			
	Unities	% until 2010	Tons	% until 2010	Increase decrease compared with 2010	Variation %
Metals and their compounds	4.584	96,0	32.660,57	98,5	-491,994	0,7
Arsenic and its compounds	421	96,3	56,78	108,7	4,56	0,0
Lead and its compounds	37	88,1	5,147	108,4	0,399	0,0
Particulate matter	6.674	95,7	606.615,34	107,9	44.548,537	13,9
NO <sub>x</sub>	7.906	95,7	381.882,87	110,9	37.631,951	8,7

SOx	4.306	96,9	1.342.561,9	110,4	126.689,053	30,7
CO	7.400	96,0	1.066.118,4	100,2	2.287,411	24,4
Ozone	68	107,9	14,783	105,1	0,712	0,0
NMVOC	5.179	94,7	65.213,128	98,8	-802,787	1,5
Formaldehyde	404	101,3	284,405	109,4	24,369	0,0
CH4	4.005	100,7	878.159,56	103,9	33.341,908	20,1
POPs	153	90	266,938	59,9	-178,618	0,0
Benzo ( a ) pyrene	32	100	0,773	100,8	0,006	0,0
Fluorine and fluorine compounds	734	96,6	209,61	72,2	-80,82	0,0
Cyanide	73	104,3	272,795	106,3	16,183	0,0
Freon	212	104,4	80,534	74,7	-27,238	0,0

### **Industrial sources**

In Ukraine, total emissions from industrial sources represent about 25.2%, higher by 2.3 % compared to 2010. After manufacturing, mining represents 19.6 % of total emissions which is higher by 0.5 % more than previous year, according to Table 4.6.4.

**Table 4.6.4 – Emissions from industrial sources**

	Number of enterprises	Emissions			
		Pollutants		CO <sub>2</sub>	
		Thousands tons	%	Thousands tons	%
Agriculture	946	72,7	102,5	790,5	121,6
Forestry and related services	121	2,0	91,4	33,6	105,1
Fishing	12	0,1	81,7	0,5	327,4
Extractive Industry	511	856,0	100,5	3.784,9	156,4
Fossil fuel extraction	258	743,2	100,7	2.329,7	110,2
Minerals	253	112,8	99,4	1.455,2	476,0
Manufacturing industry	3.337	1.387,3	103,0	89.501,4	151,3
Including food production food, drink and tobacco products	1.010	31,9	97,9	2.674,3	107,2

Coke, refinery products	42	93,2	107,5	5.749,9	99,1
Chemical and petrochemical industries	160	67,8	106,6	7.190,7	124,5
Production of non-metallic products	501	55,3	106,3	7.133,9	200,5
Production of metal	305	1.102,3	102,3	6.4071,3	162,3
Factory equipment	384	10,3	110,4	1.198,9	241,0
Production and distribution of electricity, gas and water	614	1.804,5	112,7	100.531,2	105,1
Industry of transport	951	195,4	99,4	5.710,6	102,0
Other industries	1.656	35,3	98,1	1.249,5	177,4

According to the State Statistics Service of Ukraine, in 2011, 8699 enterprises emitted pollutants into the atmosphere. Most of these companies are concentrated in the Donetsk region - Nipru, especially in Donetsk regions (11.4 %), Lugansk (6.5 %), Dnipropetrovsk (5%).

## ➤ WATER

Currently the annual demand of water resources for the population and industry is about 15 billion. Most water is extracted from the Nipru River about 8.7 km<sup>3</sup>, from Seversky Donets about 1.5 km<sup>3</sup>, the Southern Bug about 0.4 km<sup>3</sup> and 0.6 km<sup>3</sup> from Nistru. In 2011 almost all regions of Ukraine recorded an increased intake of water consumption. The major users of water areas are: Dnipropetrovsk, Donetsk, Zaporizhzhya, Kiev, Kherson and Autonomous Republic of Crimea.

In 2011 large consumers of water were industrial enterprises, which raises the consumption to 5.6 billion m<sup>3</sup> representing 38 % of total intake in the country (including power plants, nuclear power plants, combined steel and mining), agriculture 40%, and utility 21%.

Losses during transport amounted to 2.3 billion m<sup>3</sup> (15 % of consumption).

Distribution of water sources (million m<sup>3</sup>) of the territory of Ukraine is shown in Table 4.6.4.

**Table 4.6.4** Water distribution

Unit	2000	2005	2006	2007	2008	2009	2010	2011
<b>Amount of sewage</b>	18.282	15.083	15.327	16.352	15.729	14.478	14.846	14.651
<b>Groundwater quantities</b>	2.987	2.449	2.408	2.315	2.175	2.007	2.023	1.961

<b>Process water</b>	6.957	5.706	5.783	6.162	5.970	5.149	5.511	5.514
<b>Water</b>	3.311	2.409	2.298	2.192	2.103	1.956	1.917	1.860
<b>Water treatment plants</b>	7.992	7.688	8.104	7.768	7.518	7.581	7.425	7.687

After analyzing the data, it appears that the major polluters of water are steel and coal industries. The use of water in industrial sectors leads to contamination of drinking water. The contaminated water is Seversky Donets Basin and the Black Sea rivers.

**Table 4.6.4** - Pollutants in surface waters

<b>Rivers</b>	<b>Pollutants</b>	<b>Pollutants from waste water</b>
Bug Western	Ammonia, nitrite , iron and total chromium	Lead
Danube	ammonia , nitrite , iron, zinc and chromium total	BSK5
Nistru	ammonia , nitrite , iron, zinc and total chromium , and nickel detergents	COD and BSK5
Dnipro	ammonia and nitrites, zinc , chromium, iron and total chromium , nickel, phenols and oil products	BSK5 and COD , ammonia nitrogen and nitrate
Southern Bug	ammonia nitrogen and nitrite	
Seversky Doneț	ammonium, nitrite and nitrate , phenols, total iron	COD
Priazovskiye River	ammoniac nitrogen , total chromium and petroleum products	
Rivers flowing into the Black Sea	nitrogen , nitrite and total iron	BSK5 and COD
Black Sea	nitrite and ammonium nitrogen	
Azov Sea	total iron oxide and nitrite	

Azov and Black Sea are located on the southern border of Ukraine. The degree of human impact on marine ecosystems is primarily due to commercial activities such as industry, agriculture and transport.

## ➤ SOIL

The area of land in Ukraine is 60.354.800 ha. According to the State Agency of Land Resources of Ukraine, the country's land area distributed according to the type of land is presented in Table 4.6.5. These types of land represent about 70.9 % of the total area.

**Table 4.6.5 – Type of land**

Type of land	Land area	
	Thousands ha	%
Agricultural lands	42.776,9	70,9
of which:		
agricultural lands	41.557,6	68,9
Arable lands	32.498,5	53,8
Other agricultural lands	1.219,3	2,0
Forest of which:	10.611,3	17,6
Covered by forest	9.683,3	16,1
Not covered with forest vegetation	208,7	0,3
Other forest land	315,6	0,5
Shrubs	403,7	0,7
Built- up Land	2.523,2	4,2
For building	473,5	0,8
Industrial Lands	223,2	0,4
Personal Lands	152,3	0,3
Commercial Land	54,5	0,1
Land for public use	282,1	0,5
Mixed land use	29,0	0,0
Land used for communication and transport	495,1	0,8
Land used for technical infrastructure	68,1	0,1
Land used for camping	745,4	1,2
Wetlands open	980,1	1,6
Steppe	17,7	0,0
Sand, grottos	1.022,9	1,7
<b>Total land</b>	<b>57.932,1</b>	<b>96,0</b>
Territory covered by surface water	2.422,8	4,0
<b>Total (zone)</b>	<b>60354,9</b>	<b>100,0</b>

Ecological imbalance fund is significantly affected by land use, leading to a depletion of wild flora and fauna.

The main impact of anthropogenic factors comes from the land degradation, soil contamination and agricultural development.

Soils in cities are polluted due to industrial sources, vehicles. Accidental Pollution is a problem for soil quality.

**5. ANY EXISTING ENVIRONMENTAL PROBLEMS WHICH ARE RELEVANT TO THE PLAN OR PROGRAMME INCLUDING, IN PARTICULAR, THOSE RELATING TO ANY AREAS OF A PARTICULAR ENVIRONMENTAL IMPORTANCE, SUCH AS AREAS DESIGNATED PURSUANT TO DIRECTIVES 79/409/EEC AND 92/43/EEC**

## **ROMÂNIA**

Information regarding Site of Community Importance and Special Protection Areas from the territory of four counties in the eligible area were taken from the MMAP web site- <http://www.mmediu.ro/articol/date-gis/434>.

The photos are from: Environmental Status Report Botoșani, Maramureș, Satu Mare, Suceava and Tulcea for year 2013, published on the websites of Environmental Protection Agencies counties.

### ***Botoșani County***

Botosani County is instituted 7 Site of Community Importance, 4 Special Protection Areas and nature reserves. **Figure 5.1** shows the distribution of SCI, SPA and nature reserves in the Botosani County.

Natural Reserves are divided into forest and floristic reserves type.

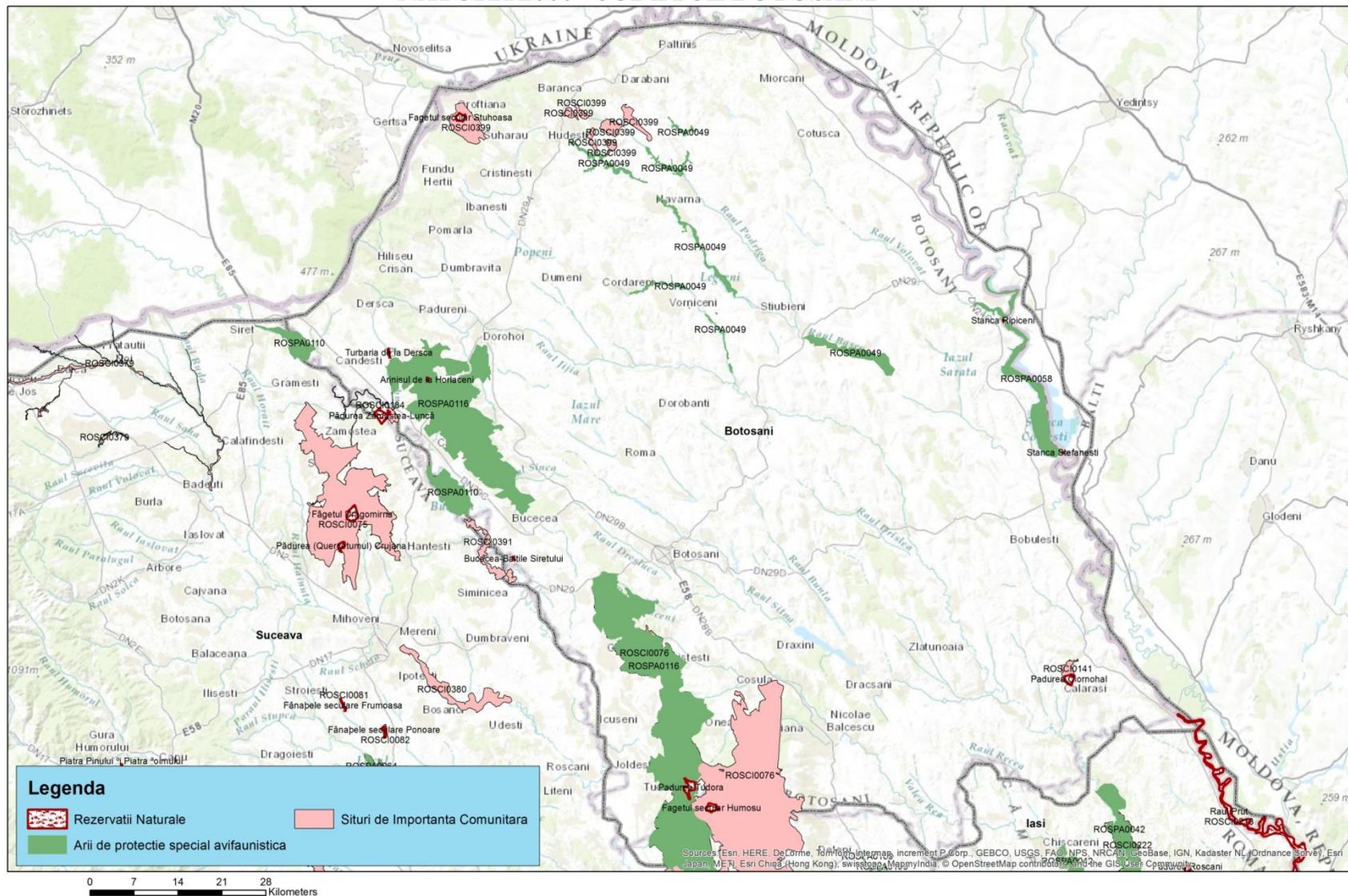
#### **➤ Forest type**

- Tudora Forest 119,0 ha;
- Ciornohal Forest 76,5 ha;
- Arinis from Horlăceni 5,0 ha;
- Secular Fagetul Stühle 0,5 ha.

#### **➤ Floristic type**

- Rabies from Dersca ( Lozna ) 10,0 ha;
- Bucecea ponds Siret 2,0 ha;
- Floristic Reserve Rock - Ștefănești 1,0 ha;
- Floristic Reserve Ripiceni 1,0 ha.

## NATURA 2000 - JUDETUL BOTOSANI



## I. SPECIAL PROTECTION AREAS –SPA

In Botosani County 4 SPA are declared.

The total declared area is 29453, 68 ha.

### ➤ **ROSPA0058 Lake Stânca Costești**

Location – part from Stefanesti city and Ripiceni and Manoleasa municipality.

Protected species : 44 species of wild birds mentioned in Annex 1 of the Birds Directive, spotted eagle (Aquila clanga ), yellow heron (Ardeola ralloides), the diver winter( Podiceps auritus) , ferruginous duck (Aythya nyroca) , honey buzzard ( Penis auritus ) .

Surface: 2161 ha.



ROSPA0058 Lacul Stânca Costești

### ➤ **ROSPA0049 - Valea Ibăneșei-Bașeului-Podrigăi Ponds**

**Location-** part of Darabani and Saveni city and Cordăreni, Hănești, Hudești, Havârna, Mileanca, Vorniceni, Ungureni, Știubieni, Vlăsinești and Concești Municipality.

**Pools:** Negreni, Mileanca, Cal Alb, Ibaneasa, Vorniceni, Havirna, Hanesti;

**Protected species** : 20 species of birds in Annex I of the Birds Directive, Increase gray ( Porzana parva ), great egret ( egret ), heron (Ardea purpura ), Rent pond ( Sterna hirundo ) .

Surface: 2705 ha



Acumulare Cal-Alb-*Ciconia nigra*

Hanești-*Phasianus colchicus*

ROSPA0049Iazurile de pe Valea Baseului Podrigăi Ibăneșei

➤ **ROSPA0110 - Rogojești Bucecea Accumulations**

**Location:** Botoșani city, Mihăileni Municipality, and territories from Suceava city.

**Protected species:** 22 species in Annex 1 of the Birds Directive.

Surface: 1537, 38 ha



Acumulările Rogojești Bucecea

➤ **ROSPA0116 - Dorohoi Șaua Bucecei**

**Location:** Territories from Suceava, Iasi and Botosani city.

**Protected species:** 15 species of birds in Annex 1 of the Birds Directive.

**Surface** - 23050, 3 ha.

## II. SIT OF COMUNITY IMPORTANCE-SCI

In Botosani County are **7** Sits of community importance.

**Total Surface: 16978, 17 ha.**

➤ **ROSCI 0141 - Ciornohal Forest**

Location: Călărași village;

**Community Habitat type:** Dacian oak and hornbeam forests

**Floristic species of Community interest:** *Iris aphylla* ssp *hungarica*

**Surface:** 265 ha



➤ **ROSCI0076 - Dealul Mare- Hârlău**

**Location:** Territories from Botoșani, Iasi and Vaslui counties;

**Types of habitats of Community interest:** Dacian oak-hornbeam forests, beech forests Fagetum Asperulo.

**Surface:** 14565ha pe teritoriul județului Botoșani - teritorii din comuna Copălău, Corni, Coșula, Cristești, Curtești Flămânzi, Frumușica, Tudora, Vlădeni, Vorona.



**ROSCI0255 Turbăria Lozna (Dersca)**

**Location:** Lozna village

**Types of habitats of Community Interest:** Natural eutrophic lakes with Hydrocharition or Magnopotamion vegetation and bogs capable of natural regeneration

**Floristic species of Community interest:** *Angelica palustris*.

**Surface:** 12 ha



➤ **ROSCI0234 Stâncă Ștefănești**

**Location** –Stâncă, Ștefanesti City.

**Habitat type** is identified by the - Communities rupicole calcify or meadows Basify of Alyso-Sedion white.

**Surface:** 1 ha



ROSCI0234 Stâncă Ștefănești

➤ **ROSCI 0399 - Suharău Darabani**

**Location** – Administrative territory from Concești, Darabani, Hudești and Suharău.

**Habitats of Community interest:** Asperulo beech forests Fagetum, oak-hornbeam forests Dacian, Sarmatian steppes Ponto, and Ponto Sarmatian deciduous bushes.

**Surface:** 1936 ha.

➤ **ROSCI0391- Middle Siret Bucecea**

**Location:** Administrative territory from Botosani and Suceava, In Botoșani county–Bucecea city 3% și Vârful Câmpului village1%;

**Habitats of Community interest:** herb fringe communities of high hydrophilic from the plains to the mountain and alpine.

Fish species in Annex 2 of the Habitats Directive *Aspius aspius* , *Gobio kessleri* , *Cobitis taenia*

**Surface:** 125, 4 ha

➤ **ROSCI0184 - Zamostea Luncă Forest**

**Location:** Botosani and Suceava cities. ROSCI0184 in the Botosani County the covers territories are Candesti and Varful Campului villages.

**The types of habitats:** forests of oak and hornbeam Dacian, mixed riparian forests with *Quercus robur*, along the great rivers *Frasinus excelsior*.

Amphibians and reptiles species from Annex 2 of the Habitats Directive: *Emys orbicularis*;

Surface: 68, 77 ha.

### ➤ **Maramures County**

In Maramures are set 12 SCI, five Special Protection Areas, nature reserves and natural parks. Figure 5.2 shows the distribution of SCI, SPA, nature reserves and natural parks in the county of Maramures.

Protected natural areas of national interest in Maramures County are: Pietrosu Mare , Piatra Rea , Lake Morareni , Glade Swamp Trees , Forest Ronisoara , Craiasca Forest , Forest Bavna , Coștiui Iarice Forest , The stand of chestnut Baia Mare , Lapus Gorges Forest Comja pin , Arcer - Tibleș , Vf . Farcău - Vf. Mihailescu Autumnal Daffodils Glade - Sehleanu Reserve fossil Chiuzbaia , Blue Lake , Somcutei Văienii Cave , Cave with Bones , rocks Sâhloi Zâmbroslavele , Taul Dumitru , Rooster ridge Gorge Tatar Gorge Baba Cave Boiu Great Swamp Iezeru Great Limpedia columns , stone rosette from Ilba , Cave hill Solovan , Taul Black Swamp , Old spring , caves and karst spring Iza Forest Runc , Maramures Mountains Natural Park .

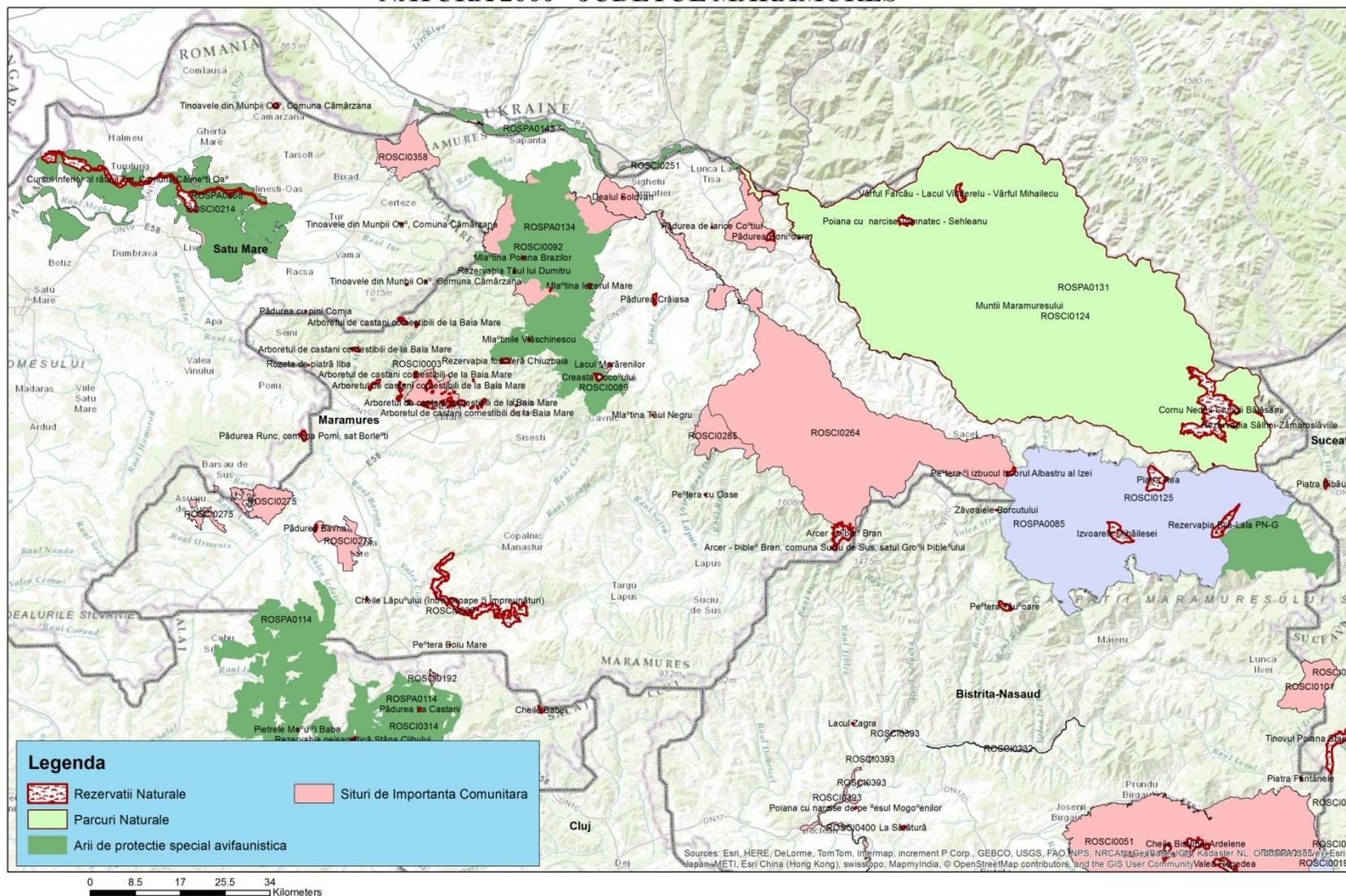
Natural protected areas of international interest

### **Rodney Mountains National Park - Biosphere Reserve**

Rodney Mountains National Park - Biosphere Reserve is the main objective of natural heritage in the county, with a total area of 47,227 ha, of which 36,974 ha (80 %) in Bistrita Nasaud and 9798 ha (20%) in Maramures County.

Reserve was established in 1932 - at first only goal being protected surrounding mountain peak Pietrosu (183 ha). Later reserve area was expanded reaching 3300 ha.

## NATURA 2000 - JUDETUL MARAMURES



## I. SPECIAL PROTECTION AREAS –SPA

In Maramures County 5 SPA are declared.

- ROSPA0085 Rodney Mountains: administrator Rodna Mountains National Park;
- ROSPA0131 Maramureşului Mountains: administrator Maramureşului Mountains National Park;
- ROSPA0134 Gutâi Mountains: administrator Maramureş Mountains National;
- ROSPA0143 Upper Tisa Superioară: curator Heidenroslein Association;
- ROSPA0114 The middle of Somes–Maramureş and Sălaj Counties.

## II. SIT OF COMUNITY IMPORTANCE-SCI

Currently, in Maramures County are **12** Sits of community importance.

- ROSCI0003 Chestnut Tree Baia Mare, custode Municipal Forest custodian Baia Mare;
- ROSCI0030 Lapsul Defile, Custodian Professional Association Geommed
- ROSCI0089 Rooster Ridge Gutâi – EcoLogic Association custodian;
- ROSCI0092 administrator Maramures Mountains Natural Park;
- ROSCI0124 Maramureş Mountains, Maramures Mountains Natural Park administrator ;
- ROSCI0125 Rodna Mountains, Rodnei Mountains National Park administrator ;
- ROSCI0251 Upper Tisa, Heidenroslein custodian Association ;
- ROSCI0264 Iza Valley and Hill Solovan, administrator SC Mircea Mara SRL;
- ROSCI0192 Magura Cave Maramures ( in 10% ) and Salaj , custodian Association Somes Valley Local Action Group ;
- ROSCI0275 Bârsău Şomcuta, Maramureş and Satu Mare County;
- ROSCI0285 Secular Forests of Strâmbu Băiuţ, custodian WWF Danube Carpathian Programme;

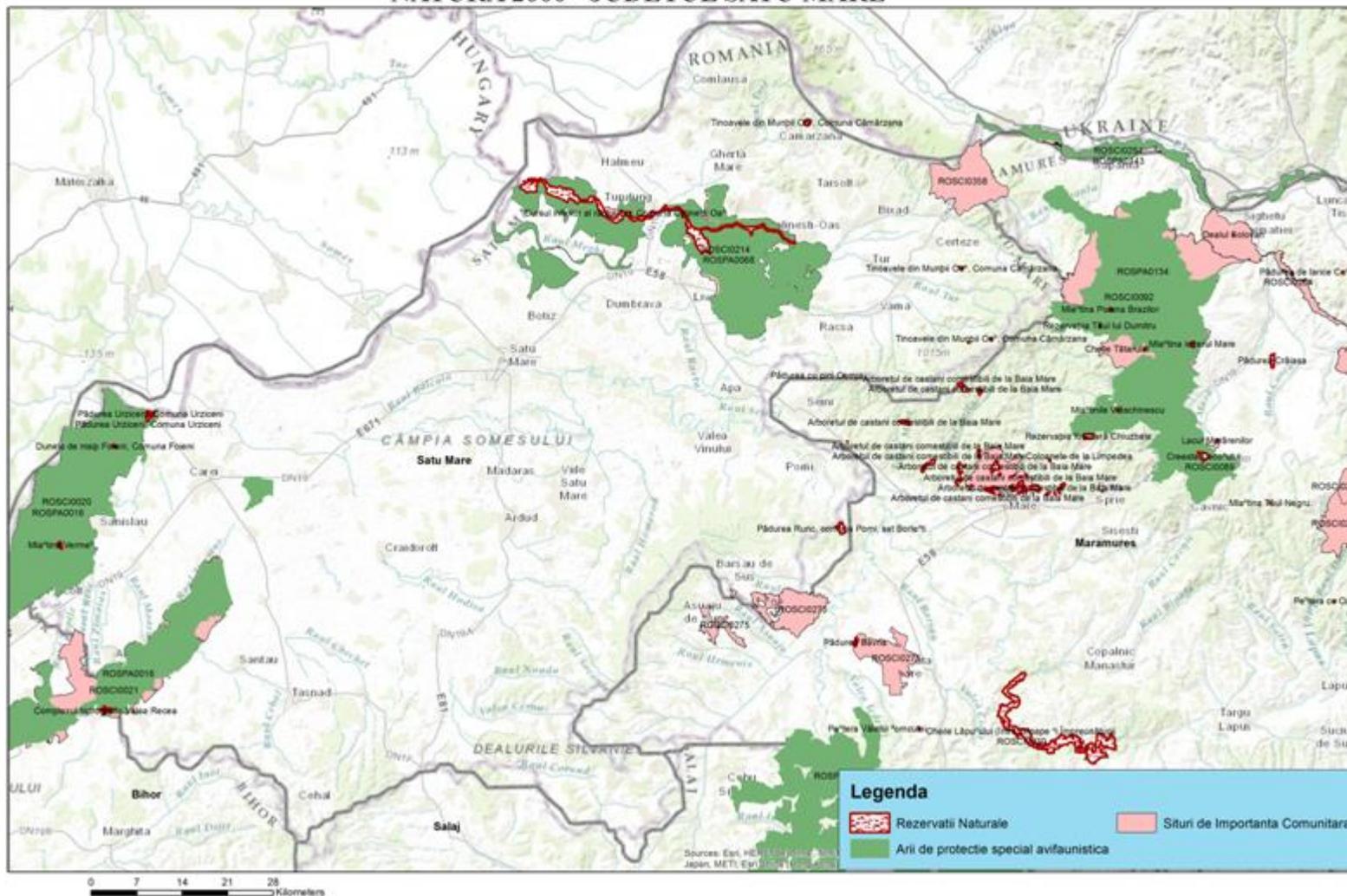
ROSCI0358 Pricop Huta Certeze, Maramureş and Satu Mare County – custodian Heidenroslein Association.

### ➤ **Satu Mare County**

Satu Mare County established 5 Sites for Community Importance (SCI) and 2 Special Protection Areas (SPA). The area occupied by the Natura 2000 sites relative to the total area of Satu Mare (% ) is: 10.39 ( 45902.16 ha ) . Figure 5.3 shows the distribution of SCI , SPA and nature reserves in the county of Satu Mare.

Protected natural areas of national interest from Maramures county are the following: Sand dunes Foeni, Vermes Swamp, Oligotrophic swamps from Oas Mountains, Urziceni Forest, Tur River, Pine Forest Comja.

### NATURA 2000 - JUDEȚUL SATU MARE



## I. SPECIAL PROTECTION AREAS –SPA

In Satu Mare County 2 SPA are declared.

### ➤ **ROSPA0016 Nirului Plain –Ierului Valley**

Bihar County: Cherechiu (6%), Curtuișeni (32%), Sălacea (30%), Tarcea (47%), Valea lui Mihai (47%), Șimian (46%) . Județul Satu Mare: Andrid (42%), Carei (7%), Ciumești (76%), Căuaș (5%), Foieni (54%), Pir (18%), Pișcolt (52%), Sanislău (61%), Santău (15%), Tiream (37%), Urziceni (47%);

Surface: 38 682.1 ha

Site Overview: Continental sands of Nir Plain stretch along the northwestern border of Romania, accounting for a third of the total area of sand in our country. Nir Plain relief is characterized by rows of dunes oriented NNE - SSW general alternating lowland swamps of interdune sometimes. The main rivers are: Berea, Valea Neagra and Horea. Within the sands there are several lakes and ponds, but with small areas.

### ➤ **ROSPA0068 Turului Lower Meadow**

Satu Mare County: Aгриș (19%), Botiz (< 1%), Călinești-Oaș (42%), Gherța Mică (34%), Halmeu (< 1%), Lazuri (20%), Livada (43%), Medieșu Aurit (15%), Micula (54%), Orașu Nou (40%), Porumbști (22%), Turulung (40%), Turț (2%);

Surface: 20 126.5 ha

Site Overview: Tur River Basin is divided in two major relief units: mountain (35%) and plain (65%).

**Habitat classes** : rivers, lakes , swamps , bogs , cultures (arable land ) , grassland , other arable land , deciduous forests .

**Quality and importance:** This area is a green corridor showing a vegetation: with rare flora species phytocenosis alongside a rich spontaneous flora. They are very well represented fauna, reptiles, amphibians, invertebrates. Meadow Tour has a rich entomofauna very rare species of butterflies. During migrations are ponds nearby place for migratory bird's passage, observing a mixture of species of native species with northern areas (some rare ornithological or vulnerable species).

Species of global conservation interest - 1 species: Corncrake (*Crex crex*). Important populations of threatened species in the European Union - 4 species : black kite ( *Milvus migrans* ) , Nightingale pond ( *Acrocephalus melanopogon* ), Black Stork ( *Ciconia nigra* ), kite reed( *Circus aeruginosus* ) .

## II. SIT OF COMUNITY IMPORTANCE-SCI

In Satu Mare County are **5** Sits of community importance.

➤ **ROSCI0020 Plain Careiului**

Satu Mare County: Ciumești (73%), Foieni (51%), Pișcolt (47%), Sanislău (58%), Urziceni (47%);

Bihar County: Curtuișeni (28%), Valea lui Mihai (47%), Șimian (40%);

**Types of habitats:** 2190 - Depression interdune wet ; 2340 - Dune Pannonian ; 3260 - Water courses in the plains to the mountain stage , with vegetation and Callitriche - Batrachion fluitantis Ranunculion; 3270 - cumaluri muddy rivers with vegetation Chenopodion Ariege and Bidention; 6120 - grasslands xerice on nisipuricalcaroase; 6410 - Molinia meadows on calcareous, peaty or clay loam ( Molinion caeruleae ); 6430 communicates the hydrophilic tall grass skirt from plain to mountain and alpine floors ; 6440 - grasslands aluvialedin Cnidion doubt ; 6510 - low altitude meadows ( Alopecurus pratensis , Sanguisorba officinalis ) ; 91F0 – Mixed Forest with Quercus robur, Ulmus laevis , Fraxinus excelsior or Fraxinus angustifolia, along rivers ( Ulmenion minoris ) ; 9110 - eurosiberiană steppe vegetation with Quercus spp; 92A0 - groves with Salix white and Populus white ;

**Mammalian Species:** 1335 – Spermophilus citellus (Popândău, Șuită);

**Amphibians and reptiles:** 1188 - Bombina (Eurasian Bittern red belly ) ; 1220 - Emys orbicularis ( water turtle ) ; 1166 - Triturus cristatus ( crested newt ) ; 1993 - Triturus dobrogicus ( Triton crested Dobrogea ) ;

**Fish species:** 1149 - Cobitis taenia (grig ) ; 1145 - Misgurnus fossilis ( Eel ) ; 1134 - Rhodeus sericeus amarus ( Boart ) ; 2011 - Umbra krameri ( Țigănuș ) ;

**Invertebrate Species:** 1088 - Cerambyx cerdo (Tailor large forest guard ) ; 1052 - Euphydryas maturna; 1083 -Lucanus cervus ( stag beetle, Răgacea ) ; 1060 - Lycaena disappear; 1059 - Maculinea teleius; Odontopodisma 4052 rubripes ( Grasshopper mountain ) ;

**Plant species :** 4068 - Adenophora lilifolia ; 1516 - Aldrovanda ( Otrățel ) ; 1617 - Angelica palustris ( marsh Angelica ) ; 4081 - Cirsium brachycephalum ( bonito ) ; 1898 - Eleocharis Carniola ; 4097 - Iris aphyllasp . Hungarica (Iris , iris ) ; 4098 - Iris humilis ssp. Arenaria (Iris , iris ) ; 1428 - Marsilea quadrifolia ( Trifoiiaș legs ) ; 4110 - Pulsatilla pratensis ssp. Hungarica ( Dediței , Sisine ) .

➤ **ROSCI0021 Plain Ierului**

Satu Mare County: Andrid (41%), Căuaș (7%), Pir (22%), Pișcolt (<1%), Santău (18%), Tiream (37%);

Bihar County: Cherechiu (58%), Curtuișeni (15%), Diosig (2%), Săcueni (18%), Sălacea (46%), Tarcea (51%), Valea lui Mihai (<1%), Șimian (3%);

**Types of habitats:** 1530 \* - grasslands and swamps halophile Ponto- Pannonian and Sarmatian ; 3130 - oligotrophic to mesotrophic standing waters with vegetation of Littorelletea uniflorae and / or Isoëto - Nanojuncetea ; 3150 - Ariege eutrophic lakes with vegetation type or Hydrocharition Magnopotamion ; 3260 - Water courses in the plains to

the mountain stage , with vegetation and Callitriche - Batrachium fluitantis Ranunculion ; 3270 - Rivers with muddy banks with vegetation Chenopodium Ariege and Bidention ; 40A0 - thicket peripanonic subcontinent ; 6430 - Communities of hydrophilic tall grass skirt from plain to mountain and alpine floors ; 91F0 - Riparian mixed forests with Quercus robur , Ulmus laevis , Fraxinus excelsior or Fraxinus angustifolia , along the great rivers (Ulmenion minoris ) ; 91I0 - eurosiberiană steppe vegetation with Quercus spp .; 92A0 - groves with Populus alba and Salix white.

**Species of mammals:** 1355 - Lutra Lutra (otter, Lutra); 1335 - Spermophilus citellus (ground squirrel, Suite);

**Amphibians and reptiles :** 1188 - Bombina bombina ( Eurasian Bittern red belly ) ; 1193 - Bombina Ariege ( Buhai yellow -bellied toad ) ; 1220 - Emys orbicularis ( water turtle ) ; 1166 - Triturus cristatus (crested newt ) ; 1993 - Triturus dobrogicus ( Triton crested Dobrogea );

**Fish species:** 1149 - Cobitis taenia ( grig ) ; 1124 - Gobio albipinnatus ( Pig plain ) ; - Misgurnus 1145 fossilis ( Eel ) ; 1134 - Rhodeus sericeus amarus ( Boart ) ; 2011 - Umbra krameri ( Țigănuș ) ;

**Invertebrate species:** 4056 - Anisus vorticulus (snail hook); 1078 \* - Callimorpha quadripunctaria; 1052 - Euphydryas maturna; 4036 - Leptidea walrus; 1060 - Lycaena disappear;

**Plant species:** 1516 - Aldrovanda ( Otrățel ) ; 4081 - Cirsium brachycephalum ( bonito ) ; Carniola -Eleocharis 1898 ; 1428 - Marsilea quadrifolia ( Trifoiiaș pond ) .

### ➤ **ROSCI0214 River Tour**

Satu Mare County: Agriș (19%), Botiz (<1%), Călinești-Oaș (42%), Gherța Mică (34%), Halmeu (3%), Lazuri(20%), Livada(44%), Medieșu Aurit (15%), Micula (55%), Orașu Nou (40%), Porumbesti (22%),Turulung (41%), Turț (2%);

**Types of habitats:** 3150 - Natural eutrophic lakes with vegetation type or Hydrocharition Magnopotamion; -Lacuri 3160 dystrophic and ponds; 3270 - Rivers with muddy banks with vegetation Chenopodium rubriși Bidention; 40A0 - peri-Pannonic scrub subcontinent; 6120 - xerice grasslands on calcareous sands; 6410 - cuMolinia meadows on calcareous, peaty or clay loam (Molinion caeruleae); 6430 - Communities of fringe cuierburi hydrophilic high from the plain to the mountain and alpine floors; 6510 - low altitude meadows (Alopecurus pratensis, Sanguisorba officinalis); 9130 - beech forests Asperulo-Fagetum; 91E0 - Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae); 91F0 - Riparian mixed forests cuQuercus robur, Ulmus laevis, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris); 91M0 - Forest Balkan-Pannonian sky and oak; 91Y0 - oak and hornbeam forests Dacian; -Zăvoaie 92A0 Salix whitw and Populus white;

**Mammalian Species:** 1308 - Barbastella barbastellus ( Bat meat ) ; 1355 - Lutra Lutra ( otter , Lutra ) ; -Myotis 1323 Bechstein ( big-eared bat ) ; 1307 - blythii Myotis ( common bat low ) ; 1318 - dasycneme Myotis ( Bat deiaz ) ; 1321 - emarginatus Myotis ( Bat brick ) ; 1324 - Myotis myotis ( Common Lilac ) ; -Rhinolophus 1304 ferrumequinum ( greater horseshoe bat ) ; 1303 - Rhinolophus hipposideros ( lesser horseshoe bat ) ;

**Amphibians and reptiles** : 1188 - Bombina bombina ( Eurasian Bittern red belly ) ; 1193 - Bombina ( Buhai yellow -bellied toad ) ; 1220 - Emys orbicularis ( water turtle ) ; 1166 - Triturus cristatus ( crested newt ) ; 1993 - Triturus dobrogicus ( Triton crested Dobrogea ) ;

**Fish species:** 1130 - Aspius aspius ( Avat ) ; 1149 - Cobitis taenia ( grig ) ; 1124 - Gobio albipinnatus ( Porcuşorde plain ) ; 2511 - Gobio kessleri ( Pig sand ) ; 1145 - Misgurnus fossilis ( Eel ) ; 1134 - Rhodeus sericeus amarus ( Boart ) ; 1114 - Rutilus pigus ; 1146 - Sabanejewia aurata ( Danube) ; 1160 - streber Zingel ( Fusarium ) ;

**Invertebrate Species** 1088 - Cerambyx cerdo ( Tailor large forest guard ) ; 4045 - Coenagrion ornatum ( peasant ) ; 1074 - Eriogaster catax ; 1065 - Euphydryas aurinia ; 1082 - Graphoderus bilineatus ( Cockroach water) ; 4036 - Leptidea walrus ; 1083 - Lucanus cervus ( stag beetle , Răgacea ) ; 1060 - Lycaena disappear ; 4038 - Lycaena Helle ; Teleius -Maculinea 1059 ; 1032 - Unio crassus ( clams ) .

➤ **ROSCI0275 Bârsău – Şomcuta**

**Satu Mare County:** Bârsău (11%);

**Maramureş County:** Asuaju de Sus (5%), Băiţa de sub Codru (6%), Fărcaşa (3%), Gârdani (63%), Mireşu Mare (<1%), Satulung (17%), Sălsig (16%), Şomcuţa Mare (7%);

**Types of habitats:** 9170 - oak and hornbeam forests Galio - Carpinetum type ; 91Y0 - oak and hornbeam forests Dacian ;

**Mammalian Species:** 1323 - Myotis Bechstein ( big-eared bat ) ; 1324 - Myotis myotis ( Common Lilac ) ; 1305 - horseshoe Ariege ( Mediterranean horseshoe bat ) ; 1304 - Rhinolophus ferrumequinum ( big bat cupotcoavă ) ; 1303 - Rhinolophus hipposideros ( lesser horseshoe bat ) ;

**Amphibians and reptiles:** 1193 - Bombina Ariege ( Buhai yellow -bellied toad ) ; 1166 - Triturus cristatus ( crested newt ) .

➤ **ROSCI0358 Pricop - Huta – Certeze**

Satu Mare County: Bixad (3%), Certeze (13%);

Maramureş County: Remeţi(23%), Săpânţa(<1%);

**Types of habitats:** 9130 - beech forests Asperulo - Fagetum; 9170 - Forests of oak and hornbeam Carpinetum Galio- type ; 91V0 - Dacian beech forests ( Symphyto - Fagion ) ;

**Mammalian Species** 1352 - Canis lupus ( wolf ) ; 1361 - Lynx lynx ( Lynx ) ; 1304 - Rhinolophus ferrumequinum ( greater horseshoe bat ) ; 1354 - Ursus arctos ( brown bear ) .

**Amphibians and reptiles:** 1193 - Bombina Ariege ( Buhai yellow -bellied toad ) ; 1166 - Triturus cristatus ( crested newt ) ; 2001 - Triturus montandoni ( Carpathian Triton ) .

➤ **Suceava County**

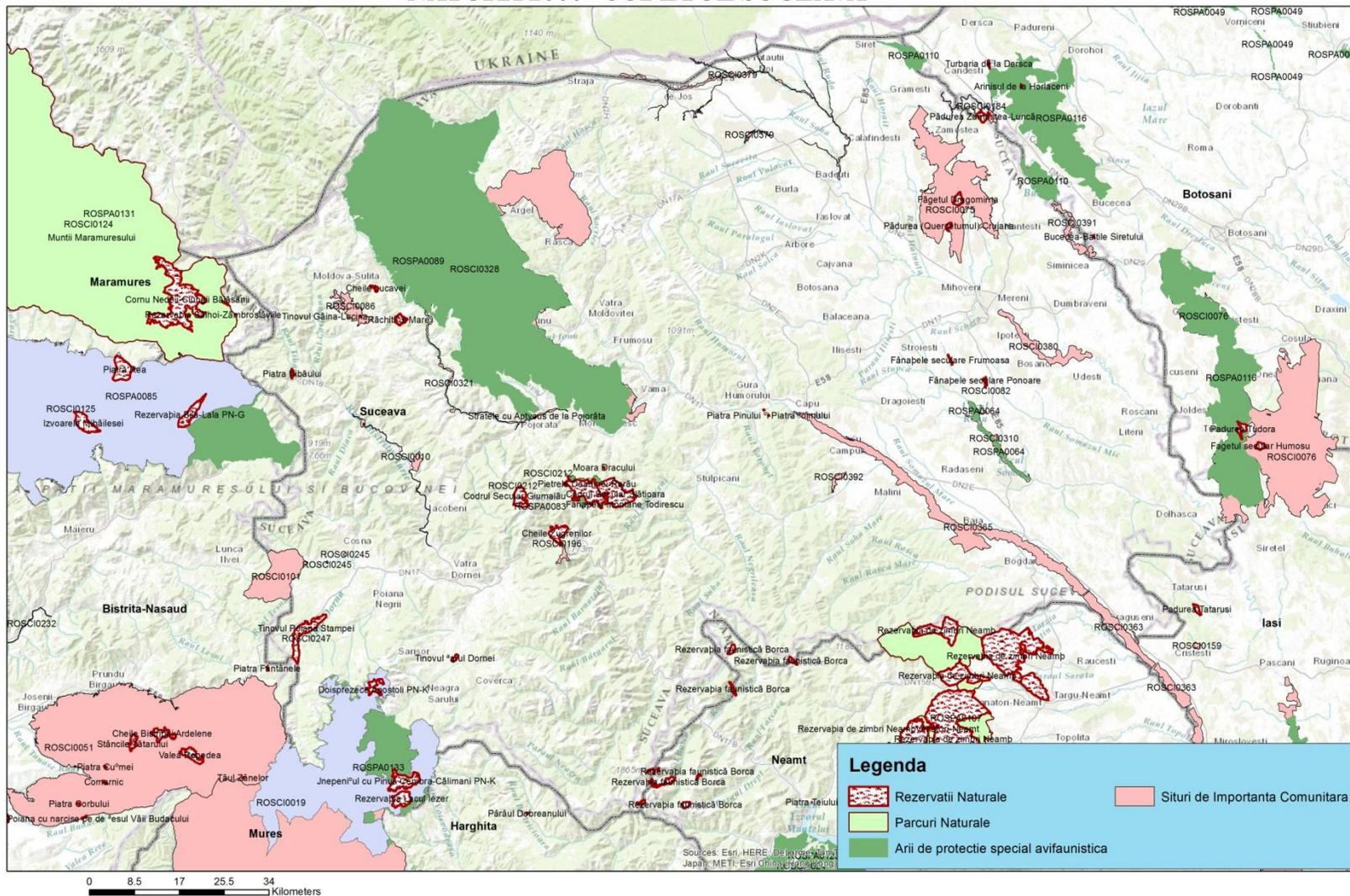
In Suceava County are set 23 SCIs, 6 SPA, nature reserves and natural parks. Figure 5.4 shows the distribution of SCI , SPA, nature reserves and natural parks in Suceava County .

Suceava County there are a total of 29 protected areas of national interest (botanical reserves, forest reserves, reserves geological, paleontological, one scientific reserve , Calimani National Park with a total area of 24,041 ha, of which 10,700 ha territory Suceava county ) .

Protected natural areas of national interest in Suceava County

Nr. crt.	Name	ANP Category	Surface (ha)
1	Calimani National Park	National Park	10700
2	The meadows secular Ponoare	Botanical reserve	24,50
3	Secular meadows	Botanical reserve	9,50
4	Beautiful	Joint reserve	973,00
5	Lady Rocks Rarău	Joint reserve	314,00
6	Keys Zugrenilor	forest reserve	1064,20
7	Forest Slătioara	forest reserve	309,50
8	Woods secular Giumalău	forest reserve	681,8
9	Poiana Stampa Tinovul	forest reserve	36,0
10	Tinovul Saru Dornei	forest reserve	107,6
11	Forest Meadow Zamostea	forest reserve	39,40
12	Forest ( Quercetum ) Crujana	forest reserve	139,40
13	Fagetul Dragomirna	Botanical reserve	316,4
14	Rachitis Mare	Botanical reserve	1,00
15	Lucina chicken Tinovul	Botanical reserve	38,10
16	Mountain meadows Todirescu	geological reservation	33,00
17	keys Lucavei	geological reservation	0,50
18	Pine Stone and Stone Șiomului	geological reservation	20,30
19	Stone Tiba	geological reservation	1,30
20	Devil's Mill Gorges	paleontological	1,00
21	Aptychus layers with the Pojorâta	geological reservation	200,00
22	Twelve (PN -K )	forest reserve	384,20
23	Juniper trees with Pinus cembra	Botanical reserve	7,00
24	Secular meadows Calafindești	forest reserve	204,80
25	Forest Roșoșă	forest reserve	483,00
26	Forest Loben	forest reserve	101,90
27	Forest Voievodeasa	paleontological	0,1
28	Klipp Triassic limestone creek Horses	geological reservation	2
29	Stone buhi	scientific reserve	6

## NATURA 2000 - JUDETUL SUCEAVA



## I. SIT OF COMUNITY IMPORTANCE-SCI

In Suceava County are **23** Sits of community importance.

**Table 5.1.2. - Sits of community importance in county Suceava**

No.	Name	Location	Surface (ha)		Surface (%)	Occupied area
			Total	Territory		
1	Bistrița Aurie	Cârlibaba, Ciocănești, Iacobeni	375	375	Not applicable	0,04%
2	Fânețele seculare Ponoare	Bosanci	40	40	100%	0,004%
3	Fânețele seculare Frumoasa	Moara	10	10	100%	0,001%
4	Găina – Lucina	Moldova Sulița, Breaza	836	836	0,11%	0,09%
5	Forest Zamostea – Lunca	Zamostea	135	135	100%	0,015%
6	Pietrosul Broștenilor – Cheile Zugrenilor	Crucea, Dorna Arini	469	469	90%	0,05%
7	Rarău – Giumalău	C-lung Moldovenesc, Crucea, Dorna Arini, Pojorâta	2547	2547	100%	0,29%
8	Tinovul de la Românești	Coșna	21	21	Not applicable	0,002%
9	Tinovul Mare Poiana Stampei	Poiana Stampei	695	695	100%	0,08%
10	Tinovul Șaru Dornei	Șaru Dornei	41	41	100%	0,004%
11	Călimani-Gurghiu	Dorna Candrenilor, Panaci, Poiana Stampei	134936	10794	15%	1,26%
12	Forest Pătrăuți	Adâncata, Șerbăuți, Pătrăuți, Calafindești, Dărmănești,	8746	8746	1,96%	1,02%
13	Lakes Fălticeni	Bosanci, Bunești, Fălticeni, Horodniceni, Moara,	895	895	100%	0,10%
14	Moldova Superioară	Breaza, C-lung Moldovenesc, Fundu Moldovei, Pojorâta,	429	429	Not applicable	0,005%
15	Obcinele Bucovinei	Breaza, Brodina, Vama, Putna, Sadova, C-lung	32246	32246	50%	3,77%
16	Râul Moldova între Păltinoasa și Ruși	Baia, Berchișești, Bogdănești, Boroaia, Capu Câmpului,	5303	5196	Not applicable	0,60%
17	River Suceava	Bilca, Dornești, Frătăuții Noi, Frătăuții Vechi, Gălănești,	881	881	Not applicable	0,10%
18	River Suceava Liteni	Bosanci, Ipotești, Salcea, Suceava, Udești, Verești	1254	1254	Not applicable	0,15%
19	Siretul Mijlociu – Bucecea	Dumbrăveni, Hânțești, Siminicea	570	445	Not applicable	0,05%
20	Slatina	Slatina, Valea Moldovei	137	137	Not applicable	0,02%
21	Dealul Mare-Hârlău	Suceava, Botoșani, Iași	25112	1506	Not applicable	0,17%

No.	Name	Location	Surface (ha)		Surface (%)	Occupied area
			Total	Territory		
22	Larion	Suceava, Bistrița-Năsăud	3023	846	Not applicable	0,35%
23	Moldova River	Suceava, Iași, Neamț	3215	450	Not applicable	0,05%



**Figura 5.4.2** Ponoare secular meadows - Site of Community Importance

### ➤ **Tulcea County**

In Tulcea County are set **8** SCIs , **9** SPA, nature reserves and natural parks. **Figure 5.5** shows the distribution of SCI, SPA, nature reserves and natural parks in the Tulcea County .

In Tulcea County are now legislated to 34 protected natural areas of national interest including: Macin Mountains National Park and 33 natural reserves.

Protected natural areas of national interest in Tulcea County are presented in the following table.

Protected natural areas of national interest in Tulcea County

Nr crt	Name	Category	Surface ha
1	Macin Mountains National Park	II National Park	11 321
2	Forest " Beech Valley "	IV Forest Reserve	154
3	Botanical Reserve " Korum Tarla "	IV Botanical Reserve	2
4	Place fossil Hill Bujoarele	IV Geological Reserve	8
5	Geological Reserve " Agighiol "	IV Geological Reserve	9,7
6	Peak Secaru	IV Nature Reserve	34,5
7	Reserve bat " Great Fountain "	IV Nature Reserve	0,3
8	Reserve bat "Valley sheep "	IV Nature Reserve	0,35
9	Natural Reserve " Hill Peony "	IV Nature Reserve	50,8
10	Forest Niculițel	IV Nature Reserve	11

11	Babadag forest - Codru	IV Nature Reserve	524,6
12	Traian Lake	IV Nature Reserve	326
13	The edges Cerna - Iaila	IV Nature Reserve	1891
14	Beidaud	IV Nature Reserve	1121
15	Valley Mahomencea	IV Nature Reserve	1029
16	Hill Ghiunghiurmez	IV Nature Reserve	1421
17	Cherval - Priopcea	IV Nature Reserve	568
18	Călugăru- Iancina	IV Nature Reserve	130
19	Mount Consul	IV Nature Reserve	328
20	Hill Sarica	IV Nature Reserve	100,1
21	Hills Bestepe	IV Nature Reserve	415
22	Enisala	IV Nature Reserve	57
23	Carasan - Teke	IV Nature Reserve	244
24	Ostrov Valley	IV Nature Reserve	61,8
25	Uspenia	IV Nature Reserve	22
26	Edirlen	IV Nature Reserve	25,5
27	Casimcea	IV Nature Reserve	137
28	Large Colțanii	IV Nature Reserve	53
29	Peceneaga	IV Nature Reserve	132
30	Măgurele	IV Nature Reserve	292
31	Războieni	IV Nature Reserve	41
32	Hill Deniztepe	IV Nature Reserve	305
33	Hill Mândrești	IV Nature Reserve	5
34	Mănăstirea Cocoș	IV Nature Reserve	4,6

#### Areas of international interest

Nr. Crt.	Name	Legal Act	Protected Area	Surface ha	Surface (ha), at Tulcea County level
1	Danube Delta Biosphere Reserve	Law 82/1993	Biosphere Reserve	580.000	508.851 ha

The Danube Delta is one of the largest deltas of the European continent and the most well preserved wetland in Europe. Delta ecosystems, diverse and with a discontinuous distribution, type "mosaic", a framework apart from other biomes of our country. The Danube Delta is home to a variety of species of plants and animals, some strictly adapted to the Danube Delta and plant associations and communities particularly interesting.

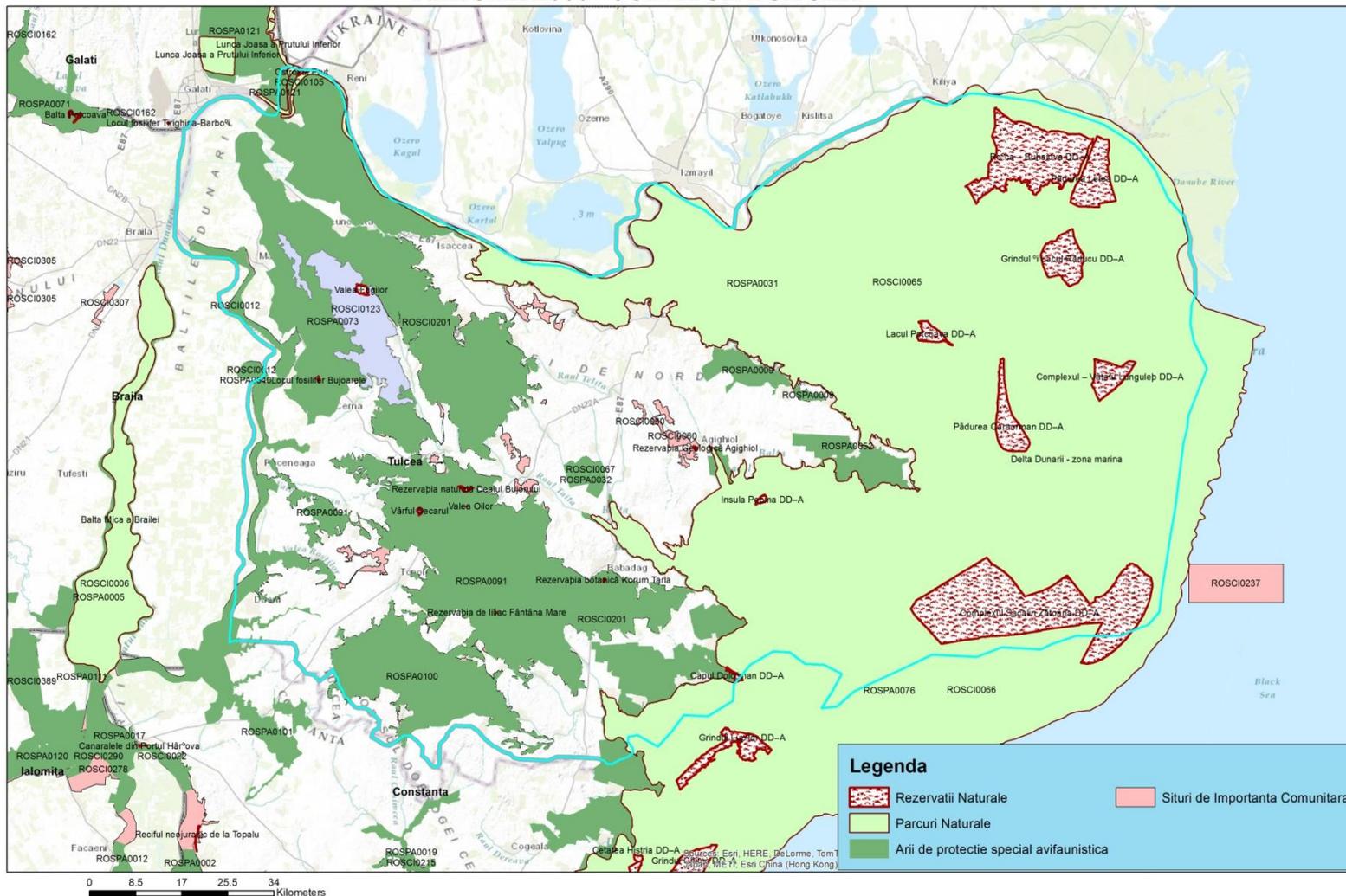
Of the more than 300 species of birds that are found within the reserve all year round or only during certain periods thereof, over half are strictly protected species or protected by international conventions.

These are just a few features that Delta was declared a Biosphere Reserve in 1990 and included in the international network of Biosphere Reserves under the "Man and Biosphere" program launched by UNESCO in 1970.

Danube Delta Biosphere Reserve has a total area of about 580,000 ha. Reserve territory includes several physical and geographical units outstanding both morphologically and genetically:

- Danube Delta itself ;
- Razelm - Sinoe ;
- Black Sea , up to 20 m isobath ;
- Cat Bend Danube estuary to the floodplain Isaccea- Tulcea ;
- Sărăturile Murighiol - Plopu .

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## I. SPECIAL PROTECTION AREAS –SPA

In Tulcea County 9 SPA are declared.

**Table 4.1.3 Special Protection Areas (SPA) in Tulcea**

No	SIT COD	SIT NAME	Surface ha	Surface at the level of County
1	ROSPA0009	Beștepe – Mahmudia	3.663	3.663
2	ROSPA0031	Delta	512820	456.410
3	ROSPA 0032	Denis Tepe	1.900	1.900
4	ROSPA0040	Old Danube –Măcin Arm	18.759	8442
5	ROSPA0052	Beibugeac Lake	470	470
6	ROSPA0076	Black See	140.143	Black Sea
7	ROSPA0073	Măcin – Niculițel	67.361	67.361
8	ROSPA0091	Babadag Forest	58.473	58.473
9	ROSPA0100	Casimcea Steppe	22.226	22.226

### ➤ **ROSPA 0009 Beștepe – Mahmudia**

It is an important place for nesting raptors feeding and those who are in migration.



Examples of rare species of raptors in the area : *Accipiter brevipes* ( Levant Sparrowhawk ) , *Aquila heliaca* ( Imperial Eagle ) , *Aquila nipalensis* ( steppe eagle ) *Aquila clanga* ( greater spotted eagle ) *Circus macrourus* ( pallid harrier ) , *Falco cherrug* ( Saker )

This site houses important protected bird species as follows: 29 species in Annex 1 of the Birds Directive, 30 other migratory species listed in the Annexes to

the Convention on Migratory Species (Bonn), 7 globally endangered species.

The site is important for nesting populations of the following species: *Burhinus oedicnemus*, *Caprimulgus europaeus*, *Calandrella brachydactyla*, *Oenanthe pleschanka* . The site is also used for wintering of the following species: *Branta ruficollis* (red-breasted goose) and *Circus cyaneus*.

➤ **ROSPA 0076 Măcin Niculițel**

It is one of the most important places in the country in terms of the abundance of prey nesting : Imperial Eagle (*Aquila heliaca*) , lesser spotted eagle (*Aquila pomarina*) , little eagle (*Hieraaetus pennatus*) , short-toed eagle (*Circaetus gallicus*) , *Pernis apivorus* ( nest ) , large buzzard (*Buteo rufinus*) , Levant Sparrowhawk (*Accipiter brevipes*) , Saker Falcon (*Falco cherrug*) and ravishing night owl (*Bubo Bubo*) , long-eared owl (*Asio Otus*)



This site houses important protected bird species as follows: 56 species in Annex 1 of the Birds Directive, 123 other migratory species listed in the Annexes to the Convention on Migratory Species (Bonn), 10 globally endangered species.

The site is important for nesting populations of the following species :

*Falco cherrug*, *Coracias garrulus*, *Ciconia ciconia*, *Accipiter brevipes*, *Burhinus oedicephalus*, *Oenanthe*

*pleschanka*, *Circaetus gallicus*, *Buteo rufinus*, *Emberiza hortulana*, *Caprimulgus europaeus*, *Hieraaetus pennatus*, *Lullula arborea*.

The site is important for species during migration : *Ciconia ciconia* White stork, *White Accipiter brevipes* , *Circaetus gallicus* , *Buteo rufinus* , *Hieraaetus pennatus* , *Lanius collurio* , *Gyps fulvus* , *Ficedula parva* , *Galerida cristata*, *Lullula arborea* , *Falco vespertinus* , *Neophron percnopterus* *Pandion haliaetus* , *Nycticorax nycticorax* , *Ciconia nigra* , *himantopus himantopus* , *Haliaeetus albicilla* , *Recurvirostra avosetta* , *Tringa Glareola* , *Pelecanus onocrotalus* , *Pelecanus crispus* , *Ardea purpurea* , *Plegadis falcinellus* , *Platalea leucorodia* , *Chlidonias hybridus* , *Pernis apivorus* , *Antus campestris* , *pomarina Aquila* , *Aquila heliaca* , *Aquila chrysaetos* , *Aquila clanga* , *Circus macrourus* , *Circus aeruginosus* , *Falco peregrinus* , *Milvus migrans* , *Phalacrocorax pygmaeus* , *Egretta white* .

➤ **ROSPA 0091 Babadag Forest**

It is the largest forest in Dobrogea role during migration and wintering particularly for thousands of raptors and other species stop here for feeding.

Species of this area : *Caprimulgus europaeus* ( nightjar ) *Coracias garrulous* (Roller ) *hortulana Emberiza* ( bunting garden) , woodpecker ( *Dendrocopos medius*) , black



woodpecker ( *Dryocopus martius* )

This site houses important protected bird species as follows: 38 species in Annex 1 of the Birds Directive, 61 other migratory species listed in the Annexes to the Convention on Migratory Species (Bonn) and 6 endangered species globally.

The site is important for nesting populations of the following species : *Falco vespertinus*, *Falco cherrug*, *Coracias garrulus*, *Hieraaetus pennatus*, *Accipiter brevipes*, *Circaetus gallicus*, *Circus pygargus*, *Oenanthe pleschanka*, *Picus canus*, *Milvus migrans*, *Dendrocopos medius*.

The site is important during migration period for the following species: *Haliaeetus albicilla*, *Ficedula parva*, *Ciconia ciconia*.

The site is important for wintering for the following species: *Circus macrourus* and *Circus cyaneus*.

#### ➤ **ROSPA 0100 Stepa Casimcea**

It is a site which appears a significant number of globally threatened species of birds and a feeding, migration and wintering ground for a large number ( thousands) of geese (goose neck red) *Branta ruficollis* (red-breasted goose) and raptors ( eagles, short-toed eagle, hawk, Saker ).

This site houses important protected bird species as follows: 28 species in Annex 1 of the Birds Directive, 37 other migratory species listed in the Annexes to the Convention on Migratory Species (Bonn ) and 5 globally endangered species .

The site is important for nesting populations of the following species : *Coracias garrulus* , *Falco cherrug* , *Falco vespertinus* , *Aquila heliaca* , *Antus campestris* , *Accipiter brevipes* , *Calandrella brachydactyla* , *Buteo rufinus* , *Milvus migrans* , *Pernis apivorus* , *Lanius collurio* , *Lullula arborea* , *Oenanthe pleschanka* , *Lanius minor*, *Melanocorypha calender* , *Burhinus oedichnemus*, *Circaetus gallicus* , *Galerida Christ, pomarina* *Aquila* , *Dendrocopos syriacus* , *Emberiza hortulana* .

The site is important for species during migration : *Falco vespertinus* , *Accipiter brevipes* , *Hieraaetus pennatus* , *Falco peregrinus* , *Circus cyaneus* , *Aquila pomarina* , *Ficedula albicollis* , *Circus macrourus* , *Circus pygargus* .

#### ➤ **ROSPA 0032 Denis Tepe**

The area nesting or migration can be found in several species of raptors : *Levant Sparrowhawk* ( *Accipiter brevipes* ) , *Imperial Eagle* (*Aquila heliaca* ) , *eagle owl* ( *Bubo Bubo* ) , *lesser spotted eagle* (*Aquila pomarina*) , *short-toed eagle* ( *Circaetus gallicus* ) , *saker falcon* (*Falco cherrug* ) *sur hawk* , *harrier* , *white* ( *Circus pygargus* , *cyaneus* , *macrourus* ) .

This site houses important protected bird species as follows: 25 species in Annex 1 of the Birds Directive, 33 other migratory species listed in the Annexes to the Convention on Migratory Species (Bonn ) and 6 endangered species globally.

The site is important for nesting populations of the following species: *Falco cherrug* , *Buteo ruffinus* , *Calandrella brachydactyla* , *Melanocorypha calender* , *Lullula arborea* , *curlew* *Burhinus oedichnemus* .

➤ **ROSPA 0052 Lacul Beibugeac**



Declared a nature reserve areas through HCL No.3 / 2004 , the lake has a seismic origin and appeared in the 1940 earthquake is sitting on sandy loess layers arranged above layers dating from the Triassic limestone . The lake is fed mainly by rainwater that drain the surrounding hills, from infiltration at higher elevations of the Danube waters of Lake Razim, in the immediate vicinity and it's not ruled out the possibility of supply from springs.

As for Bird Lake is an important resting and feeding place for thousands of geese winter : red breasted goose ( *Branta ruficollis* ) , white-fronted goose ( *Anser albifrons* ) . The lake attracts thousands every season feeding of ducks among which the White-headed Duck ( *Oxyura leucocephala* ) , red duck Ferruginous duck *Aythya nyroca* . Islands in the middle of the lake are a resting place for thousands of gulls, pelicans and hundreds of dozens of Dalmatian Pelican.

This site houses important protected bird species as follows: 39 species in Annex 1 of the Birds Directive, 56 other migratory species listed in the Annexes to the Convention on Migratory Species (Bonn) and 7 globally endangered species.

The site is important for nesting populations of the following species: *Glareola pratincola*, *Falco vespertinus*, *Recurvirostra avosetta*, *Himantopus himantopus* .

The site is important for species during migration : *red-breasted goose* , *duck Aytya* , *Pelecanus crispus* , *Pelecanus onocrotalus* , *Platalea leucorodia* , *Pelecanus onocrotalus* , *Plegadis falcinellus* , *Glareola pratincola* , *Ardeola ralloides* , *Larus melanocephalus* , *Recurvirostra avosetta* , *Nycticorax nycticorax* , *Himantopus himantopus* , *Sylvia nisoria* , *Tringa Glareola* , *Sterna hirundo* , *Sterna albifrons* .

The site is important for wintering for the following species: *Phalacrocorax pygmaeus*, red-breasted goose, *Anser albifrons* , *Cygnus Cygnus* .

During migration the site hosts more than 20,000 copies of waders, possibly as a Ramsar candidat .

➤ **ROSPA 0040 Dunărea Veche Brațul Măcin**

This site houses important protected bird species as follows: 63 species in Annex 1 of the Birds Directive, 55 other migratory species listed in the Annexes to the Convention on Migratory Species (Bonn) and 7 globally endangered species .

The site is important for nesting populations of the following species : *Coracias garrulus* *Falco vespertinus* *Ferruginous duck* *Accipiter brevipes* *Anthus campestris* *Lanius collurio* *Lanius minor* *Calandrella brachydactyla* .

The site is important for species during migration : *Pelecanus crispus* *Pelecanus onocrotalus* *Accipiter brevipes* *Phalacrocorax pygmaeus* red-breasted goose . The site is important for wintering for the following species: *Phalacrocorax pygmaeus* *Anser albifrons*.

## II.SIT OF COMUNITY IMPORTANCE-SCI

In Tulcea County are **8** Sits of community importance presented in table 5.1.4.

**Table no. 5.1.4 Sites of Community Importance ( SCI ) in Tulcea**

No	SIT COD	SIT NAME	Surface ha	Surface at the level of County
1	ROSCI0012	Macin Channel,	10.235	4503
2	ROSCI0060	Hills Agighiol	1.433	1.433
3	ROSCI0065	Delta	454.037	422.254
4	ROSCI0066	Delta-Marine zone	123.374	2468
5	ROSCI0067	DENIZ TEPE	414	414
6	ROSCI0123	Măcinului Mountain	16.894	16.894
7	ROSCI0201	Northern Dobrogea Plateau	84.812	84.812
8	ROSCI0237	Structures submarine methane - St. Gheorghe	6.122	Black See

### ➤ **ROSCI 0012 Brațul Măcin**

The site of importance primarily for habitat 92A0 *Salix alba* and *Populus alba* galleries , occupying approximately 19.41 % of the site and 4 % of the national habitat . The habitat is the surface more or less reduced and stands on which no interventions were made forest , from the training areas which can be considered virgin forests ( current or potential) . There



were however identified so far in this secular stands habitat.

The second place in importance lies priority habitat 62C0 \* Ponto- Sarmatic steppes , occupying an area of approximately 4% of the national area of habitat , represented by steppes with grasses on White soils ( association *Agropyretum pectiniformae* ) encountered in the country predominantly in Dobrogea Petrof the Paleozoic schists and

steppes ( association *Sedo hillebrandtii- Polytrichetum piliferous* ) falling in Dobrogea endemic alliance *Pimpinello - Thymion zygioidi* ( Sanda , Arcus , 1999).

The site has been cited (Savulescu, 1976) *quadrifolia Marsilea* species of Community interest in the Lake lacer that there are now (but as piscicultural) , for which it can be assumed that the species has disappeared.

The site is the northern part of the migration corridor of plant species in the Balkan Peninsula to northern Dobrogea and the Danube Delta. Moreover it constitutes an important migration route for birds (being proposed and that SPA) and for certain species of fish, including sturgeon.

Including the Danube on the site is essential for continuity and for transport by river waters of reproductive organs (seeds, shoots, etc.) of different plant species that favor their dissemination to the northern Dobrogea and the Danube Delta.

### ➤ **ROSCI 0060 Dealurile Agighiolului**



The site is characterized by the presence of 3 priority habitats . In the most important habitat in the site or 62C0 \* Ponto- Sarmatic steppes , occupying about 0.9 % of the national area of habitat association presents outstanding value *Agropyro brandzae - Thymetum zygioidi* , endemic to Dobrogea ( Sanda , Arcus , 1999 ), which occupies appreciable hundreds of hectares. Within this association is to emphasize the presence of important populations of the species

*Euphorbia myrsinites* included in the National Red List ( Oltean et al. 1994) , very rare in Dobrogea , the only region in the country that met this taxon.

It holds second place in importance habitat 91AA \* Ponto- Sarmatian forest vegetation with fluffy oak, represented by the association *Paemonio peregrinae - Carpinetum orientalis* predominantly prevalent in the country in Dobrogea.

In the site are met and other national red list species ( Oltean et al. , 1994) , namely: *Agropyron brandzae* , *Koeleria lobata* , *Thymus zygioides* etc , the first taxon is mentioned in the European Red List .

### ➤ **ROSCI 0067 Deniz Tepe**

The site is important because it is covered almost entirely by priority habitat 62CO \* Ponto- Sarmatic steppes , along with this being another priority habitat - 40 CO \* Ponto- Sarmatic deciduous bushes .

This site is also important as a habitat for other important species of plants and animals : *Romanesque Campanula* ( bell Dobrogea ) , *Elaphe quatorlineata* ( dragon Dobrogea ) and *Spermophilus citellus* ( squirrel ) . The site was declared a protected natural area since 2004

and presents an important geological / geomorphological , representing an erosion of Jurassic age , here are identified and fossils from that period.

➤ **ROSCI 0123 Munții Măcinului**

The importance of the site lies mainly in the fact that it consists almost entirely of community interest habitats , in addition to those characteristic of these mountains being added and salty habitats by including this site Salty lakes and Slatina.

Also in this site was identified largest area nationally and worldwide 91X0 habitat in the reserve Beech Valley , rest areas with this habitat is widespread in Northern Dobrogea Plateau SCI . Here they were identified and Romanesque Campanula species of Community interest, *Moehringia jankae*, *Himantoglossum caprinum*, *Agrimonia pilosa*, *Echium russicum*.



In addition to the unique nature of the geological , Macin Mountains , the oldest mountains in the country, are also required by their characteristic landscape that can not be found at national level , the result of the combination of geomorphological ( megalithic granite formations ) and fitocenocomplexele typical for most floors and vegetation zones in Dobrogea (forests Balkan , Mediterranean , steppe and steppe ) , Petrescu , M . 2007) .

➤ **ROSCI 0201 Podișul Nord Dobrogean**

The site included 23 natural reserves are legally constituted national importance , totaling 7520.55 ha . Nationally site is the most extensive and representative steppe bioregions , consisting rate of 95.5 % ( 84,812 ha ) of habitat of Community interest in the steppe habitats ( 17000ha - 19.14 %).

Forest habitats also community interest habitats are dominated by group 41.7 thermophilous and supra -Mediterranean oak forests ( which includes types 91IO , 91 MB , 91AA ) - 34,000 ha ( 38.19 % ) , followed by 41.2 habitat ( represented by the type 91YO ) - 21000ha ( 23 , 591 %), other forest habitats with a restricted share respectively 91XO ha -1 (0.001 % ) ; 92AO - 10ha (0.011 %). Scrubland habitats of Community importance are also representative, occupying an area of 35.6 % relative (1780,8ha ) .

It is important to emphasize that preserves phytocoenosis site that served to describe the initial phytocoenology most numerous associations of associations of forest and meadows and thickets typical of Dobrogea ( Dihoru , Doniță , 1970 ) their conservation is extremely important scientifically . \* 62CO habitat is most representative of the steppe bioregions site is located , so it is important to detail certain aspects of it .

Surface national Ponto- Sarmatic steppe is estimated up to 60,000 , of which 40,000 ha are in Dobrogea ( 30,000 in Tulcea , Constanta County 10,000 ) . The remaining 20,000 are widespread than in other areas of the country , but generally fragmented and exposed surface grazing , especially in bioregions steppe , areas outside the steppes generally not typical climax , but stepizării result from deforestation .

Therefore there is no possibility of building sites representative of this habitat (large enough surface to ensure a satisfactory percentage for this priority habitat) than in Dobrogea and in particular in Tulcea, where there is the largest and compact area of this habitat.

The habitat is represented by associations *Stipion lessingianae alliances*, *Festucetum valesiacaе*, *Pimpinello - Thymion zygioidi*, *Agropyro- Kochion*. In this habitat subtype 34.9211 ( comprising associations *Pimpinello - Thymion zygioidi* alliance ) is endemic to Dobrogea ( Sanda , Arcus , 1999; Dihoru , Doniță , 1970 ) , the site brings together the bulk of the range at national and global level .

This situation also applies to some specific regional associations of the province, namely the following associations: *ucrainicae Stipo - Festucetum valesiacaе*, *Bombycilaeno - Botriochloetum ischaemia*, *subasociațiile dobrogicum of coenotaxon Stipetum capillatae*, *Thymio Pannonian - Chrysopogonetum grylli* Dihoru, Doniță, 1970, Horeanu, 1976).

## UKRAINE

Information on biodiversity in Ukraine were taken from documents found on the following websites:

- <http://ypef.eu/files/booklet/ang/ukraine.pdf>
- <http://www.brucebyersconsulting.com/wp-content/uploads/2011/07/Ukraine-Biodiversity-Analysis-Report-1-2011.pdf>

Biodiversity of Ukraine consists of 27 000 **flora species** namely: species of algae, bryophytes species and species of vascular plants.

**Fauna include:** species of insects, fish, amphibians, reptiles, birds and mammals. Therefore, Ukraine can be considered one of the most powerful natural reservations necessary to restore biodiversity in Europe.

The only natural resources in Ukraine are **Crimea and the Carpathians**.

**Ukrainian Carpathians** are also called "Eastern Carpathians " or Wooded Carpathians, mainly in their territory area, while Romanians use the term Eastern Carpathians ( Eastern Carpathians ) to refer to the area covered by the border with Ukraine to the south.

**Crimean Peninsula** known as the Crimea is located on the northern coast of the Black Sea. Peninsula is located south of the Herson region of Ukraine and west of the Kuban region of Russia. She is joined with Herson region by the Isthmus of Perekop and separated of Kuban by the Strait of Kerci. Peninsula is surrounded by two seas: the Black Sea (west and south) and Azov Sea (east).

Ukraine pays special attention to the conservation of biological and landscape diversity and creating a national ecological network of protected areas.

Special attention is paid to the development of a network of natural reserve. This development was based on the law on "environmental protection" (1991 ) and " Nature Reserve Fund of Ukraine " (1992 ) and then " ecological network of Ukraine" ( 2004).

In 1991, protected areas accounted for only 1.9 % of the Ukraine surface, in 2007 , protected areas representing 4.6 % and in 2008 the protected areas increased to 4.95 % , followed in 2009 to reaches at 5.2% and in 2010 to 5.4% .

Since January 2011, the nature reserve of Ukraine had a total of 7739 zone, with a surface of 3,458,900 ha on Ukraine territory and 402,500 ha in the Black Sea (botanically reservation). The structure of biodiversity areas includes: four biosphere reserves, 47 national parks, 307 nature reserves, 132 natural monuments, 18 botanical gardens and 7 zoologically parks.

In order to create new protected areas in 2011, the request for the establishment of national parks was approved, namely:

- *Odessa*: National park Kuialnyk and Nipru –Desnyansko;
- *Vinnytsia*: National park Podolski;
- *Kherson* –botanically reservation;
- *Ternopil*: National park Valea.

In addition, a protection zone was established in Medoborsky from Ternopil region and the National Park - Dvurechansky was extended from Kharkiv region. It was established reserve of local importance "Big Wood" - Kiev region and the territory of the landscape reserve of local importance " Samsonov Plant" in Lugansk region was expanded .

An agreement between the Government of Ukraine, the Government of Belarus and the Government of the Republic of Poland regarding the establishment of transboundary biosphere reserve "Western Polesie " was concluded.

The forests of Ukraine are located in different wildernesses : Polesie , forest-steppe , steppe , and the Ukrainian Carpathians mountains of Crimea , the difference regarding afforestation and forest management is important.



**Figure nr. 5.6** The species of flora and fauna typical of Ukrainian forests

The forests of Ukraine are distributed unevenly. They are mostly concentrated in the Ukrainians' Carpathians and also in Polesie region. The Trans Carpathian region with forests of fir (*Abies* ) is known as the most forested region of Ukraine .

The forest flora of Ukraine is very rich due to the diversity of climate zones.

The forests of Ukraine are made up of more than 30 types of tree species, dominated by pine (*Pinus sylvestris* ) in which, until recently pine sap - extracted turpentine, oak (*Quercus robur* ) , beech ( *Fagus sylvatica* ) spruce (*Picea abies* ) , birch ( *Betula pendula* ) , alder ( *Alnus glutinosa* ) , ash ( *Fraxinus excelsior* ) , hornbeam ( *Carpinus betulus* ) , fir (*Abies alba* ) .

Coniferous forest occupies 42 % of the total surface, pine forests occupy 33%. Deciduous forests occupy 43% and beech and oak forests occupy 32%.

Fauna of Ukraine is historically formed as part of the ecosystem. The most common ungulates are hunted in Ukrainian forests and they are of many types and are presented below: European roe deer (143,600 copies) , wild boar (58,600 copies), moose (5600 copies) , deer (16 000 copies) , deer skipjack (4300 copies), deer (3400 copies) and muflon (500 copies) .



**Figure nr. 5.7** The distribution of tree species in Ukraine

## CULTURAL HERITAGE

### I. ROMANIA

The information about to cultural heritage is taken from the pages of each county or of the page County Department of Culture, Cults and National Cultural Heritage of the Ministry of Culture: Botosani, Maramures, Satu Mare, Suceava and Tulcea..

#### ➤ Cultural Heritage in Botosani County

**9 Cultural heritage in Botosani County are:**

- Ciomac Cantemir House Foundation Stefan Luchian
- House Costache Enescu George Enescu Museum premises
- House Manolache Iorga , Botosani
- G. Enescu Memorial House Liveni

- N. Iorga Memorial House , Botosani
- Memorial Ipotești
- Museum of Archaeology, Saveni
- Museum of Natural Sciences , Dorohoi
- Botosani County Museum

**Places of worship** in Botosani County are 23 .

➤ **Cultural Heritage in Maramures County**

- Museum complex in Maramures
  - Ethnography Sighet
  - Museum of Ethnography and Folklore Baia Mare
  - Artistic center of Baia Mare - The Art Museum
  - Florean Museum
  - Mineralogy Museum Baia Mare
  - Sighet Memorial Museum
  - County Museum of History and Archeology Baia Mare
- Architecture and folk art monuments in Maramures
  - The historic center of Baia Mare
  - The historic center Sighet
  - Stephen's Tower
  - Wooden churches of Maramureș
  - Wooden Churches of Lapus
  - Wooden Churches of Chioar
  - Merry Cemetery in Sapanta
- Monasteries in Maramures
  - Barsana Monastery
  - Peri - Săpânța Monastery
  - Monastery of Moisei
  - Monastery of Santa Ana in Rohia

**Cultural objectives of Maramures included in UNESCO heritage are:**

- Church " St. Archangels " ( Rogoz ) - UNESCO
- Wooden Church " Entrance of the Theotokos into the Temple " in Barsana - UNESCO
- Wooden church Calinesti- Susani
- Wooden church Archangels , Valenii Somcutei

- Casa Muzeu Elie Wiesel
  
- **Cultural Heritage in Satu Mare County**

***In Satu Mare there are many attractions that can be visited, including:***

- **Fire Tower** - built in 1904 on the initiative of Bishop Gyula Meszlényi being designed and built by Lajos Ferencz Dittler Vajnay . Today , the tower is a landmark of great attraction is visited daily by ca. 50 visitors.
- **Hotel Dacia ( former Pannonia )** - built in 1902 by architect Zoltán Bálint and Lajos Jámbor Hungarian Art Nouveau , Hotel Dacia is perhaps the most emblematic monument of Satu Mare. The model won second hotel at the World Expo in Wien .
- **Roman Catholic Episcopal Palace of Satu Mare** - designed by architect Counts Károlyi , Joseph Bitthauser and built between 1804 and 1840 in classical style , the bishop's palace is the seat of the Roman Catholic bishops of Satu Mare and building Roman Catholic School Group " Ham Janos " . The Episcopal chapel altar is married to whom the famous Hungarian poet Sándor Petofi and Julia Szendrey chapel Ardud city .
- **Theatre** - is the second building in the city theater ( the first being demolished in 1889) . Its foundations were filed on May 18, 1892 , the inauguration took place during a festive ceremony on 14 January 1892. The project was conducted by Adolf Voyta , architect of the Pope, the work was carried out under the supervision of the architect of Debrecen Lajos Szikszay and interior decorations were created by Spanraft and Hirsch
- **Shoemakers ' Guild building**
- **Ormos House**

**Churches**

- Roman Catholic Cathedral
- Reformed Church in chains
- Greek Catholic Cathedral " St. Archangels Michael and Gabriel "
- Orthodox Church " Assumption" ( " Cathedral " )

**Statues**

- Statue Capitoline Wolf ( Wolf )

**Muzeum**

- Workshop memorial Aurel Popp
- Memorial House "Vasile Lucaciu "
- County Museum
  
- **Cultural Heritage in Suceava County**

Suceava , one of the oldest cities in Romania and former capital of Moldova has many historical sites and tourist attractions, spread over the village and its surroundings. The city is

characterized by the large number of old Orthodox churches, Armenian, Roman Catholic, Hebrew. These churches and monasteries are evidence of ethnic diversity and multiculturalism settlement.

Also in Suceava there are several historical buildings, mostly built in the late nineteenth century and early twentieth century, the period during which the city mayor was Franz Des Loges. Also included are a number of statues, busts, mosaics and other monuments parietal representing sights. Most of the historical and touristic area are located in the old city, region stretching from Fortress (east) and Șcheia City (west).

**Suceava Museum** was founded in 1895 and acquired legal status on January 4, 1900. Currently, the main attractions include Museum of Bucovina Suceava, but also some memorial houses and museums located in other places in the county:

- Fortress of Suceava
- Royal Court of Suceava
- History Museum in Suceava
- Museum of Natural Sciences in Suceava
- Ethnographic Museum in Suceava (Royal Inn)
- Bucovina Village Museum
- Cultural Memorial Fund, including:
  - Memorial House "Simeon Florea Marian" Suceava
  - Memorial House "Nicolae Labis" in Mălini
  - Memorial House "Eusebius Camilar" in Udești
  - Solca House and Museum (Casa "Saveta Cotrubaș")
  - House and Museum Bilca
  - Museum complex "Porumbescu" in Stupca

### **Churches and monasteries in the number of 19 Memorial houses**

- Memorial House "Simeon Florea Marian"
- The house where he lived Porumbescu

### ➤ **Cultural Heritage in Tulcea County**

Tulcea counties in Romania is one of the richest archaeological heritage, but few sites are designed to be known by tourists. Sites are listed below:

- **Enisala medieval fortress**, the most visited archaeological site in Tulcea. Near them, on the commune Jurilovca city is Orgame/Argamum, the first town on the territory of Romania.
- **Aegyssus Citadel**
- **Roman-Byzantine fortress Noviodunum**

- **Another site that can enter the UNESCO Dinogetia citadel** is located in the perimeter Jijila , near the road that links Tulcea and Galati, near a monastery dedicated to ' Fount '.
- **Dinogetia was a Dacian settlement , then a Roman fortress mentioned by Ptolemy** in the citadel area more sherds were discovered proving the existence of Roman fortresses and before Diocletian(284-305 AD). At present, the citadel is administered by the Romanian Academy.
- **Troesmis Fortress** , located on an area of about 157 hectares near the village Turcoaia, ICEM runs a non-invasive research project site .
- **Halmyris City**, near Murighiol, located on St. George arm of the Danube was inhabited, according to ICEM , the Getae VI -V century BC

## II. UCRAINA

For Ukraine the information on cultural and historical heritage were taken from documents found on the following websites:

- [http://en.wikipedia.org/wiki/Ukrainian\\_Cultural\\_Heritage\\_Village](http://en.wikipedia.org/wiki/Ukrainian_Cultural_Heritage_Village)
- <http://whc.unesco.org/en/statesparties/ua>
- <http://www.history.alberta.ca/ukrainianvillage/>
- <http://culture.pl/en/article/polish-and-ukrainian-tserkvas-make-unesco-list>

### ➤ **CHERNIVTSI Oblast**

Residence of Bukovinian and Dalmatian Metropolitans - are registered on the List of UNESCO World Heritage Sites from 2011.

The Chernivtsi Oblast is administratively subdivided into 11 raions (districts). In this region there are a total of 12 monuments included in national cultural heritage. The most are in Chernivtsi city (8 monuments), 2 monuments in Khotyn Raion (the most important is Khotyn Fortress), 1 monument in Novoselytsia Raion and 1 monument in Storozhynets Raion.

Most of these monuments from Chernivtsi Oblast are churches and cathedrals.

### ➤ **ODESSA Oblast**

The Struve Geodetic Arc – as part of the chain of survey triangulations stretching from Hammerfest in Norway to the Black Sea, through 10 countries and over 2.820 km, which yielded the first accurate measurement of a meridian; - are registered on the List of UNESCO World Heritage Sites from 2005;

The Odessa Oblast is administratively subdivided into 26 raions (districts) and 7 municipalities. In this region there are a large number of monuments included in the cultural

heritage of Ukraine. Thus, in the 26 districts, there are a total of 169 monuments that are part of the national cultural heritage.

A special situation is found in the city of Odessa, where exist about of 1200 monuments. Most of them (several hundreds) are old buildings located on streets such as: Bazarna Street, Pushkinska Street, Marazliyivska Street, Kanatna Street, Katerynynska Street, Koblevska Street, Frantsuzkyi Boulevard, Deribasivska Street, Dvoryanska Street, etc.

Most of these monuments from Odessa Oblast are churches and cathedrals.

#### ➤ **IVANO-FRANKVISK Oblast**

The Ivano-Frankvisk Oblast is administratively subdivided into 14 raions (districts) and 5 cities (municipalities). In whole region there are a total of 85 monuments which are included in the national cultural heritage. Most of them are located in Dolyna Raion – 19 monuments and in Halych Raion – 14 monuments. Also, as in other districts, most of the monuments are churches and cathedrals.

#### ➤ **ZAKARPATTIA Oblast (Transcarpathian Oblast)**

Zakarpattia Oblast is administratively subdivided into 13 raions (districts), as well as 5 cities (municipalities). In this region there are a total of 126 monuments which are included in the national cultural heritage. Most of them are located in Uzhhorod city (53 monuments) and in Mukachevo city (31 monuments) these two are the most important cities from the region.

Also, churches and cathedrals ranks first among monuments.

**6. THE ENVIRONMENTAL PROTECTION OBJECTIVES, ESTABLISHED AT INTERNATIONAL, COMMUNITY OR MEMBER STATE LEVEL, WHICH ARE RELEVANT TO THE PROGRAMME AND THE WAY THOSE OBJECTIVES AND ANY ENVIRONMENTAL CONSIDERATIONS HAVE BEEN TAKEN INTO ACCOUNT DURING ITS PREPARATION**

**I. ROMANIA**

***The Partnership Agreement with Romania***

The Partnership Agreement (PA) Romania - EU approved on August 6, 2014 provides the strategic framework for the necessary reforms and investment to be carried out in the 2014-2020 period. The PA is the main strategic document, covering needs and investments totaling approximately 40 billion Euros.

The PA objectives are totally coherent and convergent with ENI CBC Thematic Objectives due to the fact that the documents are converging in EU 2020 strategy. The main development issues in terms of environmental protection and resource efficiency are the following:

- Expanding public access to water services in the context of the Framework Directive, regarding the water and watershed management plans;
- Implementing and upgrading infrastructure for compliance with the requirements of the Directive on waste and Plans Waste Management and prevention programs and maintenance;
- Protection and nature conservation, including a coherent and functional network Natura 2000, support for high nature value farming systems and restoration of degraded ecosystems; Sustainable management of natural resources in Romania, including landscapes, farmland, forests, inland waters and coastal protected areas and biodiversity;
- Development and improvement of air quality assessment and monitoring;
- Improving urban sustainable transport and reducing pollution;
- Addressing the situation of abandoned and contaminated sites, and management of existing sources of pollution;
- Preservation and protection of cultural heritage;
- Reduce the risk of abandonment of farming activities;
- Development of public institutions through integrated management plan.

Based on the conclusions of the analyse on development difficulties and prevention of emergency situations the main development needs are:

- improving Romania's ability to anticipate, prevent and respond to emergencies, natural or anthropogenic extreme;
- Romania improved adaptation and resilience to the negative consequences of climate change and, in particular, the increased incidence of extreme heat events, drought, coastal erosion and flooding in the National Strategy on Climate Change;
- Romania improved adaptation and resilience resistance to other natural and anthropogenic risks;

- adoption of farming practices to improve resilience to climate change; advisory services should accompany the adoption of measures at farm level;
- enhance water efficiency in agriculture contributes to climate change adaptation.

### ***National Reform Program for Romania (NRP)***

This strategic document is setting the framework for the main priorities and reforms to be applied on short and medium term for Romania to meet the objectives of the Europe 2020 Strategy. The NRP includes particular measures in various policy areas targeted to sustain growth and create jobs and meet the objectives of Europe 2020. Focused on the Romania's most urgent measures, the National Reform Program (NRP) is paying special attention to governance issues and macroeconomic stability. It is aiming to boost competitiveness, productivity and growth, social cohesion, territorial and economic convergence for reducing disparities in terms of economic development to other member states of the European Union.

Generally, ENI CBC Thematic Objectives are converging with NPR measures, with the exception of two of them, *TO3 Promotion of local culture and preservation of historical heritage* and *TO10 Promotion of border management and border security*, that are not essential to the NRP.

#### **National Strategy on Climate Change 2013 ÷ 2020**

Given the evolution of EU policy on climate change, the second NSCC 2013 ÷ 2020 was adopted by Government Decision no. 529/2013, foreshadowing two action directions: reducing greenhouse gas emissions and increasing carbon sequestration through natural absorbent tanks; and adaptation to the negative effects of climate inherent change on natural and anthropogenic systems.

The strategy overall objective is to integrate the obligations related to energy and climate legislative package underlying principles that will guide the development of action plans and programs at sectoral level, setting goals and targets to be achieved through future specific measures and actions at sectoral level.

NSCC highlights the two key components of the climate effort: the prevention and mitigation of climate change (through action to reduce emissions of greenhouse gases - GHG emissions) and the appropriate adaptation measures with minimal damage in the context of the climate change already underway.

GHG emission mitigation component identifies the economic sectors that require specific measures to reduce GHG emissions (energy, industrial processes, agriculture, land use, land use change, forestry, waste management). In addition, data on the GHG emissions contribution of each sector, general information on how human activity (productive processes or consumer / user) alongside with natural processes lead to these types of emissions are presented and key measures to reduce GHG emissions in each sector are proposed.

The objective of adaptation to climate change component is to increase the capacity to adapt to real or potential effects of climate change by establishing strategic directions that can guide sectoral policy development, action to be taken and capacity development needed to update them regularly. Actions supported by this component are:

- active monitoring of climate change impacts and associated social and economic vulnerability;
- integration of adaptation measures to climate change into development strategies and policies at sectoral level and the harmonization of these measures between them;
- identify urgent adaptation measures to climate change in critical socio-economic sectors.

National adaptation to climate change component encourages the identification of measures, actions and solutions that must be implemented in accordance with existing national needs in line with available resources and research requirements in order to limit the negative effects of forecast climate scenarios in medium and long term. Measures, actions and solutions identified will be implemented through inter-institutional cooperation and by providing technical assistance.

NSCC provides guidance support on policies and measures to be taken using EU structural and investment funds of the future of financial year (2014 ÷ 2020).

NSCC will contribute to the sustainable use of natural resources; reduce emissions of greenhouse gases in our country and the protection of biodiversity and natural ecosystems.

The objectives included in NSCC in 2013 ÷ 2020 will contribute to the sustainable use of natural resources, to the reduction of Romania greenhouse gases emissions, to the protection of biodiversity and natural ecosystems and the long-term preservation of social welfare by creating new jobs in specific sectors.

#### *National Strategy for Flood Risk Management on medium and long term*

NSFRM on medium and long term (2010÷2035), developed under SEA procedure, has been approved by GD no.846/2010 and its main objective is to prevent and reduce the consequences of floods on human life and health, socio-economic activities and the environment. The strategy foresees an integrated management of water and adjacent resources: planning and urban development, nature protection, agricultural and forestial development, protection of transport infrastructure, building and tourist areas, personal protection, etc.

National Strategy for Flood Risk Management objectives are the following:

- social objectives: prevention and minimization flood risk on people and human communities, prevention and minimization flood risk on public/ community goods (hospitals, clinics, schools, etc.) and recreational areas, minimizing damage to health state due to the impact on population of the flooding phenomenon and pollution associated with it;
- economic objectives: prevention and minimization of economic loses by reducing the flood risk in populated area, minizing risks on economic objectives and goods by providing flood protection for localities with the exceedance probability of 1% for urban areas and 10% for agricultural areas, differentiated on various scenarios time.
- environmenta objectives – the accomplish the European Water Framework Directive requirements, avoiding the influence of anthropogenic alteration on

watershed geomorphology, preventing pollution of watercourses and groundwater as a result of floods and their associated effects on the ecological quality of watercourses; protect and improve the land, and where possible encourage changes in agricultural practice to prevent or minimize leakage and flooding associated with it due to intensive agricultural activities; protection and preservation of historic monuments, protected areas and ecosystems; protecting and improving the environment and the specificity of its aesthetic appearance; minimize or prevent impacts of climate change on the occurrence of floods phenomenon.

In respect to the SNMRI objectives there have been developed plans for prevention, protection and mitigation of floods effects (PPPD), as required by Directive 2007/60 / EC (Flooding) in order to reduce the risk of natural disasters (floods) affecting the population, by implementing preventive measures in most vulnerable areas in the medium term (2020). PPPD will be completed in 2014 ÷ 2015 and will form the basis of schemes necessary to protect the population goods, property and cultural values against floods on each basin / catchment area. On this basis it will be developed Hydrographic Basin Development Plans and Flood Risk Management Plans.

#### *Waste Management*

In order to ensure effective waste management one should consider all relevant legislative provisions as:

- Accession Treaty -section Environment - Romania's commitments for the waste sector for each county are detailed within the EU Directives Implementation Plans;
- SOP Environment - Priority Axis 2, Intervention area 1 - "Development of integrated waste management and waste management infrastructure expansion";
- National Waste Management Strategy (NWMS), approved by Government Decision no. 1470/2004, the basic tool that ensures implementation in Romania of EU waste policy. NWMS 's overall objective is to create the necessary framework for the development and implementation of an integrated waste management environmentally effective and economically feasible to protect human health and the environment.
- National Waste Management Plan (NWMP), GD 1470/2004, constitute the implementing plan national strategy objectives through adequate actions and measures to comply with the environmental acquis in the field of waste management;
- Regional Waste Management Plan for the Region 1 - North - East, approved by Order EWM no. 1364/1499/2006.

#### ***North-East Regional Development Plan 2014-2020***

The strategy identified four key strategic priorities for the NE Region of Romania:

- Improving human capital;

- Development of modern infrastructure;
- Sustaining competitive economy and local development
- Optimizing the use and protection of natural resources.

Most of the specific objectives of this strategy are convergent with ENI CBC Thematic Objectives and their respective priorities, as reflected in the table below.

### ***South-East Regional Development Plan 2014-2020***

The strategic document (currently in consultation process) identified ten development priorities for the SE Region as follow:

- Integrated sustainable urban development;
- Development of regional transport infrastructure;
- Improving the competitiveness of the regional economy, in the context of promoting smart specialization;
- Improving the quality of tourism at regional level;
- Conservation and protection of environment;
- Improving energy efficiency and using renewable resources;
- Improving quality in education, health and social inclusion;
- Recovery superior resources in rural areas and upgrading of the rural economy;
- Improving human resources at the regional level in the context of smart regional specialization;
- Promoting cross-border and interregional cooperation.

Even if these development priorities are formulated differently than the objectives of the CBC programmes, the measures included in the SE Regional Development Plan are strongly convergent with ENI CBC Thematic Objectives.

## **II. UKRAINA**

### ***State Strategy of Regional Development for the period until 2020***

In the current 2014 context, the Strategy points out new risks and challenges that emerged in 2014 due to external influence of Russian Federation regarding Crimea and Sevastopol and Eastern regions of Ukraine. It is also emphasized that the document has been elaborated in accordance with the European standards and in compliance with the EU's budget cycles. The document takes into account such modern trends as urbanization, openness to movement of labor force.

The Strategy defines the goals of state's regional policies and key targets of regional authorities and structures of self-governance. The UA Government declares that it shares EU's approach towards avoiding the increase of the regional disproportions however admits limitation in resources necessary for the efficient efforts in this direction.

The key goals of the Strategy are;to raise of the competitiveness of the regions, good governance and decentralization of power and enhanced coordination in such areas as transport and infrastructure, economic development and investments, support to entrepreneurship, labor market, education and science and innovations.

Increasing competitiveness of the regions in accordance with the Strategy can be reached by enhances access to the regions including the development of transport networks, applying new technologies, ensuring environmental protection and enhanced economic activities in the country. The Strategy also points out the necessity of the efficient interaction with the external mechanisms of support (e.g. ENPI). One of the important objectives foreseen by the Strategy is diversification of sources of energy supplies, increase of energy efficiency, modernization of industries aimed at enhancing of energy efficiency, substituting gas by other energy resources gained from renewable sources of energy and alternative types of fuel.

Good governance and efficient state policies in the field of regional development can be reached by decentralization of power and enhanced coordination of activities between central authorities and self-governance bodies.

Additional priority is given to the development of border security and efficient border management in the regions bordering Russia, although the Strategy also mentions plans for the improvement of the ecological situation in the bordering regions, development of near-border infrastructure and enhanced cooperation with the local communities of the bordering states.

### **III. UNIUNEA EUROPEANĂ**

#### ***Europe 2020***

Europe 2020 is the EU's ten-years growth and jobs strategy launched in 2010. It aims to create within the EU the conditions for economic growth:

- Smart, through more effective investments in education, research and innovation;
- Sustainable, thanks to a decisive move towards a low-carbon economy;
- Inclusive, with a strong emphasis on job creation and poverty reduction.

The EU 2020 targets are focused on:

- Employment;
- Research and Development;
- Climate change and energy sustainability;
- Education, and
- Fighting poverty and social exclusion.

#### ***Danube Strategy***

In 2011 the European Council, at Romania and Austria proposal, adopted a macro-regional strategy to boost development of the Danube basin region. The strategy aims to create

synergies and coordination between policies and initiatives taking place in the Danube basin region, including in 14 countries, including Romania, Moldova and Ukraine.

The strategy is based on four major pillar:

- A. connecting the Danube region;
- B. protect the environment in the Danube region;
- C. improve prosperity in the Danube region;
- D. strengthening the Danube region.

Each pillar of the strategy corresponds to specific areas of action, grouped into 11 priority areas, each priority area is coordinated by 2 states / provinces in the region, namely:

#### A. Connecting the Danube Region

- Improving mobility and multimodality:
  - a. inland waterways; (*Austria and Romania*)
  - b. road, rail and air; (*Slovenia and Serbia*)
- Promote sustainable energy; (*Hungary and Czech Republic*)
- Promote culture and tourism, people to people contacts; (*Romania and Bulgaria*)

#### *B. Protecting the environment in the Danube region*

- restore and maintain water quality; (*Hungary and Slovakia*)
- manage environmental risks; (*Hungary and Romania*)
- preserve biodiversity, landscapes and air and soil quality (*Bavaria and Croatia*)

#### *C. Building prosperity in the Danube region*

- Develop the knowledge society through research, education and information technologies; (*Serbia and Slovakia*)
- support the competitiveness of enterprises, including cluster development; (*Baden Württemberg Croatia*)
- Investing in people and skills; (*Austria and Moldova*)

#### *D. Strengthening the Danube Region*

- Improving institutional capacity and cooperation; (*Austria and Slovenia*)

Work together to promote security and tackle organized crime and serious crime issues. (*Bavaria and Bulgaria*). Most of ENI CBC's strategic thematic objectives, excluding social inclusion and local government are well represented in this strategy. Among the priority axes related also to matters / activities of the CBC Programme shall include:

- connectivity (intermodal transport, culture and tourism, energy networks);
- Environmental protection (water management, biodiversity protection and risk management);
- Increasing prosperity of the Danube region (education, research, competitiveness);
- Improvement of governance (institutional capacity and internal security).

Given the cross-country and regional dimension of the Danube Strategy is needed an integrated approach to border Cooperation Programme to support joint complementary measures.

Representing the Eastern dimension of the European Neighbourhood Policy, this initiative was launched at the Prague summit in 2009 and was reaffirmed in 2011 and subsequently in 2013. It aims to deepen and strengthen relations between the European Union and its six Eastern neighbours, Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine.

The EaP is focused on several Flagship Initiatives as follows:

- Integrated Border Management Programme;
- Small and Medium-size Enterprise (SME);
- Regional energy markets and energy efficiency;
- Diversification of energy supply;
- Prevention of, preparedness for and response to natural and man-made disasters;
- Good environmental governance.

The implementation of the Programme Romania-Ukraine thematic objectives should take into consideration the EU Directives, Decisions and Regulations on air quality, surface water and groundwater, soil and subsoil, climate change, health, biodiversity, conservation, resource efficiency or the national legislation in force (Romania or Ukraine) if this is less restrictive.

The development of the program indicative actions will consider the measures necessary to fulfill the Convention - United Nations Framework on Climate Change and Kyoto Protocol. It also will take into account any other national or European policy or strategy on adaptation and mitigation of climate change.

The projects promoted through the programme indicative activities will be in line with the legal framework and provisions of the Romania-Ukraine bilateral water management, namely the *Agreement between the Government of Romania and the Government of Ukraine on cooperation border water management*, signed on 30 September 1997 in Galati and ratified by Law no. 16/1999.

**7. THE LIKELY SIGNIFICANT EFFECTS ON THE ENVIRONMENT, INCLUDING ON ISSUES SUCH AS BIODIVERSITY, POPULATION, HUMANHEALTH, FAUNA, FLORA, SOIL, WATER, AIR, CLIMATIC FACTORS, MATERIAL ASSETS, CULTURAL HERITAGE INCLUDING ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE, LANDSCAPE AND THE INTERRELATIONSHIP BETWEEN THE ABOVE FACTORS**

**TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT & INNOVATION**

**Objective 1:** *Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level* **Priority 1.1**

**– Institutional cooperation in the educational field for increasing access to education and quality of education**

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact
1.	Joint planning and joint development of educational strategies;	Is not the case	Indirectly
2.	Exchanges of experience, teacher exchanges, transfer of good practices between institutions from both sides of the border for increasing the effectiveness of education through the diversification of professional training programs for employees in the education system in areas such as:		
	- School development, school management, developing the relation between schools and communities;	Is not the case	Indirectly
	- Developing and applying innovative educational methods, for increasing teaching skills to facilitate and motivate students to perform;	Is not the case	Indirectly
3.	Developing specific joint programs of entrepreneurship education, programmes that stimulate creativity, innovation and active citizenship;	Is not the case	Indirectly
4.	Rehabilitation/modernization/ extension/ equipment procurement for the educational infrastructure to provide the necessary material preconditions of a quality educational process and increase the participation in the educational processes;	Efficiency uses of resources Waste management	Positive Reduced consumption of power raw material, hazardous substances Resulted waste reused/ recycling
5.	Development and implementation of partnerships between education institutions from both sides of the border to:		
	- Prevent and correct early school leaving phenomenon through integrated programs (including awareness campaigns) for prevention of school dropout, encourage school attendance and reintegration of those who have left school	Is not the case	Indirect

	early; Develop after school programs and extra-curricular activities;	Is not the case	Indirectly
6.	Development and implementation of joint actions in support of disadvantaged groups, e.g.:	Is not the case	
	Integrated support actions addressing children and youth with parents living abroad (which may include inter alia guidance, counselling, after school programmes, educational and cultural activities);	Is not the case	Indirectly
	Support actions meant to facilitate the social and work integration of people (children, youth and adults) with disabilities*	Is not the case	Indirectly
7.	Joint support actions for youth for the prevention of drug use, human trafficking, alcohol abuse, etc.	Is not the case	Indirectly
8.	Development and implementation of cross border actions for enhancing/improving/facilitating job qualifications and competences	Is not the case	Indirectly

### Priority 1.2 – Promotion and support to research and innovation

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact
1.	Development of partnerships/networking between universities for joint development of theoretical research	Is not the case	Indirectly
2.	Joint research actions and studies (including related equipment procurement) in the field of environment (climate change challenges, preservation of biodiversity, renewable energy and resource efficiency, etc.).	Is not the case	Indirectly
3.	Promotion and support for research and innovation through rehabilitation/modernization/extension of the specific infrastructure including the procurement of related equipment.	Efficiency Waste management	Positive Reduced consumption of power raw material, hazardous substances

## TO3 - PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE

**Objective 2:** *Preservation of the cultural and historical heritage in the eligible area, support the development of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.*

### Priority 2.1 – Preservation and promotion of the cultural and historical heritage

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact
1.	Restoration, conservation, consolidation, protection, security of cultural and historical monuments (including the corresponding access roads), museums, objects and art collections and	Biodiversity Cultural heritage	Positive The technologies should have a minimum impact

	their joint promotion based on relevant cross-border strategies/concepts;		
2.	Preservation, security, and joint valorisation of cultural and historical monuments and objects;	Biodiversity Cultural heritage	Positive Reduced consumption of power raw material, hazardous substances
3.	Cultural institutions networks aiming at the promotion of the cultural and historical heritage	Is not the case	Indirectly
4.	Support for specific and traditional craftsman activities, important for preserving local culture and identity.	Is not the case	Indirectly
5.	Promotion of specific and traditional activities in the eligible area (including cross border cultural events);	Is not the case	Indirectly
6.	Preserving, promoting and developing the cultural and historical heritage, mainly through cultural events with a cross-border dimension;	Is not the case	Indirectly
7.	Valorisation of the historical and cultural heritage through developing joint promotion strategies, common tourism products and services.	Is not the case	Indirectly

## **TO7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS**

**Objective 3:** *Improve public transport services, infrastructure and ITC cooperation and networking*

### **Priority 3.1 – Development of cross border transport infrastructure and ICT tools**

<b>No. crt.</b>	<b>Indicative activities</b>	<b>Environmental aspects and objective considered</b>	<b>Potential impact</b>
1.	Reconstruction, rehabilitation, modernization of cross-border transport systems	Air Water Soil Waste Management Biodiversity	Positive
2.	Development of environmentally friendly (carbon-proofed) cross-border transport initiatives and innovative solutions ;	Air Water Soil Waste Management Biodiversity	Positive
3.	Improvements of multimode transport (road/water) facilities of cross-border interest;	Air Water Soil Waste Management Biodiversity	Positive
4.	Reconstruction, rehabilitation, widening of cross-border (segments of) roads connecting settlements alongside the border with main road, which leads to the border;	Air Water Soil	Positive

		Biodiversity	
5.	Improvement/restoration/construction of (segments of) access roads to centres of cross-border interest;	Air Water Soil Climatic change Biodiversity	Positive
6.	Elaboration of joint strategies/policies/plans for improving the cross-border transport infrastructure;	Is not the case	Indirectly
7.	Development of cross-border connections, information and integrated communications network and services;	Is not the case	Indirectly
8.	Upgrading existing facilities to enable linkages between communities and public services which promote co-operation on a cross-border and wider international basis;	Is not the case	Indirectly

## TO8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY

**Objective 4:** *Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects*

### Priority 4.1 - Support to the development of health services and access to health

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact
1.	Joint activities meant to enhance the access to health in the border area through construction / rehabilitation / modernization of infrastructure of public health services (including through the use of renewable energy etc.);	Air Water Soil Climate change Waste Management Population and public health	Positive
2.	Developing labs and mobile labs for screening / clinical monitoring of diseases and prevention of cross border epidemics;	Population and public health	Positive
3.	Equipping specific public medical service infrastructure (outpatient, emergency room facilities, medical centres, integrated social intervention, etc.);	Population and public health	Positive
4.	Joint training programs and exchange of experience, networking for supporting the functioning of the specific public medical services, telemedicine ;	Is not the case	Indirectly
5.	Exchange of experience, joint activities in order to ensure compatibility of the treatment guidelines, joint diagnosis programmes;	Is not the case	Indirectly
6.	Awareness campaigns concerning public education on health, diseases and prevention of epidemics.	Is not the case	Indirectly

### Priority 4.2 – Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact
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1.	Common measures for preventing land slide and flooding of the cross border areas;	Soil Water Waste Management Biodiversity	Positive
2.	Joint integrated systems for efficient monitoring and disaster prevention and for the mitigation of consequences;	Soil Water Waste Management  Biodiversity	Positive
3.	Common strategies and tools for hazard management and risk prevention including joint action plans;	Is not the case	Indirectly
4.	Elaborating of joint detailed maps and databases (indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services;)	Soil Water Biodiversity	Positive
5.	Exchanging experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the cross-border area;	Is not the case	Indirectly
6.	Development of integrated and common standards for the urban planning and risk management;	Is not the case	Indirectly
7.	Investments and development of common, integrated, emergency management systems.	Air Soil Water Waste Management Climate change Biodiversity	Positive
8.	Planning co-ordinated actions of the authorities in emergency situations caused by natural and man-made disasters (flood, fire, heat waves, earthquakes, storms).	Is not the case	Indirect

### Priority 4.3 Prevention and fight against organised crime and police cooperation

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact
1.	Common actions for increasing mobility and administrative capacity of police units (including border police);	Is not the case	Indirectly
2.	Creating collaborative working platforms in order to increase the efficiency of police, border police and custom structures in the exchange of data and information;	Is not the case	Indirectly
3.	Joint trainings of police, customs, border police, gendarmerie, exchange of best practices on specific areas of activity (analysis, criminal investigation, organized crime).	Is not the case	Indirectly
4.	Investment in construction, renovation or upgrading of police and border crossing infrastructure and related buildings;	Air Water Soil	Positive

		Waste Management	
5.	Investments in operating equipment and facilities specific for the activity of police/customs/border police/gendarmerie (e.g. laboratories, equipment, detection tools, hardware and software, means of transport);	Air Climate change	Positive
6.	Developing common policies and strategies, experience exchange for fighting organised crime.	Is not the case	Indirectly

## LARGE INFRASTRUCTURE PROJECTS

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact
1.	«Clean river» Dunărea	Water Biodiversity	Positive
3.	Improving the cross-border infrastructure – opening the gate to Europe	Air Water Soil Waste Management	Positive
4.	Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine	Air Water Soil Waste Management	Positive
5.	Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management.	Air Water Soil Waste Management	Positive

The resulted effects on the environment of the each indicative activities corresponding to the thematic objectives priorities of the Programme Ro-Ua will be identified and estimated. In this evaluation all the national, European and international relevant environmental objectives and policies are taken into consideration.

The impact of the eligible activities financed by the Program is analysed for each of the following relevant aspects that characterised the environment:

- Air;
- Surface and underground waters;
- Soil and subsoil and landscape;
- Climate changes;
- Population and public health;
- Biodiversity, flora and fauna;
- Waste management;
- Cultural heritage;
- Resources efficiency, including renewable sources

The projects promoted through the programme indicative activities will be in line with the legal framework and provisions of the Romania-Ukraine bilateral water management, namely the *Agreement between the Government of Romania and the Government of Ukraine on*

*cooperation border water management*, signed on 30 September 1997 in Galati and ratified by Law no. 16/1999.

Projects related to water management approved for funding and promoted by other institutions must have the approval of the competent authority in the field, the "Romanian Waters" National Administration and Water Branches of the Ro-Ua Programme eligible area.

Any work / investment / activity to be completed on transboundary waters or in the area of common interest require the opinion / authorization of the "Romanian Waters" National Administration and shall obtain the approval of Ukraine authorities.

Also, projects funded by the Ro-Ua Programme will have to consider all legislative provisions on integrated waste management in Romania and similar legislation in Ukraine.

A scoring approach, as presented in Table 7.1, is used for the environment assesment of the activities financed by the Programme Ro- Ua.

**Table 7.1** Scoring approach to environmental assessment

<b>Symbol</b>	<b>Semnification</b>	<b>Definition</b>
<b>++</b>	Significant Positive Impact	Highly positive benefit for the environment which is of considerable importance in terms of its overall policy implication
<b>+</b>	Positive Impact	Positive effect on the environment which is not considered to be significant
<b>0</b>	Neutral	No effect envisaged
<b>-</b>	Negative Impact	Negative impact on the environment which is not considered to be significant
<b>--</b>	Significant Negative Impact	Highly adverse impacts on aspects of the environment which seriously demand to be addressed through revision of current stated policy
<b>?</b>	Uncertainty	Effect could not be determined due to lack of data or information

The assessment methodology was achieved by estimating the environmental impact of every aspect that was highlighted in Table 7.2. At this level of detail in the program was used a comprehensive methodology which attempted to highlight the possible effects of indicative actions on environmental issues. Applying accuracy of the methodology depends very much on projects that will be funded.

Table 7.2 presents the impact of the indicative action on each relevant environmental aspect.

Assesment of the Programme Thematic Objectives on Environmental Factors	Air	Water	Soil	Climate Change	Populatio, Human Health	Biodiversity, Flora and Fauna	Waste Management	Landscape	Cultural Heritage	Resource efficiency	Social - economic
<b>TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT &amp; INNOVATION</b>											
<b>Objective 1:</b> : <i>Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level</i>											
<b>Priority 1.1 – Institutional cooperation in the educational field for increasing access to education and quality of education</b>											
Joint planning and joint development of educational strategies	0	0	0	0	0	0	0	0	0	0	0
Exchanges of experience, teacher exchanges, transfer of good practices between institutions from both sides of the border for increasing the effectiveness of education through the diversification of professional training programs for employees in the education system in areas such as: - School development, school management, developing the relation between schools and communities; - Developing and applying innovative educational methods, for increasing teaching skills to facilitate and motivate students to perform;	0	0	0	0	0	0	0	0	0	0	0
Developing specific joint programs of entrepreneurship education, programmes that stimulate creativity, innovation and active citizenship;	0	0	0	0	0	0	0	0	0	0	0
Rehabilitation/modernization/ extension/ equipment procurement for the educational infrastructure to provide the necessary material preconditions of a quality educational process and increase the participation in the educational processes;	?	?	?	0	0	0	-	0	0	+	0
Development and implementation of partnerships between education institutions from both sides of the border to: -Prevent and correct early school leaving phenomenon through integrated programs (including awareness campaigns) for prevention of school dropout, encourage school attendance and reintegration of those who have left school early; -Develop after school programs and extra-curricular activities;	0	0	0	0	0	0	0	0	0	0	+
Development and implementation of joint actions in support of disadvantaged groups, e.g.: - Integrated support actions addressing children and youth with parents living abroad (which may include inter alia guidance, counselling, after school programmes, educational and cultural activities); - Support actions meant to facilitate the social and work integration of people (children, youth and adults) with disabilities	0	0	0	0	0	0	0	0	0	0	+

Assesment of the Programme Thematic Objectives on Environmental Factors	Air	Water	Soil	Climate Change	Populatio, Human Health	Biodiversity, Flora and Fauna	Waste Management	Landscape	Cultural Heritage	Resource efficiency	Social - economic
Joint support actions for youth for the prevention of drug use, human trafficking, alcohol abuse, etc.	0	0	0	0	0	0	0	0	0	0	+
Development and implementation of cross border actions for enhancing/improving/ facilitating job qualifications and competences	0	0	0	0	0	0	0	0	0	0	+
<b>Priority 1.2 – Promotion and support to research and innovation</b>											
Development of partnerships/networking between universities for joint development of theoretical research	0	0	0	0	0	0	0	0	0	0	+
Joint research actions and studies (including related equipment procurement) in the field of environment (climate change challenges, preservation of biodiversity, renewable energy and resource efficiency, etc.).	+	+	+	++	+	++	+	0	0	0	0
Promotion and support for research and innovation through rehabilitation/modernization/extension of the specific infrastructure including the procurement of related equipment.	?	?	?	0	0	0	-	0	0	+	0
<b>TO3- PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE</b>											
<b>Objective 2:</b> <i>Preservation of the cultural and historical heritage in the eligible area, support the development of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.</i>											
<b>Priority 2.1 – Preservation and promotion of the cultural and historical heritage</b>											
Restoration, conservation, consolidation, protection, security of cultural and historical monuments (including the corresponding access roads), museums, objects and art collections and their joint promotion based on relevant cross-border strategies/concepts;	-	-	-	0	0	?	?	+	++	0	+
Preservation, security, and joint valorisation of cultural and historical monuments and objects;	0	0	0	0	0	0	?	0	++	0	0
Cultural institutions networks aiming at the promotion of the cultural and historical heritage	0	0	0	0	0	0	0	0	0	0	0
Support for specific and traditional craftsman activities, important for preserving local culture and identity.	0	0	0	0	0	0	0	0	++	0	+
Promotion of specific and traditional activities in the eligible area (including cross border cultural events);	0	0	0	0	0	0	0	0	+	0	0
Preserving, promoting and developing the cultural and historical heritage, mainly through cultural events with a cross-border dimension;	0	0	0	0	0	0	0	0	+	0	0
Valorisation of the historical and cultural heritage through developing joint promotion strategies, common tourism products and services.	0	0	0	0	0	0	0	0	0	0	0

Assesment of the Programme Thematic Objectives on Environmental Factors	Air	Water	Soil	Climate Change	Populatio, Human Health	Biodiversity, Flora and Fauna	Waste Management	Landscape	Cultural Heritage	Resource efficiency	Social - economic
<b>TO7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS</b>											
<i>Objective 3: Improve public transport services, infrastructure and ITC cooperation and networking</i>											
<b>Priority 3.1 – Development of cross border transport infrastructure and ICT tools</b>											
Reconstruction, rehabilitation, modernization of cross-border transport systems	-	-	-	-	+	-	-	-	0	0	+
Development of environmentally friendly (carbon-proofed) cross-border transport initiatives and innovative solutions ;	++	+	+	++	+	-	-	-	0	+	+
Improvements of multimode transport (road/water ) facilities of cross-border interest;	++	++	+	++	+	-	-	-	0	+	+
Reconstruction, rehabilitation, widening of cross-border (segments of) roads connecting settlements alongside the border with main road, which leads to the border;	++	++	+	++	+	-	-	-	0	+	+
Improvement/restoration/construction of (segments of) access roads to centres of cross-border interest;	++	++	+	++	+	-	-	-	0	+	+
Elaboration of joint strategies/policies/plans for improving the cross-border transport infrastructure;	0	0	0	0	0	0	0	0	0	0	0
Development of cross-border connections, information and integrated communications network and services;	0	0	0	0	0	0	0	0	0	0	0
Upgrading existing facilities to enable linkages between communities and public services which promote co-operation on a cross-border and wider international basis;	+	+	+	+	+	?	?	+	?	0	+
<b>TO8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY</b>											
<i>Objective 4: Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects</i>											
<b>Priority 4.1 - Support to the development of health services and access to health</b>											
Joint activities meant to enhance the access to health in the border area through construction / rehabilitation / modernization of infrastructure of public health services (including through the use of renewable energy etc.);	0	0	0	0	0	0	0	0	0	0	0
Developing labs and mobile labs for screening / clinical monitoring of diseases and prevention of cross border epidemics;	+	+	+	+	++	-	-	+	0	+	+
Equipping specific public medical service infrastructure (outpatient, emergency room facilities, medical centres, integrated social intervention, etc.);	0	0	0	0	++	0	0	0	0	0	+

<b>Assesment of the Programme Thematic Objectives on Environmental Factors</b>	<b>Air</b>	<b>Water</b>	<b>Soil</b>	<b>Climate Change</b>	<b>Populatio, Human Health</b>	<b>Biodiversity, Flora and Fauna</b>	<b>Waste Management</b>	<b>Landscape</b>	<b>Cultural Heritage</b>	<b>Resource efficiency</b>	<b>Social - economic</b>
Joint training programs and exchange of experience, networking for supporting the functioning of the specific public medical services, telemedicine ;	0	0	0	0	++	0	0	0	0	0	+
Exchange of experience, joint activities in order to ensure compatibility of the treatment guidelines, joint diagnosis programmes;	0	0	0	0	++	0	0	0	0	0	+
Awareness campaigns concerning public education on health, diseases and prevention of epidemics.	0	0	0	0	++	0	0	0	0	0	+
<b>Priority 4.2 – Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations</b>											
Common measures for preventing land slide and flooding of the cross border areas;	+	++	++	?	0	+	0	+	0	0	++
Joint integrated systems for efficient monitoring and disaster prevention and for the mitigation of consequences;	0	++	++	?	0	+	0	0	0	0	+
Common strategies and tools for hazard management and risk prevention including joint action plans;	+	+	+	0	0	0	0	+	+	0	+
Elaborating of joint detailed maps and databases (indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services);	0	+	+	0	0	0	0	+	+	0	0
Exchanging experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the cross-border area;	0	0	0	0	0	0	0	0	0	0	+
Development of integrated and common standards for the urban planning and risk management;	0	0	+	0	0	0	?	+	0	0	0
Investments and development of common, integrated, emergency management systems.	0	0	0	0	0	0	0	0	0	0	+
Planning co-ordinated actions of the authorities in emergency situations caused by natural and man-made disasters (flood, fire, heat waves, earthquakes, storms).	0	0	0	0	0	0	0	0	0	0	0
<b>Priority 4.3 Prevention and fight against organised crime and police cooperation</b>											
Common actions for increasing mobility and administrative capacity of police units (including border police);	0	0	0	0	0	0	0	0	0	0	0
Creating collaborative working platforms in order to increase the efficiency	0	0	0	0	0	0	0	0	0	0	0

<b>Assesment of the Programme Thematic Objectives on Environmental Factors</b>	<b>Air</b>	<b>Water</b>	<b>Soil</b>	<b>Climate Change</b>	<b>Populatio, Human Health</b>	<b>Biodiversity, Flora and Fauna</b>	<b>Waste Management</b>	<b>Landscape</b>	<b>Cultural Heritage</b>	<b>Resource efficiency</b>	<b>Social - economic</b>
of police, border police and custom structures in the exchange of data and information;											
Joint trainings of police, customs, border police, gendarmerie, exchange of best practices on specific areas of activity (analysis, criminal investigation, organized crime).	0	0	0	0	0	0	0	0	0	0	0
Investment in construction, renovation or upgrading of police and border crossing infrastructure and related buildings;	+	+	+	0	0	0	-	0	0	+	++
Investments in operating equipment and facilities specific for the activity of police/customs/border police/gendarmerie (e.g. laboratories, equipment, detection tools, hardware and software, means of transport);	+	+	+	+	+	0	-	0	0	+	+
Developing common policies and strategies, experience exchange for fighting organised crime.	0	0	0	0	0	0	0	0	0	0	++
<b>LARGE INFRASTRUCTURE Projects</b>											
«Clean river» Dunărea	0	++	++	+	+	++	++	++	0	0	+
Improving the cross-border infrastructure – opening the gate to Europe	+	+	+	+	0	0	+	+	0	0	++
Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine	0	0	0	0	+	0	0	0	0	0	++
Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management.	0	0	0	0	+	0	0	0	0	0	++

## **8. 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<sup>1</sup>**

- Environmental impact assessment of indicative actions under the 4 thematic objectives of the Programme Ro-Ua performed in chapter 7 of this Environmental Report revealed that most of them have an indirect effect, activities of cooperation and support between the two partner states having a neutral impact: Education, research, technological development and innovation;
- Preservation of cultural and historical heritage;
- Strategies for improving cross-border transport infrastructure;
- Development of health and access to health;
- Strategies to prevent and manage natural and man made disasters;
- Prevention and fight against organized crime and police cooperation.

Given that the effects on the environment of future projects funded by the indicative actions of the four thematic objectives and the five large infrastructure projects should be reduced as far as possible the following actions are recommended:

- Reduce the electricity and / or heat consumption;
- Reduce fuel, raw materials and hazardous substances consumption;
- Use of high energy performance equipments;
- Choose appropriate technologies for restoration/ preservation and respect them accurately so that the solutions chosen do not affect species of flora, fauna and aquatic ecosystems in the area;
- Valorification of cultural/ historical heritage should take into account the fact that it should not affect flora and fauna and aquatic ecosystems in the area;
- Preservation and conservation of protected species and habitats
- Minimize waste production;
- Minimize production of waste both during construction and functioning.
- Ensure collection/ sorting/ recycling/ waste recovery;
- Choice of technologies for construction/ rehabilitation/ widening roads with reduced emissions of particulate matter;
- Solutions for infrastructure construction so as to avoid contamination of soil and water by liquid fuel or other materials during construction period;
- Choice of routes for new roads or access parts so as to not affect flora and fauna species and aquatic ecosystems;
- Choice of low emission transportation solutions.

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<sup>1</sup> All measures of prevention and reduction of any possible adverse impact will be realized in compliance with specific environmental legislation as well as with relevant legislation related to the use of EU funds, including, but not limited to, those regarding sustainable development and public procurement.

For the implementation of the thematic objectives of the Romania-Ukraine Programme the relevant Directives, Decisions and EU Regulations regarding air quality, surface and phreatic waters, soil and subsoil, climatic change, waste management, population health, biodiversity, cultural heritage preservation, efficient use of resources and/or of the national legislation (of Romania/Ukraine) if those are more restrictive.

Investment projects that will be financed within the indicative activities of the programme should consider the following measures recommended for the reduction of the impact on the environment:

- Obtaining the agreements/statements/authorisations necessary for the construction and functioning, according to the national legislation in force, from the relevant authorities;
- In the case of projects relating to water resources, obtaining the relevant agreements according to national legislation in force ( for Romania- agreement from the National Administration of Romanian Waters, or of the relevant Basin Administration from the area of the projects) and in the case of cross border waters also from the authorities in Romania/Ukraine (in accordance with the Agreement between the Government of Romania and the Government of Ukraine regarding cooperation in the area of cross border water management, Galati 1997)
- Obligation of conducting the biodiversity assessment of the potential effects on the natural protected areas of community interest for the projects that take place in natural protected areas, in accordance with national legal provisions in force which implement art 6.3 from the Habitat Directive
- the requirements of the Framework Convention of the United Nations regarding climatic change and of the Kyoto Protocol and of the european/national policies and strategies regarding adaptation and reduction of the effects of climate change;
- the principles and directions regarding waste management from SNGD, PNGD, PRGD

For those indicative actions with impact on the environment have been proposed measures to prevent and reduce any likely impact:

Ro-Ua Programme Indicative activities	Measures to prevent and reduce the impact
<b>OT2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT &amp; INNOVATION</b>	
<b>Objective 1:</b> <i>Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level</i>	
<i>Priority1.1 Institutional cooperation in the educational field for increasing access to education and quality of education</i>	
Rehabilitation/modernization/ extension/ equipment procurement for the educational infrastructure to provide the necessary material preconditions of a quality educational process and increase the	- Reducing consumption of electricity and/or heat

<p>participation in the educational processes</p>	<ul style="list-style-type: none"> <li>- Reducing consumption of fuel, raw material, hazardous substances;</li> <li>- Energy efficient equipments;</li> <li>- Reducing waste;</li> <li>- Collection/ sorting/ recycling/ recovery of waste</li> </ul>
<p><i>Priority 1.2 Promotion and support to research and innovation</i></p>	
<p>Promotion and support for research and innovation through rehabilitation/ modernization/extension of the specific infrastructure including the procurement of related equipment</p>	<ul style="list-style-type: none"> <li>- Reducing consumption of electricity and heat</li> <li>- Reducing consumption of fuel, raw material, hazardous substances;</li> <li>- Energy efficient equipments;</li> </ul>
<p><b>OT3 PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE</b></p>	
<p><b>Objective 2:</b> : <i>Preservation of the cultural and historical heritage in the eligible area, support the development of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.</i> <b>Priority 2.1 Preservation and promotion of the cultural and historical heritage Indicative activities</b></p>	
<p>Restoration, conservation, consolidation, protection, security of cultural and historical monuments, archaeological sites (including the corresponding access roads), museums, objects and art collections and their joint promotion based on relevant cross-border strategies/ concepts</p>	<ul style="list-style-type: none"> <li>- Accuracy in respecting restoration, conservation technologies,;</li> <li>- Choosing solutions that do not affect species of flora, fauna and aquatic ecosystems in the area.</li> </ul>
<p>Preservation, security, and joint valorisation of cultural and historical monuments and objects</p>	<ul style="list-style-type: none"> <li>- Choosing appropriate conservation technologies;</li> <li>- Choosing solutions that do not affect species of flora, fauna and aquatic ecosystems in the area.</li> <li>- Preservation and conservation of protected species and habitats</li> </ul>
<p><b>OT7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS</b></p>	
<p><b>Objective 3:</b> : <i>Improve public transport services, infrastructure and ITC cooperation and networking</i> <b>Priority 3.1 Development of cross border transport infrastructure and ICT tools</b></p>	
<p>Reconstruction, rehabilitation, modernization of cross-border transport systems</p>	<ul style="list-style-type: none"> <li>- use of technologies with low emissions of particulate matter</li> <li>- Choice of technologies for construction/ rehabilitation/ widening roads with reduced emissions of particulate matter</li> <li>- Choosing solutions that do not affect species of flora, fauna and aquatic ecosystems in the area.</li> <li>- Preservation and conservation of protected species and habitats</li> </ul>

Development of environmentally friendly (carbon-proofed) cross-border transport initiatives and innovative solutions	- Eco-friendly transport (electric, hydrogen, etc.)
Improvements of multimode transport (road/water) facilities of cross-border interest	- Zero emission transport with minimal effect on soil, water, fauna and flora -
Reconstruction, rehabilitation, widening of cross-border (segments of) roads connecting settlements alongside the border with main road, which leads to the border	- use of technologies with low emissions of particulate matter Solutions for infrastructure construction so as to avoid contamination of soil and water by liquid fuel or other materials during construction period; - Choice of routes for new roads or access parts so as to not affect flora and fauna species and aquatic ecosystems; - Preservation and conservation of protected species and habitats
Improvement/restoration/construction of (segments of) access roads to centres of cross-border interest	- use of technologies with low emissions of particulate matter - Solutions for infrastructure construction so as to avoid contamination of soil and water by liquid fuel or other materials during construction period; - Choice of routes for new roads or access parts so as to not affect flora and fauna species and aquatic ecosystems; - Preservation and conservation of protected species and habitats -
<b>OT8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY</b>	
<b>Objective 4:</b> <i>Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects</i>	
<i>Priority 4.1 Support to the development of health services and access to health</i>	
Joint activities meant to enhance the access to health in the border area through construction / rehabilitation / modernization of infrastructure of public health services (including through the use of renewable energy etc.)	- Reducing consumption of electricity and heat - Reduce fuel, raw materials and hazardous substances consumption; - Energy efficient equipments; - Reducing waste; - collection/ sorting/ recycling/

	recovery of waste
Developing labs and mobile labs for screening / clinical monitoring of diseases and prevention of cross border epidemics	- Energy efficient equipments
Equipping specific public medical service infrastructure (outpatient, emergency room facilities, medical centres, integrated social intervention, etc.)	- Energy efficient equipments
<i>Priority 4.2 Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations</i>	
Common measures for preventing land slide and flooding of the cross border areas	- Choosing green solutions, with minimal impact on the area; - - Minimizing waste - Preservation and conservation of protected species and habitats and aquatic ecosystems -
Joint integrated systems for efficient monitoring and disaster prevention and for the mitigation of consequences	- Choosing green solutions, with minimal impact on the area; - Preservation and conservation of protected species and habitats and aquatic ecosystems
Elaborating of joint detailed maps and databases (indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services)	Taking into account the most advanced technologies appropriate to specific situations (aerospace, radar interferometry, etc.)
Investments and development of common, integrated, emergency management systems	- Reducing consumption of electricity and/or heat - Reducing consumption of fuel, raw material, hazardous substances; - Energy efficient equipments; - Reducing waste; - collection/ sorting/ recycling/ recovery of waste - Preservation and conservation of protected species and habitats and aquatic ecosystems
<i>Priority 4.3 Prevention and fight against organised crime and police cooperation</i>	
Investment in construction, renovation or upgrading of police and border crossing infrastructure and related buildings	- Reducing consumption of electricity and/or heat - Reducing consumption of fuel, raw material, hazardous substances; - Energy efficient equipments; - Reducing waste; - collection/ sorting/ recycling/ recovery of waste
Investments in operating equipment and facilities specific for the activity of police/customs/border police/gendarmerie (e.g.	- Reducing consumption of electricity and/or heat

laboratories, equipment, detection tools, hardware and software, means of transport)	<ul style="list-style-type: none"> <li>- Reducing consumption of fuel, raw material, hazardous substances;</li> <li>- Energy efficient equipments</li> </ul>
<b>LARGE INFRASTRUCTURE PROJECTS</b>	
«Clean river» Dunărea	<ul style="list-style-type: none"> <li>- The use of rehabilitative technologies with minimal impact on soil and flora, fauna and aquatic ecosystems</li> </ul>
Improving the cross-border infrastructure – opening the gate to Europe	<ul style="list-style-type: none"> <li>- Reducing consumption of electricity and/or heat</li> <li>- Reducing consumption of fuel, raw material, hazardous substances;</li> <li>- Energy efficient equipments;</li> <li>- Reducing waste;</li> <li>- collection/ sorting/ recycling/ recovery of waste</li> </ul>
Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine	<ul style="list-style-type: none"> <li>- Reducing consumption of electricity and/or heat</li> <li>- Reducing consumption of fuel, raw material, hazardous substances;</li> <li>- Energy efficient equipments;</li> <li>- Reducing waste;</li> <li>- collection/ sorting/ recycling/ recovery of waste</li> </ul>
Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management	<ul style="list-style-type: none"> <li>- Reducing consumption of electricity and/or heat</li> <li>- Reducing consumption of fuel, raw material, hazardous substances;</li> <li>- Energy efficient equipments;</li> <li>- .</li> </ul>

The following observations were made in the framework of the SEA procedure so as to minimize the impact of certain activities on the environment:

Relevant authority	Comment/recommendation
<b>Ministry of Culture of Romania</b>	To introduce „archaeological sites” in the indicative activity with possible impact on the environment under Priority 2.1

## 9. THE REASONS FOR SELECTING THE ALTERNATIVES DEALT WITH, AND A DESCRIPTION OF HOW THE ASSESSMENT WAS UNDERTAKEN INCLUDING ANY DIFFICULTIES (SUCH AS TECHNICAL DEFICIENCIES OR LACK OF KNOW-HOW) ENCOUNTERED IN COMPILING THE REQUIRED INFORMATION

### 9.1 Selection of the Programme Ro-Ua alternatives

The alternatives analysed for the Joint Operational Programme Romania – Ukraine for period 2014 ÷ 2020 are presented below:

**Alternative 0:** The Programme is not implemented;

**Alternative 1:** Implementation of the Ro-Ua Programme 2014 ÷ 2020 with the following thematic objectives:

#### TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT & INNOVATION

*Objective 1: Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level*

##### Priority 1.1 – Institutional cooperation in the educational field for increasing access to education and quality of education

###### **Justification:**

The development of the education sector is strongly supported as a key area for intervention in the programme area. The main issues of the area in regards to education are related to early school leaving, poor accessibility to the educational infrastructure in rural areas, support for disadvantaged groups as well as low investments in educational infrastructure and trainings for teachers.

##### Priority 1.2 – Promotion and support to research and innovation

###### **Justification:**

One of the underdeveloped fields in the programme area is research and development (R&D). The level of investment in this field is very low, although there is potential for its growth. There are a number of urban centres where R&D activities are carried out that can be correlated with the level of the expenditures in R&D, the number of employees in the field, and the localization and number of tertiary level educational institutions, e.g. Odessa, Chernivtsi, Tulcea, Suceava. Building on existing centres and the general economic profile of the core eligible area there is a strong opportunity for positive outcomes for R&D that can be further enhanced through joint cross border activities.

#### TO 3. PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE

*Objective 2: Preservation of the cultural and historical heritage in the eligible area, support the developing of local culture, specific cultural identities and the cultural dialog contributing to*

*an enhanced attractiveness of the eligible area.*

## **Priority 2.1 – Preservation and promotion of the cultural and historical heritage**

### ***Justification:***

The two sub-national eligible areas share commonalities in terms of cultural heritage due to historic evolution and have a long-standing tradition in multi-ethnic cohabitation and multiculturalism. Despite the fact that there is a high concentration of natural and historical sites and natural protected areas, the eligible area registered low level of investments in touristic and cultural facilities.

The cultural infrastructure is developed but poorly financially supported. It includes museums, libraries, theatres and other cultural institutions. This priority aims to facilitate investments in historical heritage and local culture through joint projects and to improve the touristic potential of the cross border area.

## **TO7. IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS**

***Objective 3:*** *Improve public transport services, infrastructure and ITC cooperation and networking*

## **Priority 3.1 –Development of cross border transport infrastructure and ICT tools**

### ***Justification:***

Transport in the core eligible area is dominated by road and rail. However, regardless of the high density of road and rail networks, their viability is reduced by the poor quality and maintenance of these networks, the lack of modernization projects and of resources. This situation increases travel times significantly and impacts on the transport costs.

Technical differences in terms of rail transport between the two countries (i.e. use of different rail gauge) and limited multi-modal transport capabilities makes cross-border transportation more difficult. However, the eligible area presents high potential for river transport development that should be acknowledged and acted upon.

Access levels to broadband Internet and communications infrastructure is low,, especially in the rural areas.

## **TO 8. Common challenges in the field of safety and security**

***Objective 4:*** *Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects*

## **Priority 4.1 - Support to the development of health services and access to health**

### ***Justification:***

The public health system in the programme area faces a number of limitations generated by the low quality of the infrastructure, the accessibility to health services and the lack of access of physicians to trainings and specializations. These limitations are responsible

for the low life expectancy at birth in the eligible area, the low number of physicians and the high number of illnesses. A system of joint investments in public health infrastructure and equipment as well as related professional trainings and exchanges of experience would contribute to improving the response of the health local system to the real need of the area and generate significant cross border impact and added value.

#### **Priority 4.2 – Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations**

##### ***Justification:***

The eligible area presents high risk of pollution through industrial accidents, especially in the Danube and Black Sea area. Also, there is a high risk of natural disasters as a result of the topography and the dense hydrographical network (e.g. flooding, landslides) – mountain areas in the North, delta area in South. These characteristics of the programme area require joint actions involving organizations from both sides of the border in order to prevent and improve the response to emergency situations. This priority aims to address common challenges such as landslide, flooding, risk prevention, emergency situation, through joint planning and coordinated interventions.

#### **Priority 4.3 Prevention and fight against organised crime and police cooperation**

##### ***Justification:***

The region faces challenges in terms of criminality rates and additional risks due to the status of the border and the ramifications of illegal smuggling. In order to reduce criminality rates, improve the intervention capacity of police forces and ensure the security of the people on both sides of the border this priority will foster investments in capacity building, infrastructure and equipment for the structures involved in the customs and police services.

The selection of alternative 1 of the Programme was done so as to ensure that the indicative activities will generate a minimum impact on biodiversity.

## **9.2 Difficulties**

There were difficulties in identifying the environmental legislation in force in Ukraine and finding informations about the quality of environmental aspects and biodiversity. Some data at the level of years 2011 and 2012 were found on the following websites:

- <http://eng.menr.gov.ua/index.php/normbaza>
- [http://www.kmu.gov.ua/control/en/publish/article?art\\_id=91651](http://www.kmu.gov.ua/control/en/publish/article?art_id=91651)
- <http://ypef.eu/files/booklet/ang/ukraine.pdf>

- <http://www.brucebyersconsulting.com/wp-content/uploads/2011/07/Ukraine-Biodiversity-Analysis-Report-1-2011.pdf>
- [http://en.wikipedia.org/wiki/Ukrainian\\_Cultural\\_Heritage\\_Village](http://en.wikipedia.org/wiki/Ukrainian_Cultural_Heritage_Village)
- <http://whc.unesco.org/en/statesparties/ua>
- <http://www.history.alberta.ca/ukrainianvillage/>
- <http://culture.pl/en/article/polish-and-ukrainian-tserkvas-make-unesco-list>

No other significant difficulties were encountered in drafting the Environmental Report for SEA regarding the Joint Operational Programme Romania - Ukraine for 2014 ÷ 2020.

## 10. DESCRIPTION OF THE MEASURES ENVISAGED CONCERNING MONITORING IN ACCORDANCE WITH ARTICLE 10

The Projects financed by the Programme Ro-Ua will meet the european environmental legislation in force and the national legislation.

According to the article 10 of SEA Directive, the monitoring of the significant environmental effects of Programme has to be done in order to identify early any adverse effects and to be able to take the proper corrective measures.

The monitoring system will be proposed based on the environmental issues that may be substantially affected by the implementation of CBC Programme Ro-Ua.

For the monitoring of the Programme impact on the environment the following principles should be taken into consideration:

- Contribution to energy efficiency, the reduced usage of raw materials or hazardous substances;
- Contribution to the development of green infrastructure, including management of protected areas
- Contribution to the surface/ ground water proper management
- Contribution to an adequate management of the use of ground and underground waters
- Contribution to sustainable mobility and multimodal transport;
- Contribution to an effective waste management, recycling and reusage;
- Contribution to risk prevention/natural disasters and climate change mitigation;
- Application of the principle of green public procurement.

The Programme environmental impact monitoring rated the degree to which the proposed programme indicators are suitable for monitoring environmental impact and recommendations have been made for their adaptation:

Thematic objectives	Priority	Assessment indicators	Recommendations
<b>TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT &amp; INNOVATION</b> <b>Objective 1:</b>	P1.1 Institutional cooperation in the educational field for increasing access to education and quality of education	In order to see the effects on the environment of the proposed indicative actions it is necessary to include an additional indicator for the Programme " <i>Number of educational institutions rehabilitated / modernized</i> ". It can be determined without difficulty together with the proposed indicator for the Programme	Rehabilitation/modernization/ extension/ equipment procurement for the educational infrastructure will fullfill all the environmental requirement and will be in line with best environmental practices like energy efficiency, waste management

<p><i>Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level</i></p>	<p>P1.2 Promotion and support to research and innovation</p>	<p>The proposed monitoring indicator for the Programme "Number of institution using Programme funds for cooperation in R &amp; D and innovation " <i>can reflect also the impact on the environment</i>"</p>	<p>Rehabilitation/modernization/ extension/ equipment procurement for the research and innovation infrastructure will fullfill all the environmental requirement and will be in line with best environmental practices like energy efficiency, waste management</p>
<p><b>TO3 - PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE</b>  <b>Objective 2:</b> <i>Preservation of the cultural and historical heritage in the eligible area, support the developing of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.</i></p>	<p>P 2.1 Preservation and promotion of the cultural and historical heritage</p>	<p>The proposed monitoring indicator for the Programme "<i>Number of historical and cultural monuments using Programme funds</i>" can reflect also the effects on cultural and historical heritage of the implementation of the projects financed under the indicative actions of this priority</p>	<p>The technologies used for restoration, conservation and consolidation of cultural and historical monuments should be chosen so that their impact on environmental aspects to be minimized. Choosing and applying the proper restoration, conservation and consolidation technologies so as to avoid the impact on flora and fauna species and on aquatic ecosystems in the eligible area</p> <p>For ensuring security and valorization of monuments and cultural and historical objects energy efficient solutions should be taken into account and also the use of an integrated waste management if the case</p>
<p><b>TO7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS</b>  <b>Objective 3:</b> <i>Improve public transport services, infrastructure and ITC cooperation and networking</i></p>	<p>P 3.1 Development of cross border transport infrastructure and ICT tools</p>	<p>Monitoring priorities effects revealed the need for an additional indicator for the program: " <i>Number of environmentally friendly (carbon-proofed) cross-border transport initiatives developed</i> " that clearly reflect how indicative activities will support reducing the environmental impact of transport. The second indicator proposed by the Programme, namely "<i>The total length of roads rebuilt and rehabilitated</i>" can also reflect the positive impact on the environment of the implementation of such indicative actions The action on facilitating multimodal transport should be reflected in the indicators. We recommend rewording the</p>	<p>Construction, rehabilitation, modernization, enhancement of cross-border transport infrastructure will have to undergo the EIA / SEA procedure (where required by the legislation) and where appropriate through a proper evaluation to see the impact on the Natura 2000 network. Transboundary consultations under the Espoo Convention should be considered when transboundary impacts occur. Choosing construction/ rehabilitation/ widening roads technologies with low emissions of particulate matter , avoiding contamination of soil and water by liquid fuel or other construction materials during execution period. Choosing routes that do not affect species of flora, fauna and aquatic ecosystems.</p>

		indicator on the number of joint strategies to reflect and multimodal transport	
<b>TO8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY</b> <b>Objective 4:</b> <i>Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects</i>	P 4.1 Support to the development of health services and access to health	The proposed monitoring indicators for the Programme “ <i>Number of medical service infrastructure units improved</i> ” and “ <i>Population covered by improved health services as a direct consequence of programme support</i> ” will reflect the impact on the population and public health of the indicative actions	Developing health facilities or improving them will consider all environmental legislative requirements regarding air, water and soil quality, including waste management principles. It will consider the impact on biodiversity when appropriate.
	P 4.2 Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations	The indicator “ <i>Number of population affected by the implementation of measures</i> ” initially proposed for the monitoring of these activities coincided with one of the Program indicators “ <i>Population benefiting from flood protection measures</i> ” and will reflect the positive environmental impact. We recommend that the second proposed indicator for the Programme “ <i>Number of joint actions (exchanges, training, study visits, joint planning session, etc.)</i> ” to be modified to reflect also the LIP “ <i>Clean River</i> ” and to add to the number of common action or to the report on monitoring indicators “ <i>new maps made or updated databases created, systems / structures made, equipment purchased</i> ” in order to monitor the impact of all indicative actions of this priority. An additional indicator was proposed for the monitoring of the environment: <i>Land surface affected by the implementation of the measures</i> <sup>2</sup>	The solutions chosen for disaster prevention should be designed so as not to affect the flora, fauna and aquatic ecosystems in these areas. The development of infrastructure for monitoring and intervention in case of emergency (eg buildings) should be in line with all applicable environmental requirements and apply the best environmental practices for ensuring the quality of air, water and soil and waste management.
	P 4.3 Prevention and fight against organised crime and police cooperation	The indicator proposed by the Program “ <i>Number of police units, border police, customs services in the eligible area upgraded</i> ”, can monitor positive environmental impact	Construction, renovation or modernization of police / customs / border police / gendarmerie should consider all environmental legislative requirements regarding quality assurance of air, water and soil, including waste management principles.
<b>LARGE</b>	«Clean river»	The two indicators proposed	

<sup>2</sup> Specific environment indicator

<b>INFRASTRUCTURE PROJECTS</b>	Dunărea (OT8) 4.2	by the Program " <i>Population benefiting from flood protection measures</i> " and " <i>Number of joint actions, including soft operations, as well as joint infrastructure investments in the field of emergency situations and the prevention of man-made disasters</i> " reflect the positive environmental impact due to measures of rehabilitation / modernization of wastewater pumping stations and the monitoring and quality control of the Danube	Realization of large infrastructure projects will have to undergo the procedure EIA / SEA and where appropriate through a biodiversity assessment to see the impact on flora, fauna and aquatic ecosystems. Transboundary consultations must be considered under the Espoo Convention, where transboundary impacts occur
	Improving the cross-border infrastructure – opening the gate to Europe (OT7) 3.1	The indicator proposed for the Program " <i>Total length of reconstructed or upgraded roads</i> " may reflect the positive environmental impact due to the rehabilitation of the existing road between Kranoiisk - Upper Vicovu	
	Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine (OT 8) 4.3	Indicator proposed in Program " <i>Number of modernized facilities of police, police border and custom services from the eligible area</i> " may reflect the positive environmental impact due to strengthening / modernization / extension of police premises	
	Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management (OT) 4.1	One of the two indicators proposed in program namely " <i>Number of medical service infrastructure units improved</i> " may reflect the positive impact on the population and public health	

The table below summarizes the monitoring indicators recommended for the indicative activities of the Programme under which there is a possibility to finance projects having an impact on the environment. Part of these indicators are the same as those monitoring the implementation of the programme as they can also monitor impact on the environment. For certain indicative activities under P1.1, P3.1, P4.2 and LIPs specific environmental indicators

were suggested or the programme indicators were modified as to reflect also the impact on the environment.

INDICATIVE ACTIVITIES of the Programme Ro-Ua	Proposed monitoring indicators
<b>TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT &amp; INNOVATION</b>	
<b>Objective 1:</b> <i>Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level</i>	
<i>Priority 1.1 Institutional cooperation in the educational field for increasing access to education and quality of education</i>	
Rehabilitation/modernization/ extension/ equipment procurement for the educational infrastructure to provide the necessary material preconditions of a quality educational process and increase the participation in the educational processes	Number of educational institutions rehabilitated/ modernized
<i>Priority 1.2 Promotion and support to research and innovation</i>	
Promotion and support for research and innovation through rehabilitation/ modernization/ extension of the specific infrastructure including the procurement of related equipment.	Number of institutions using funds from the Program for cooperation in R&D and innovation
<b>TO3 - PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE</b>	
<b>Objective 2:</b> <i>Preservation of the cultural and historical heritage in the eligible area, support the developing of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.</i>	
<i>Priority 2.1 Preservation and promotion of the cultural and historical heritage</i>	
Restoration, conservation, consolidation, protection, security of cultural and historical monuments, archaeological sites (including the corresponding access roads), museums, objects and art collections and their joint promotion based on relevant cross-border strategies/concepts	Number of rehabilitated / modernized educational institutions
Preservation, security, and joint valorisation of cultural and historical monuments and objects	Number of rehabilitated / modernized educational institutions
<b>TO7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS</b>	
<b>Objective 3:</b> <i>Improve public transport services, infrastructure and ITC cooperation and networking</i>	
<i>Priority 3.1 Development of cross border transport infrastructure and ICT tools</i>	
Reconstruction, rehabilitation, modernization of cross-border transport systems	Total length of reconstructed or upgraded roads
Development of environmentally friendly cross-border transport initiatives and innovative solutions	Number of environmentally friendly (carbon-proofed) cross-border transport initiatives developed
Improvements of multimode transport (road/water) facilities of cross-border interest	Number of joint mechanisms to support improvement of cross-border infrastructure (joint planning documents, including: strategies, plans, action plans; multi-modal facilitation mechanisms) developed
Reconstruction, rehabilitation, widening of cross-border (segments of) roads connecting settlements alongside the border with main road, which leads to the border	Total length of reconstructed or upgraded roads
Improvement/restoration/construction of (segments of) access roads to centres of cross-border interest	Total length of reconstructed or upgraded roads

<b>INDICATIVE ACTIVITIES of the Programme Ro-Ua</b>	<b>Proposed monitoring indicators</b>
<b>TO8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY</b>	
<b>Objective 4:</b> Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects	
<i>Priority 4.1 Support to the development of health services and access to health</i>	
Joint activities meant to enhance the access to health in the border area through construction / rehabilitation / modernization of infrastructure of public health services (including through the use of renewable energy etc.)	The population covered by improved health services, as a direct result of the Program support
Developing labs and mobile labs for screening / clinical monitoring of diseases and prevention of cross border epidemics	Number of medical service infrastructure units improved
Equipping specific public medical service infrastructure (outpatient, emergency room facilities, medical centres, integrated social intervention, etc.)	The population covered by improved health services, as a direct result of the Program support The population covered by improved health services, as a direct result of the Program support
<i>Priority 4.2 Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations</i>	
Common measures for preventing land slide and flooding of the cross border areas	Population benefiting from flood protection measures Land surface affected by the implementation of the measures <sup>3</sup>
Joint integrated systems for efficient monitoring and disaster prevention and for the mitigation of consequences	Number of joint actions, including soft operations as well as joint infrastructure investments in the field of emergency situations and the prevention of man-made disasters.
Elaborating of joint detailed maps and databases (indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services)	
Investments and development of common, integrated, emergency management systems	
<i>Priority 4.3 Prevention and fight against organised crime and police cooperation</i>	
Investment in construction, renovation or upgrading of police and border crossing infrastructure and related buildings	Number of modernized facilities of police, police border and custom services from the eligible area
Investments in operating equipment and facilities specific for the activity of police/customs/border police/gendarmerie (e.g. laboratories, equipment, detection tools, hardware and software, means of transport)	
<b>Large infrastructure projects</b>	
«Clean river» Dunărea	Population benefiting from flood protection measures Number of joint actions, including soft operations, as well as joint infrastructure investments in the field of emergency situations and the prevention of man-made disasters.
Improving the cross-border infrastructure – opening the gate to Europe	Total length of reconstructed or upgraded roads

<sup>3</sup> Specific environment indicator

INDICATIVE ACTIVITIES of the Programme Ro-Ua	Proposed monitoring indicators
Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine	Number of modernized facilities of police, police border and custom services from the eligible area
Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management.	Number of joint actions, including soft operations, as well as joint infrastructure investments in the field of emergency situations and the prevention of man-made disasters.

The monitoring indicators will be used for assessment of effects on environment for each project financed from the Programme. This data will be provided by the project beneficiaries through the monitoring of activities and will be collected annually in order to be able to include them in the Annual Implementing Report of the Programme submitted to the JMC. Authorities proposed to be involved in the monitoring of the effects on the environment are: project beneficiaries, JMC, MA (MRDPA).

## 11 NON-TECHNICAL SUMMARY

The Strategic Environmental Assessment is carried out based on the requirements of the SEA Directive (European Council Directive no. 2001/42/EC on the assessment of effects of certain plans and programmes on the environment) in Romania and of the SEA Protocol in Ukraine, if there are no other specific rules.

The main elements recommended to be followed by law or implementation guidelines in such environmental assessment are:

- description of key aspects of the environment that need to be addressed;
- description of reference range values for environment, to be submitted for analysis in the SEA report;
- ways for identifying the impact of the plan / programme on the environment;
- evaluation of the capacities to address the challenges, risks and prevention.

The methodology used in the strategic environmental assessment includes the requirements of the above-mentioned documents and of the following methodological recommendation: "*Guidance Note on Strategic Environment Assessment in the context of ENI CBC*" developed by INTERACT ENPI for the specific situation of Joint Operational Programmes and approved by the Directorate General for Development and Cooperation - Europe Aid (DG DEVCO) and the Directorate General for Environment (DG ENV).

Considering the extent to which the Joint Operational *Programme "Romania - Ukraine" 2014 ÷ 2020* provides a framework for future projects and other activities, development of its first version will be notified to the environmental competent authorities, for estimation of its impact on environmental factors. In this procedure it is necessary **to finalize the Programme in parallel with developing Environmental Report.**

**The environmental report**, is a part of the Programme documentation that identifies, describes and evaluates potential significant effects on environment and rational alternatives, considering the objectives and related geographical area.

The development of the Strategic Environmental Assessment procedure is mandatory, the European Commission requiring the related opinions on environmental assessment, for the approval of the Programme "*Romania - Ukraine*" 2014 ÷ 2020 under national and European legislation in force.

In accordance with the SEA Directive (2001/42/EC), environmental assessment involves the following steps:

- Identification of environmental authorities of all countries concerned (Romania, Ukraine);
- The decision on whether SEA is required or not,

and if yes:

- Determining the SEA scope and development of the Environmental Report;
- Consultation of environmental authorities and the public;
- Inclusion of findings and results of consultations in the Environmental Report;
- Adequate monitoring of recommendations;
- Notification of the authorities consulted and public on the programme approval.

***Environmental assessment is mandatory*** when programmes include projects covered by the EIA Directive in the sectors covered by Article 3.2 (energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning, land use, etc) and projects with significant environmental impact in other sectors, under Article 3.4.

**ENI CBC Programmes with Large Infrastructure Projects should perform a SEA procedure.**

In the period 2014 ÷ 2020, the European Union will finance through the European Neighbourhood Instrument (ENI), the bilateral cross-border cooperation programme (CBC) between Romania - Ukraine, as a continuation of the Joint Operational Programme "Romania – Ukraine - Republic of Moldova 2007÷2013".

Regulation no. 232/2014 establishing a European Neighbourhood Instrument (ENI) and Regulation no 897/2014 laying down specific provisions for the implementation of cross-border cooperation programmes, say that the programme partners have to cooperate in order to identify the needs of the programme area and select those thematic objectives and priorities, that are most relevant to the border region.

Within this context, the partner countries nominated the Ministry of Regional Development and Public Administration from Romania as Managing Authority and created the Joint Programming Committee (JPC) as decisional body for the programming process. Additionally, two working groups were created, one for the identification of Large Infrastructure Projects and one for the Management and Control structures.

The Joint Programming Committee approved 4 thematic objectives (TO) for the Romania-Ukraine Programme 2014-2020, together with their subsequent priorities as follows:

***TO2 - Support to education, research, technological development and innovation:***

**Objective 1:** Develop education and support research and innovation by facilitating the cooperation at local, regional and central levels:

- *Priority 1.1* - Institutional cooperation in the educational field for increasing access to education and quality of education;
- *Priority 1.2* - Promotion and support to research and innovation.

• **TO 3 - Promotion of the local culture and preservation of historical heritage**

**Objective 2:** Preservation of the cultural and historical heritage in the eligible area, support the development of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area

- *Priority 2.1* – Preservation and promotion of the cultural and historical heritage **TO 7 - Improvement of accessibility to the regions, development of transport and common networks and systems:**

**Objective 3:** Improve public transport services, infrastructure and ICT cooperation and networking

- *Priority 3.1* - Development of cross border transport infrastructure and ICT tools

• **TO 8 - Common challenges in the field of safety and security**

**Objective 4:** Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects

- *Priority 4.1* - Support to the development of health services and access to health;
- *Priority 4.2* – Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations;
- *Priority 4.3* - Prevention and fight against organized crime and police cooperation

• **Large Infrastructure Projects (indicative as they are not yet approved by the JPC)**

- «Clean river» Dunărea
- Improving the cross-border infrastructure – opening the gate to Europe
- Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine
- Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management.

The Joint Operational Programme Romania - Ukraine 2014 ÷ 2020 will cover the following area, established by ENI CBC:

**Romania: 5 counties:** Satu Mare, Maramureș, Botoșani, Suceava, Tulcea;

**Ukraine: 4 oblasts:** Ivano-Frankivsk, Zakarpatska, Chernivtsi, Odessa.

In terms of proportionality, the Ukrainian eligible area is more than double in size compared to the Romanian territory.

According with Regulation EU no. 232/2014, art. 8(3) establishing ENI, two major social, economic and cultural centers were included in the programme: Bucharest and Kiev.

According with Regulation 897/2014, article 39, para. 2, point b and article 45, para. 4, the partner countries decided to allow a flexibility rule of maximum 10% of the Programme allocation to be used by the beneficiaries located outside the Programme area and/or for activities outside the Programme area, under specific conditions outlined in the program.

The core eligible area of the Programme has some ecological problems, as a result of the aggressive industrialised process before 1989, but within the limits of international pollution. The major problems come from four main sources:

- The industrial emissions and the waste resulted from operating and closing of the industrial platforms, that have a negative impact on air, soil and waters;
- Limited waste management, especially in the rural zones; having a direct effect on the environment, considering that there are no adequate facilities for waste treatment in these areas;
- The usage of the chemical fertilizers and improper disposal of agricultural waste, with direct impact on soil and on water quality;
- The urban centres are the main generators of greenhouses gas (CO<sub>2</sub>) and have a significant impact on air quality and generally on environment, too.

There are now in the Program area more than 1000 national and international protected areas and many historical sites.

Generally the ecological status of the eligible areas both from Romania and Ukraine will not be directly influenced if the projects financed under the Ro-Ua Programme will not be implemented,

The Projects that can be financed under thematic objectives TO2 and TO3 are generally soft projects more focused on concept and exchange of experience related to education, research & development and innovation or rehabilitation and promotion of the historical heritage, and can have only an indirect impact on environment.

Instead, the Projects that can be financed under TO7 and TO8 would have beneficial effect on environment through the development of an infrastructure at the border with a significant positive impact compared with the present situation and through prevention of the landslides and flooding with a positive impact, too.

If the Programme Ro-Ua is not implemented, the current status of the environment in the eligible area would stay unchanged and in time will be damaged, affecting almost all the environment factors: air, water, soil, biodiversity, waste management, archaeological an architectural and landscape.

The environmental protection objectives, established at international, community or member state level, which are relevant to the programme and which have been taken into account during Program preparation are included in the following documents:

**Romania:**

- The Partnership Agreement with EU
- National Reform Program for Romania (NRP)
- National Strategy for Climate Change 2013 ÷ 2020

- National Strategy for Risk management at medium and long term flood (period 2010 ÷ 2035)
- Waste management (National Strategy, National/Regional Plan for waste management )
- North-East Regional Development Plan 2014 - 2020
- South-East Regional Development Plan 2014 - 2020

**Ukraine:**

- State Strategy of Regional Development for the period until 2020

**EU:**

- Europe 2020
- Danube Strategy
- Eastern Partnership

The implementation of the Programme Ro-Ua thematic objectives should take into consideration the EU Directives, Decisions and Regulations on air quality, surface water and groundwater, soil and subsoil, climate change, health, biodiversity, conservation, resource efficiency or the national legislation in force (Romania or Ukraine) if this is more restrictive.

The development of indicative actions of the program will consider the necessary measures for the fulfilment of the requirements of United Nations Framework Convention on Climate Change and Kyoto Protocol. Also, any national/ european policy or strategy related adaptation and mitigation of the climate change will be considered.

The potential contribution of individual activity proposed for each priority of thematic objectives of Programme Ro-Ua is assessed by result effects, considering the objectives and relevant environmental policies at national, European and international level.

The impact of the eligible activities financed by the Program is analysed for each of the following relevant aspects that characterised the environment:

- Air;
- Surface and underground waters;
- Soil , subsoil land andscape;
- Climate changes;
- Population and public health;
- Biodiversity, flora and fauna;
- Waste management;
- Cultural heritage;
- Resources efficiency, including renewable sources;

A scoring approach, as presented in the following is used for the environment assessment of the Program Ro- Ua activities.

Symbol	Semnification	Definition
++	Significant Positive Impact	Highly positive benefit for the environment which is of considerable importance in terms of its overall policy implication

<b>+</b>	Positive Impact	Positive effect on the environment which is not considered to be significant
<b>0</b>	Neutral	No effect envisaged
<b>-</b>	Negative Impact	Negative impact on the environment which is not considered to be significant
<b>--</b>	Significant Negative Impact	Highly adverse impacts on aspects of the environment which seriously demand to be addressed through revision of current stated policy
<b>?</b>	Uncertainty	Effect could not be determined due to lack of data or information

At this level of detail of the programme a global methodology was used, trying to highlight the possible effects of the indicative activities on the environmental aspects. The accuracy of the implementation of the methodology depends to a high degree on the type of projects that will be financed.

The possible significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape are presented below for each indicative activities of the four thematic objectives.

**TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT & INNOVATION**

**Objective 1:** *Develop education and support research and innovation by facilitating the cooperation at local, regional and central level*

**Priority 1.1 – Institutional cooperation in the educational field for increasing access to education and quality of education**

No.	Indicative activities	Environmental aspects and objectives considered	Potential impact	Environmental assessment
1.	Joint planning and joint development of educational strategies;	Is not the case	Indirect	Neutral
2.	Exchanges of experience, teacher exchanges, transfer of good practices between institutions from both sides of the border for increasing the effectiveness of education through the diversification of professional training programs for employees in the education system in areas such as:			Neutral
	- School development, school management, developing the relation between schools and communities;	Is not the case	Indirect	Neutral
	- Developing and applying innovative educational methods, for increasing teaching skills to facilitate and motivate students to perform;	Is not the case	Indirect	Neutral
3.	Developing specific joint programs of entrepreneurship education, programmes that stimulate creativity, innovation and active citizenship;	Is not the case	Indirect	Neutral
4.	Rehabilitation/modernization/extension/ equipment procurement for	Efficiency Waste	Positive Reduced	Neutral

	the educational infrastructure to provide the necessary material preconditions of a quality educational process and increase the participation in the educational processes;	management	consumption of power raw material, hazardous substances Resulted waste reused/ recycling	
5.	Development and implementation of partnerships between education institutions from both sides of the border to:			Neutral
	- Prevent and correct early school leaving phenomenon through integrated programs (including awareness campaigns) for prevention of school dropout, encourage school attendance and reintegration of those who have left school early;	Is not the case	Indirect	Neutral
	Develop after school programs and extra-curricular activities;	Is not the case	Indirect	Neutral
6.	Development and implementation of joint actions in support of disadvantaged groups, e.g.:	Is not the case		Neutral
	Integrated support actions addressing children and youth with parents living abroad (which may include inter alia guidance, counselling, after school programmes, educational and cultural activities);	Is not the case	Indirect	Neutral
	Support actions meant to facilitate the social and work integration of people (children, youth and adults) with disabilities*	Is not the case	Indirect	Neutral
7.	Joint support actions for youth for the prevention of drug use, human trafficking, alcohol abuse, etc.	Is not the case	Indirect	Neutral
8.	Development and implementation of cross border actions for enhancing/improving/facilitating job qualifications and competences	Is not the case	Indirect	Neutral

### Priority 1.2 – Promotion and support to research and innovation

No.	Indicative activities	Environmental aspects and objective considered	Potential impact	Environmental assessment
1.	Development of partnerships/networking between universities for joint development of theoretical research	Is not the case	Indirect	Neutral
2.	Joint research actions and studies (including related equipment procurement) in the field of environment (climate change challenges, preservation of biodiversity, renewable energy and resource efficiency, etc.).	Is not the case	Indirect	Positive impact

3.	Promotion and support for research and innovation through rehabilitation/modernization/extension of the specific infrastructure including the procurement of related equipment.	Efficiency Waste management	Positive Reduced consumption of power raw material, hazardous substances Resulted waste reused/ recycling	Neutral
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**TO3 - PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE**

**Objective 2:** Preservation of the cultural and historical heritage in the eligible area, support the development of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.

**Priority 2.1 – Preservation and promotion of the cultural and historical heritage**

No	Indicative activities	Environmental aspects and objective considered	Potential impact	Environmental assessment
1.	Restoration, conservation, consolidation, protection, security of cultural and historical monuments (including the corresponding access roads), museums, objects and art collections and their joint promotion based on relevant cross-border strategies/concepts;	Air Water Soil Waste Management Biodiversity Landscape Cultural heritage	Positive The technologies should have a minimum impact	Positive impact
2.	Preservation, security, and joint valorisation of cultural and historical monuments and objects;	Efficiency Waste management	Positive Reduced consumption of power raw material, hazardous substances Resulted waste reused/ recycling	Neutral
3.	Cultural institutions networks aiming at the promotion of the cultural and historical heritage	Is not the case	Indirect	Neutral
4.	Support for specific and traditional craftsman activities, important for preserving local culture and identity.	Is not the case	Indirect	Neutral
5.	Promotion of specific and traditional activities in the eligible area (including cross border cultural events);	Is not the case	Indirect	Neutral
6.	Preserving, promoting and developing the cultural and historical heritage, mainly through cultural events with a cross-border dimension;	Is not the case	Indirect	Neutral
7.	Valorisation of the historical and cultural heritage through developing joint promotion	Is not the case	Indirect	Neutral

strategies, common tourism products and services.			
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**TO7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS**

**Objective 3:** *Improve public transport services, infrastructure and ITC cooperation and networking*

**Priority 3.1 – Development of cross border transport infrastructure and ICT tools**

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact	Environmental assessment
1.	Reconstruction, rehabilitation, modernization of cross-border transport systems	Air Water Soil Waste Management Biodiversity	Positive	Positive impact
2.	Development of environmentally friendly (carbon-proofed) cross-border transport initiatives and innovative solutions ;	Air Water Soil Waste Management Biodiversity	Positive	Positive impact
3.	Improvements of multimode transport (road/water) facilities of cross-border interest;	Air Water Soil Waste Management Biodiversity	Positive	Positive impact
4.	Reconstruction, rehabilitation, widening of cross-border (segments of) roads connecting settlements alongside the border with main road, which leads to the border;	Air Water Soil Waste Management Biodiversity	Positive	Positive impact
5.	Improvement/restoration/construction of (segments of) access roads to centres of cross-border interest;	Air Water Soil Waste Management Biodiversity	Positive	Positive impact
6.	Elaboration of joint strategies/policies/plans for improving the cross-border transport infrastructure;	Is not the case	Indirect	Neutral
7.	Development of cross-border connections, information and integrated communications network and services;	Is not the case	Indirect	Neutral
8.	Upgrading existing facilities to enable linkages between communities and public services which promote co-operation on a cross-border and wider international basis;	Is not the case	Indirect	Neutral

**TO8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY**

**Objective 4:** Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects

**Priority 4.1 - Support to the development of health services and access to health**

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact	Environmental assessment
1.	Joint activities meant to enhance the access to health in the border area through construction / rehabilitation / modernization of infrastructure of public health services (including through the use of renewable energy etc.);	Is not the case	Indirect	Neutral
2.	Developing labs and mobile labs for screening / clinical monitoring of diseases and prevention of cross border epidemics;	Air Water Soil Waste Management Biodiversity	Positive	Positive impact
3.	Equipping specific public medical service infrastructure (outpatient, emergency room facilities, medical centres, integrated social intervention, etc.);	Is not the case	Indirect	Neutral
4.	Joint training programs and exchange of experience, networking for supporting the functioning of the specific public medical services, telemedicine ;	Is not the case	Indirect	Neutral
5.	Exchange of experience, joint activities in order to ensure compatibility of the treatment guidelines, joint diagnosis programmes;	Is not the case	Indirect	Neutral
6.	Awareness campaigns concerning public education on health, diseases and prevention of epidemics.	Is not the case	Indirect	Neutral

**Priority 4.2 – Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations**

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact	Environmental assessment
1.	Common measures for preventing land slide and flooding of the cross border areas;	Soil Water Biodiversity Landscape	Positive	Positive impact
2.	Joint integrated systems for efficient monitoring and disaster prevention and for the mitigation of consequences;	Soil Water Biodiversity Landscape	Positive	Positive impact

3.	Common strategies and tools for hazard management and risk prevention including joint action plans;	Is not the case	Indirect	Neutral
4.	Elaborating of joint detailed maps and databases (indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services;)	Soil Water Biodiversity Landscape	Positive	Positive impact
5.	Exchanging experience and knowledge, including raising awareness in the field of efficient risk prevention and management in the cross-border area;	Is not the case	Indirect	Neutral
6.	Development of integrated and common standards for the urban planning and risk management;	Is not the case	Indirect	Neutral
7.	Investments and development of common, integrated, emergency management systems.	Soil Water Biodiversity Landscape	Positive	Positive impact
8.	Planning co-ordinated actions of the authorities in emergency situations caused by natural and man-made disasters (flood, fire, heat waves, earthquakes, storms).	Is not the case	Indirect	Neutral

#### Priority 4.3 Prevention and fight against organised crime and police cooperation

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact	Environmental assessment
1.	Common actions for increasing mobility and administrative capacity of police units (including border police);	Is not the case	Indirect	Neutral
2.	Creating collaborative working platforms in order to increase the efficiency of police, border police and custom structures in the exchange of data and information;	Is not the case	Indirect	Neutral
3.	Joint trainings of police, customs, border police, gendarmerie, exchange of best practices on specific areas of activity (analysis, criminal investigation, organized crime).	Is not the case	Indirect	Neutral
4.	Investment in construction, renovation or upgrading of police and border crossing infrastructure and related buildings;	Air Water Soil Waste Management Biodiversity	Positive	Positive impact
5.	Investments in operating equipment and facilities specific for the activity of police/customs/border police/gendarmerie (e.g. laboratories, equipment, detection tools, hardware and software, means of	Air Water Soil Waste Management	Positive	Positive impact

	transport);	Biodiversity		
6.	Developing common policies and strategies, experience exchange for fighting organised crime.	Is not the case	Indirect	Neutral

## LARGE INFRASTRUCTURE PROJECTS

No. crt.	Indicative activities	Environmental aspects and objective considered	Potential impact	Environmental assessment
1.	«Clean river» Dunărea	Water Biodiversity	Positive	Positive impact
3.	Improving the cross-border infrastructure – opening the gate to Europe	Air Water Soil Waste Management	Positive	Positive impact
4.	Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine	Air Water Soil Waste Management	Positive	Neutral
5.	Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management.	Air Water Soil Waste Management	Positive	Neutral

The alternatives analysed for the Joint Operational Programme Romania – Ukraine for period 2014 ÷ 2020 are presented below:

**Alternative 0:** The Programme is not implemented;

**Alternative 1:** The Programme Ro-Ua has four thematic objectives and a prioritized list of Large Infrastructure Projects

For each priority selected for the thematic objectives of the Programme Ro-Ua a proper justification was provided regarding the needs of the eligible area of the Ro-Ua Programme.

According to the article 10 of SEA Directive, the monitoring of the significant environmental effects of Programme has to be done, in order to identify early any adverse effects and to be able to take the proper corrective measures.

The monitoring system is proposed based on the environmental issues that may be substantially affected by the implementation of CBC Programme Ro-Ua.

For the monitoring of the Programme impact on the environment the following principles were taken into consideration:

- Contribution to energy efficiency, the reduced usage of raw materials or hazardous substances;
- Contribution to the development of green infrastructure, including management of protected areas
- Contribution to the surface/ ground water proper management

- Contribution to an adequate management of the use of ground and underground waters
- Contribution to sustainable mobility and multimodal transport;
- Contribution to an effective waste management, recycling and reusage;
- Contribution to risk prevention/natural disasters and climate change mitigation;
- Application of the principle of green public procurement.

Based on the evaluation of the indicative activities with possible impact on the environment the following recommendation were made regarding the monitoring framework of the programme as well as the use of specific environment indicators:

<b>Thematic objectives</b>	<b>Priority</b>	<b>Recommendation submitted as part of SEA procedure</b>
TO2 Support to education, research, technological development & innovation	P 1.1 Institutional cooperation in the educational field for increasing access to education and quality of education	Including an additional indicator for the Program: „ <i>Number of rehabilitated / modernized educational institutions</i> ”
	P 1.2 Promotion and support to research and innovation	None
TO3 Promotion of the local culture and preservation of historical heritage	P 2.1 Preservation and promotion of the cultural and historical heritage	None
TO7 Improvement of accessibility to the regions, development of transport and common networks and systems	P 3.1 Development of cross border transport infrastructure and ICT tools	Including an additional indicator for the Program: “ <i>Number of environmentally friendly (carbon-proofed) cross-border transport initiatives developed</i> ”  <i>Modification of an indicator in order to include activities related to multimodal transport</i>
OT8 Common challenges in the field of safety and security	P 4.1 Support to the development of health services and access to health	None
	P 4.2 Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations	Completion of the proposed indicator related to joint activities with “ <i>new or updated maps, databases, systems / structures, purchased equipment, etc</i> ” Completion of the indicator in order to include activities for reducing the impact of disasters caused by man (including the project Clean river) Use of an environmental specific indicator : Land surface affected by the implementation of the measures

	P 4.3 Prevention and fight against organised crime and police cooperation	None
Large infrastructure projects	«Clean river» Dunărea	None
	Improving the cross-border infrastructure – opening the gate to Europe	None
	Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine	None
	Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management.	None

The monitoring indicators of indicative activities associated with the four thematic objectives of Programme Ro-Ua and Large Infrastructure Projects which may impact the environmental aspects considered in the current strategic environmental assessment are presented in the following table:

<b>INDICATIVE ACTIVITIES of the Programme Ro-Ua</b>	<b>Proposed monitoring indicators</b>
<b>TO2 - SUPPORT TO EDUCATION, RESEARCH, TECHNOLOGICAL DEVELOPMENT &amp; INNOVATION</b>	
<b>Objective 1:</b> <i>Develop education and support research and innovation at the level of the Programme area by facilitating the cooperation at local, regional and central level</i>	
<i>Priority 1.1 Institutional cooperation in the educational field for increasing access to education and quality of education</i>	
Rehabilitation/modernization/ extension/ equipment procurement for the educational infrastructure to provide the necessary material preconditions of a quality educational process and increase the participation in the educational processes	Number of rehabilitated / modernized educational institutions
<i>Priority 1.2 Promotion and support to research and innovation</i>	
Promotion and support for research and innovation through rehabilitation/modernization/extension of the specific infrastructure including the procurement of related equipment.	Number of institutions using programme support for cooperation in R&D and support of innovation
<b>TO3 - PROMOTION OF THE LOCAL CULTURE AND PRESERVATION OF HISTORICAL HERITAGE</b>	
<b>Objective 2:</b> <i>Preservation of the cultural and historical heritage in the eligible area, support the developing of local culture, specific cultural identities and the cultural dialog contributing to an enhanced attractiveness of the eligible area.</i>	
<i>Priority 2.1 Preservation and promotion of the cultural and historical heritage</i>	
Restoration, conservation, consolidation, protection, security of cultural and historical monuments (including the corresponding access roads),	Number of improved cultural and historical sites

museums, objects and art collections and their joint promotion based on relevant cross-border strategies/concepts	
Preservation, security, and joint valorisation of cultural and historical monuments and objects	Number of improved cultural and historical sites
<b>TO7 - IMPROVEMENT OF ACCESSIBILITY TO THE REGIONS, DEVELOPMENT OF TRANSPORT AND COMMON NETWORKS AND SYSTEMS</b>	
<b>Objective 3: Improve public transport services, infrastructure and ITC cooperation and networking</b>	
<i>Priority 3.1 Development of cross border transport infrastructure and ICT tools</i>	
Reconstruction, rehabilitation, modernization of cross-border transport systems	Total length of reconstructed or upgraded roads
Development of environmentally friendly cross-border transport initiatives and innovative solutions	Number of transport initiatives developed with low environmental impact
Improvements of multimode transport (road/water) facilities of cross-border interest	Number of joint mechanisms to support improvement of cross-border infrastructure (joint planning documents, including: strategies, plans, action plans; multi-modal facilitation mechanisms) developed
Reconstruction, rehabilitation, widening of cross-border (segments of) roads connecting settlements alongside the border with main road, which leads to the border	Total length of reconstructed or upgraded roads
Improvement/restoration/construction of (segments of) access roads to centres of cross-border interest	Total length of reconstructed or upgraded roads
<b>TO8 - COMMON CHALLENGES IN THE FIELD OF SAFETY AND SECURITY</b>	
<b>Objective 4: Addressing common challenges in cross-border security, access to health, management of natural and anthropic risks and emergency situations through joint projects</b>	
<i>Priority 4.1 Support to the development of health services and access to health</i>	
Joint activities meant to enhance the access to health in the border area through construction / rehabilitation / modernization of infrastructure of public health services (including through the use of renewable energy etc.)	Population covered by improved health services as a direct consequence of programme support
Developing labs and mobile labs for screening / clinical monitoring of diseases and prevention of cross border epidemics	Number of medical service infrastructure units improved
Equipping specific public medical service infrastructure (outpatient, emergency room facilities, medical centres, integrated social intervention, etc.)	Number of medical service infrastructure units improved Population covered by improved health services as a direct consequence of programme support
<i>Priority 4.2 Support to joint activities for the prevention of natural and man-made disasters as well as joint actions during emergency situations</i>	
Common measures for preventing land slide and flooding of the cross border areas	Population benefiting from flood protection measures Land surface affected by the implementation of the measures <sup>4</sup>
Joint integrated systems for efficient monitoring and disaster prevention and for the mitigation of consequences	Number of joint actions, including soft actions (exchanges of experience, training, study visits, joint planning session, new or updated maps, databases, systems / structures, purchased equipment, etc.) and joint infrastructure investments in emergency situations and disasters caused by man
Elaborating of joint detailed maps and databases (indicating natural and technological risks, and land use for regional planning authorities, environmental agencies and emergency services)	
Investments and development of common, integrated, emergency management systems	

<i>Priority 4.3 Prevention and fight against organised crime and police cooperation</i>	
Investment in construction, renovation or upgrading of police and border crossing infrastructure and related buildings	Number of modernized facilities of police, police border and custom services from the eligible area
Investments in operating equipment and facilities specific for the activity of police/customs/border police/gendarmerie (e.g. laboratories, equipment, detection tools, hardware and software, means of transport)	
<b>Large Infrastructure projects</b>	
«Clean river» Dunărea	Population benefiting from flood protection measures Number of joint actions, including soft operations (Including but not limiting to exchange experience; trainings; study visits; common planning sessions; newly developed: maps, data bases, systems/structures, aquisitioned equipments; etc.), as well as joint infrastructure investments in the field of emergency situations and the prevention of man-made disasters
Improving the cross-border infrastructure – opening the gate to Europe	Total length of reconstructed or upgraded roads
Regional Cooperation for Prevention and Fighting of Cross-border Crime between Romania-Ukraine	Number of modernized facilities of police, police border and custom services from the eligible area
Improvement of the population safety and security level in the cross-border area by enhancing the joint training and cooperation actions in emergency management	Number of joint actions, including soft operations (Including but not limiting to exchange experience; trainings; study visits; common planning sessions; newly developed: maps, data bases, systems/structures, aquisitioned equipments; etc.), as well as joint infrastructure investments in the field of emergency situations and the prevention of man-made disasters

Some of indicators proposed for monitoring the Programme effects on the environment were selected from indicators for monitoring achieving the program goals, that highlight the impact on environmental issues considered, and if this could not be relevant, new indicators were proposed or the Programme indicators were adapted.

The monitoring indicators will be used for assessment of effects on environment for each project financed from the Programme. This data will be provided by the project beneficiaries through the monitoring of activities and will be collected annually in order to be able to include them in the Annual Implementing Report of the Programme submitted to the JMC. Authorities proposed to be involved in the monitoring of the effects on the environment are: project beneficiaries, JMC, MA (MRDPA).