

# **ENVIRONMENTAL INFRASTRUCTURE DEVELOPMENT IN THE ROMANIAN NORTH-WEST REGION AFTER EU ACCESSION**

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## **ABSTRACT**

Following the negotiations for Chapter 22 – Environment of the Accession Treaty, Romania has certain commitments that imply substantial investments in environment infrastructure. The most important strategic document for the 2007-2013 planning period is the Sectoral Operational Programme Environment (SOP Environment). SOP Environment is designed to contribute substantially to the achievement of thematic priority “Develop Basic Infrastructure to European Standards”. The needs are really huge. Only for the strategic direction “Improvement of accessibility to public utilities in Romania and support conditions for economic development in the regions” needs investments estimated to about 29 billion Euros by 2018. The amount offered by SOP Environment signed in July 11, 2007 is about 5.5 billion Euros. The importance of using EU financing was understood in the North-West Region. As long as Romania had the first approved major infrastructure projects in EU-27 and still has the largest number of them, out of these projects nearly 25% are from the North-West Region. In the regionalization of the Water Sector the Operator from Cluj-Napoca had a pioneering role. They provide their services in two counties for more than 700 000 inhabitants. Important projects are under preparation also for integrated waste management.

## **KEY WORDS**

Environmental infrastructure, European Funds, Romanian North-West Region, Operational Programme

## **1. Introduction**

The definition of infrastructural issues often is a quite a disputable question. So I would turn to the Encyclopædia Britannica to define the notion: “environmental infrastructure is the infrastructure that provides cities and towns with water supply, waste disposal, and pollution control services. They include extensive networks of aqueducts, reservoirs, water distribution pipes, sewer pipes, and pumping stations; treatment systems such as sedimentation tanks and aeration tanks, filters, septic tanks, desalination plants, and incinerators; and waste disposal facilities such as sanitary landfills and secure hazardous-waste storage impoundments. These municipal works serve two important purposes: they protect human health and safeguard environmental quality.”

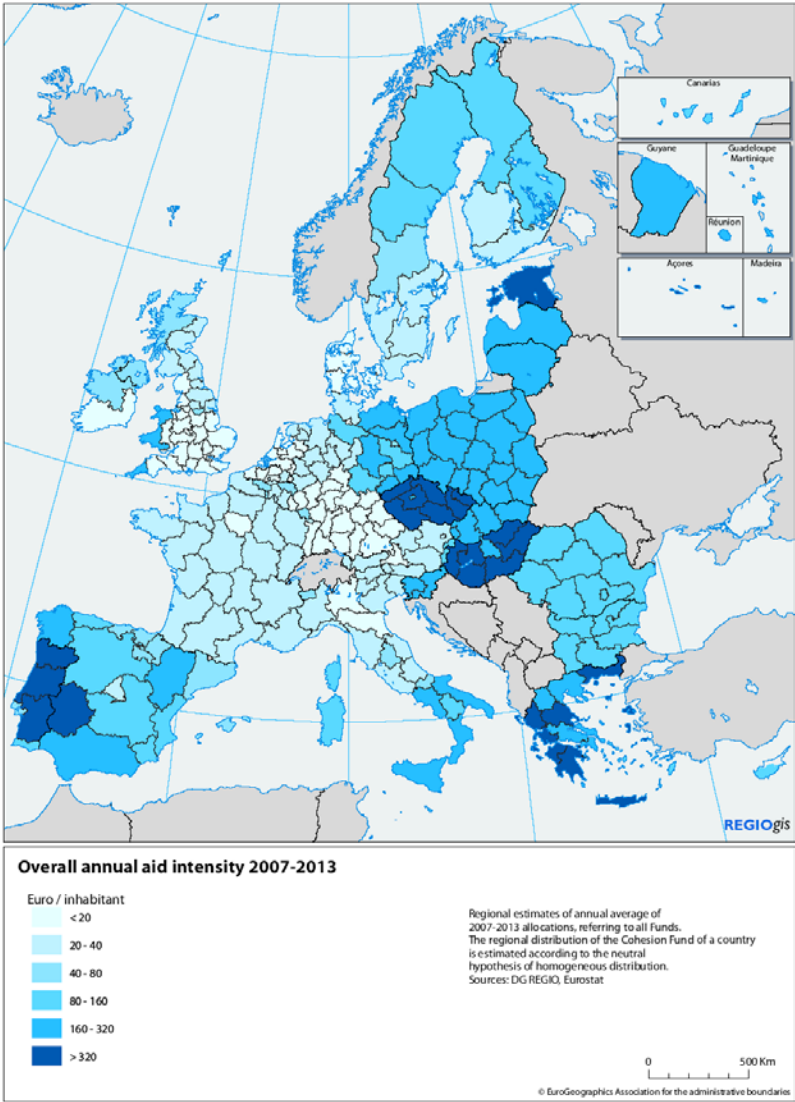
Romania the new EU member state since 2007 unfortunately is lagging behind also concerning the development of that kind of infrastructure. So under the Convergence Objective one of the priorities is to develop basic infrastructure to European Standards and in the same time the protection and improvement of environmental quality.

The problems are huge; I would show only some of them:

- 79% of the wastewater are untreated or insufficiently treated and flows directly into natural receivers;
- Only 52% of Romania’s population is connected both to water and sewage services;
- 363 million tones of waste were generated in 2004 – approximately 326 million tones produced by mining industry, approximately 29 million tons other production waste, approximately 8 million tons municipal waste;

- About 40% of the municipal waste components represent recyclable materials, out of which about 20% can be recovered; only 2% of the recyclable materials generated is recovered;
- Energy industry produces high quantity of waste - about 16 millions tones were produced in 2004;
- 252 municipal landfills were operating in urban areas in 2005, out of which 234 landfills do not comply with environmental standards; there are approx. 2,686 small dumping sites in rural areas;
- Natural and semi-natural ecosystems represents 47% of the entire country territory;
- At present date, the surface of natural protected areas covers up to 8% from the entire country territory.

Figure 1.: Overall annual aid intensity 2007-2013



Source: Fabrizio Barca

As an EU member, Romania benefits from post accession funds, which are significantly larger, than the pre-accession funds. The intensity of overall annual aid is showed also on **Figure 1**. The total amount allocated for Romania for the period 2007-2013 for Structural and Cohesion Funds is Euro 19,668 billion, out of which:

- Euro 6.552 billion - Cohesion Fund
- Euro 12.661 billion - European Regional Development Fund and European Social Fund within Convergence Objective
- Euro 455 million - European Regional Development Fund within European Territorial Cooperation Objective.

Allocations for agriculture, rural development and fisheries for 2007-2013 are estimated at Euro 7.1 billion from European Agricultural Fund for Rural Development and Euro 0.2 billion from European Fund for Fisheries.

The funds are meant to increase economic competitiveness, improve transport and environmental infrastructure, develop and strengthen regional development, improve human resources development and strengthen administrative capacity, in order to speed up the economic convergence in the EU.

The use of structural instruments (ERDF, ESF and CF) is based on programmes. Potential beneficiaries can propose projects and apply for funding through Operational Programmes (OPs).

Examining **Table 1**, we can conclude that in the lagging regions and even in territorial cooperation the topic of environmental protection and risk prevention is on the second important issue after transportation concerning allocation of cohesion policy budget in 2007-2013.

**Table 1.: Allocation of cohesion policy budget by categories and territorial destination, 2007-2013(\*) (% shares)**

	<b>Lagging Regions and countries</b>	<b>Nonlagging Regions</b>	<b>Territorial cooperation</b>	<b>Total</b>
Research and technological development (R&TD) and innovation	13.0	21.9	16.3	14.5
Support to firms' investments	4.0	4.5	0.4	4.0
Information Society	4.4	4.2	7.1	4.4
Transport	25.7	4.5	13.2	22.0
Energy	3.1	3.3	4.3	3.1
<b>Environmental protection and risk prevention</b>	<b>16.0</b>	<b>6.3</b>	<b>16.1</b>	<b>14.6</b>
Tourism	1.8	1.5	7.4	1.8
Culture	1.7	1.5	6.0	1.7
Urban and rural regeneration	2.9	3.5	2.2	3.0
Adaptability of workers and firms, enterprises and entrepreneurs	3.0	10.4	1.8	4.2
Access to employment and active and preventive labour market measures	5.0	15.3	2.5	6.6
Social inclusion of less-favoured persons	1.8	9.1	0.8	2.9
Human capital (education, life-long training, high-level studies in R&TD)	8.0	3.9	7.6	7.6
Social infrastructure	5.5	1.5	5.7	4.9
Partnership and networking	0.2	0.7	2.8	0.4
Institutional capacity at national, regional and local level	1.1	0.2	3.5	1.0
Reduction of additional costs of outermost Regions	0.1	0.5	0.1	0.2
Technical assistance	3.1	3.1	5.9	3.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

*Source: DG REGIO.*

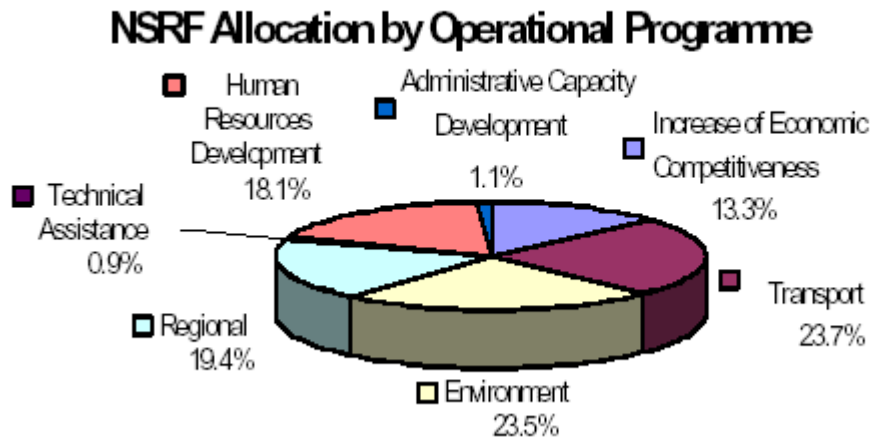
## 2. Sectoral Operational Programme Environment

The one of the seven operational programmes under Objective “Convergence” for the EU programming period of 2007-2013 is SOP Environment. It has been drawn up in correlation with the third Priority of Romania’s National Development Plan (NDP) 2007-2013 - “Protection and improvement of environment quality” and the priorities under National Strategic Reference Framework (NSRF) - “Develop Basic Infrastructure to European Standards”. The SOP contains essential elements for the successful implementation of the NDP and NSRF referring to environmental protection development; its basic objective is to promote sustainable development of the country.

The Sectoral Operational Programme Environment (SOP ENV) is closely linked to the national objectives of the strategy laid down in the 2007-2013 NDP and NSRF, which takes into consideration the European Union’s supporting objectives, principles and practices.

On **Diagram 1** we can see that European trend is kept also in Romania: allocation for Environment is on the second place after Transportation.

Diagram 1



Source: National Strategic Reference Framework Romania 2007-2013

It is designed to lay the foundation and be a catalyst for a more competitive economy, a better environment and more balanced regional development. The SOP Environment is fully based on the goals and priorities of the European Union’s environment and infrastructure policies and reflects Romania’s international obligations as well as its specific national interests.

The overall objective of SOP Environment is to protect and improve the environment and living standards in Romania, focusing in particular on meeting the environmental acquis. The aim is to reduce the environment infrastructure gap that exists between the European Union and Romania both in terms of quantity and quality. This should result in more effective and efficient services, while taking fully into account sustainable development and the polluter pays principle.

**Table 2.: Allocation of cohesion policy budget by categories and sub-categories, 2007-2013**

(million euros at current prices; % shares)

<i>Code</i>	<b>Environmental protection and risk prevention 50 120.2</b>	<b>Million euros</b>	<b>Overall share</b>	<b>Share within (%)</b>
44	Management of household and industrial waste	6 234.3	1.8	12.4
45	Management and distribution of water (drink water)	8 087.7	2.3	16.1
46	Water treatment (waste water)	13 906.6	4.0	27.7
47	Air quality	1 020.4	0.3	2.0
48	Integrated prevention and pollution control	738.9	0.2	1.5
49	Mitigation and adaption to climate change	304.7	0.1	0.6
50	Rehabilitation of industrial sites and contaminated land	3 450.6	1.0	6.9
51	Promotion of biodiversity and nature protection (including Natura 2000)	2 705.1	0.8	5.4
52	Promotion of clean urban transport	6 166.7	1.8	12.3
53	Risk prevention (...)	5 829.0	1.7	11.6
54	Other measures to preserve the environment and prevent risks	1 676.2	0.5	3.3

Source: DG Regio

In order to achieve this objective, the following priority axes are identified:

**Priority Axis 1** “Extension and modernization of water and wastewater systems”;

**Priority Axis 2** “Development of integrated waste management systems and rehabilitation of historically contaminated sites”;

**Priority Axis 3** “Reduction of pollution and mitigation of climate change by restructuring and renovating urban heating systems towards energy efficiency targets in the identified local environmental hotspots”;

**Priority Axis 4** “Implementation of adequate management systems for nature protection”;

**Priority Axis 5** “Implementation of adequate infrastructure of natural risk prevention in most vulnerable areas”;

**Priority Axis 6** “Technical Assistance”.

Technical Assistance (TA) will assist in the implementation and monitoring of the programme. TA is expected to contribute significantly to achieving the global objective.

Analysing **Table 2.** we can observe that most of the SOP’s priorities can be find in the general Environmental protection and risk prevention subcategories on EU level.

The programme covers the period of 2007-2013, but its objectives also look forward to Romania’s development needs beyond 2013 by laying the foundations for sustainable economic development. It

will contribute to Romania meeting its EU obligations in the environment sector offering investment opportunities in all the regions of the country.

The SOP's total budget for the 2007-2013 programming period amounts to about Euro 5.6 billion. Out of this, about Euro 4.5 billion is envisaged as Community support, which represents about 23.5% of the financial envelope of the NSRF, and about Euro 1.1 billion comes from national contribution. The Community sources that will support SOP ENV implementation are Cohesion Fund and European Regional Development Fund.

The selection of investment priorities in the SOP ENV took into account the relevant contribution to the achievement of the environmental acquis aimed at improving the environmental quality and living standards for more than half of the population, the setting of an efficient management of environmental services, regional convergence, the speeding up of the implementation of national programmes, avoidance/ reduction of further economic and environmental losses (associated with lack of sustainable actions in short term).

The assessment of environmental needs and priorities resulted in the majority of investments taking place in the two fields – water and waste management sectors - that require significantly higher investments than the others. The choice was driven by the acquis and by the associated contribution to regional convergence, which should result from environmental improvement. As well, the need to complete investment programmes already started within the pre-accession programmes was taken into account. Investments include mainly replacements of worn-out infrastructure (e.g. noncompliant sewage plants, non-compliant landfills) but also new infrastructure to address the severe lack of basic utilities in many areas with higher population.

The programme will be managed at several levels. The Managing Authority for SOP ENV is the Ministry of Environment and Forests that is responsible for the programme implementation. The Intermediate Bodies, in number of eight, are set up for each of the eight development regions (NUTS II) in Romania. They will play an important role in SOP implementation at regional level, acting as interface between MA and beneficiaries. Their main responsibilities are related to programming, monitoring, controlling and reporting activities. The Beneficiaries play the main role in the management and implementation of the interventions approved under SOP ENV.

Once a project is selected, its implementation becomes the responsibility of the beneficiary. This organization has to provide the co-financing for the project, to meet the project objectives, to deliver the outputs, to report and document the expenses and deliverables and to observe the programme's rules and constraints.

The beneficiaries of the CF and ERDF are public authorities, companies owned by municipalities, public entities and NGOs.

SOP Environment always has been a champion among the operational programmes in Romania. It was signed among the first on national level, it had the first approved major infrastructure projects in EU-27 and it still ranks first in the EU with 17 approved and contracted projects out of 23 on national level. 12 projects are in the field of water and waste water with a total sum of eligible costs more than 1,167 billion EUR. 4 projects are for waste management with more than 125 millions EUR. And still one environment infrastructure project for rehabilitation of urban heating system with a budget of more than 63 millions EUR.

The other 6 major projects approved are 5 for SOP Transportation and 1 for SOP for Raising Economical Competitiveness.

In April 2010 there were 112 approved major projects on EU level, so the Romanian projects represent 20,54% of them. The total number of the Romanian major projects registered in Brussels is 34 so 68% are already approved. From this point of view Romania is on the 3<sup>rd</sup> place after Hungary with 24 registered and 17 approved major projects (percentage 71%) and Germany with 13 registered and 9 approved major projects. (**Table 3.**)

**Table 3.:** Situation of registered and approved major projects by the European Commission

Member state	Registered major projects	Major projects approved by the European Commission	Percentage of the approved major projects/ registered major projects on national level	Percentage of approved major projects/ total number of approved projects
CZ	17	7	41%	6,25%
PL	51	8	16%	7,14%
SK	6	3	50%	2,68
HU	24	17	71%	15,18%
<b>RO</b>	<b>34</b>	<b>23</b>	<b>68%</b>	<b>20,54%</b>
BG	3	3	-	2,68%
EE	11	6	55%	5,36%
LV	5	1	20%	0,89%
LT	1	0	-	0%
ES	41	11 27%	27%	9,82%
FR	22	7	32	6,25
UK	5	1	20	0,89
SI	7	3	43	2,68
PT	19	6	32	5,36
GR	2	0	-	0
IT	20	5	25	4,46
DE	13	9	69	8,04
MT	1	1	-	0,89
IE	2	1	-	0,89
<b>TOTAL</b>	<b>284</b>	<b>112</b>		

Source: Ministry of Environment and Forests - Romania

That is a good beginning but the hard work is still coming. And problems have already appeared during the public procurement process: huge delays. Because of appeals, unclear definitions in legislation, dumping prices...

There would be also proposed solutions:

- Those who file an appeal on a bid should pay a fee,
- There must be clarified what an “unreliable bid” means,
- There should be clear-cut limits under which the bidder offering a dumping price should be automatically excluded from the tender
- As the appeal procedure is completed at the National Council for settlement of Disputes, the contract should be concluded right away

So work should be started and finished in time. That would be a success for the whole Programme and maybe not only.

Another critical issue in implementation can be the Romanian co-financing.

The public co-financing is assured from the budget by the Romanian Government and by the local budgets from the public authorities which apply Structural Instruments for financing. Considering the lowest financial capacity of many local authorities to assure this co-financing, the Romanian Government decided to reduce as far as possible the local budget contribution. Thus, the principle which will be applied in the operational programs tell us that the personal co-financing which the local authority need to assure for a project will be in general 2% from the eligible value, a major exception being the projects which generates incomes. Consequently, the approved contribution of the local authorities is under 5% from the total of national co finance. Although we must mention that the introduction of the tax unique quota of 16% from January 2005 generates supplementary incomes for the local authorities, which should improve their capacity for financing development projects.

### 3. The situation in the North-West Region

The North-West Development Region in Romania consists of six counties (Bihor, Bistrița-Năsăud, Cluj, Maramureș, Satu-Mare and Sălaj), which have a share of 14.3 % of the territory of Romania and host 2.73 million inhabitants (12.66 % of Romania's population). The region contributed some 12 % to the total Romanian GDP (2005, INS 2008, own calculations) and was rewarded with a GDP per capita of 4,282 € in 2006. The region features a high degree of urbanization and a relatively broad supply of financial services, usually only to be found in the Capital Bucharest. Services account for some 35.8 % of employment and 45 % of regional GDP. So does agriculture with an employment share of 35 % (13 % of regional GDP) while industry and construction reaches only a share of 29.2 % (31 % of regional GDP).

There can be mentioned some critical environmental aspects in this region:

- Inadequate public services in the water and waste water sectors;
- There is a serious need concerning sewage and waste-water treatment systems on the required level in a large number of municipalities
- Many large agglomerations lack in water supply systems;
- Inadequate waste management systems;
- High proportion of waste deposited in landfills; low proportion of waste recycled;
- Existence of a large number of ecological burdens and waste dumping;
- Flora and fauna: endangered species;
- Frequent flood events;
- High specific emissions for SO<sub>2</sub> and NO<sub>x</sub>.

Also in this region SOP Environment helps to develop environmental infrastructure.

For Priorities Axes 1 and 2 in the North-West region are several projects under preparation (and some are already approved by the European Commission) with ISPA or external loans support:

- Modernization of water/wastewater infrastructure in the main agglomerations from Cluj – Salaj counties – approved: 197 millions EUR
- Modernization of water/wastewater infrastructure in Turda–Campia Turzii area, Cluj County – approved: 72 millions EUR
- Extension and modernization of water supply and sewerage system in Satu-Mare county
- Rehabilitation and modernization of water supply and sewerage systems for Bistrita-Nasaud County – approved 107 millions EUR
- Rehabilitation and modernization of water supply and sewerage systems for Bihor County
- Upgrading the water and waste water infrastructure in Maramures County
- Solid waste integrated management system in Maramures County
- Solid waste integrated management system in Bistrita-Nasaud county – approved 36,1 millions EUR
- Solid waste integrated management system in Cluj County
- Solid waste integrated management system in Salaj County
- Solid waste integrated management system in Bihor County
- Rehabilitation of historically contaminated area – Cluj County – Turda Microregion - Chemical Industries Turda
- Rehabilitation of urban heating system in Oradea

So out of 17 approved projects 4 are located in the North-West Region, which means nearly 25%. It is clearly a sign that the importance of the usage of Structural Instruments for the development of environmental infrastructure was clearly understood in the region.

There are also other sources of financing for environmental infrastructure development. First of all there are complementarities between the OP's. As long as SOP Environment finances projects in cities the National Rural Development Plan helps the villages concerning water infrastructure development. The problem of Energy is covered by the SOP Competitiveness and the Regional Operative Programme tackles the rehabilitation of industrial sites and contaminated lands.

There are also possibilities based on territorial cooperation programmes:

- South-East Europe Transnational Cooperation Programme
- Hungary-Romania CBC Programme (Bihar and Satu Mare counties)
- Hungary-Slovakia-Romania-Ukraine ENPI CBC Programme (Satu Mare and Maramures counties)

### **3.1. Water management utilities. Regionalisation of water services**

After a period of more than four decades of centralised management, Romania decided to return to local autonomy principle through decentralisation, in this way transferring major and concrete responsibilities to the local public administration. One of these, specifically mentioned in the Law no. 215/2001 regarding the local public administration and enforced by the Law No 326/2001 regarding the local public services, refers to the obligation of local administrations to organise their operation efficiently and adequately in order to provide public services.

However, only 30 municipalities of more than 100,000 inhabitants each have benefited from capital investment programmes for rehabilitation of their water and wastewater infrastructure. Many of these municipalities also obtained funds through the ISPA Programme to continue the rehabilitation and modernization of the water supply and wastewater systems. Only two municipalities of large size - Bucharest and Ploiesti - concluded concession contracts with private operators and succeeded in this manner to attract external capital for financing their local infrastructure. In total, about 50% of the urban population of the country benefits from these investment programmes, but they are not sufficient to meet full compliance with EU Directives.

Nevertheless, only a small minority of the 276 towns in Romania (at the end of 2003) have benefited from these programmes. Around 230 considered small and medium-sized towns, have not been able to attract financing from either international financial institutions or private operators. Due to lack of funds, these towns have made very little investments over the past 15 years to maintain and develop their water and wastewater infrastructure. As a consequence, the condition of their systems is very poor. Some of the major problems linked to water services in smaller agglomerations include:

- Inappropriate maintenance and operating services;
- High volume of unpaid water caused by networks leakages and low level of payment collection from the consumers;
- Lack of investments for rehabilitation / extension of water / wastewater infrastructure;
- Lack of experienced staff for promoting, management and implementation of large scale investments;
- Inefficient management of the operating, maintenance and personnel costs;
- Unclear role and responsibilities of institutions / authorities involved in management of public utilities;
- Inappropriate institutional framework.

There is a continuing need to ensure that all towns can invest to maintain and upgrade their infrastructure in order to have good services, able to meet EU standards. This requires adoption and implementation of adequately designed development policies, focused on meeting the real needs of the population, if services are to be affordable to everybody.

Against this background, since 2001 the Romanian authorities designed programmes meant to support local authorities to:

- Access international financing in small and medium agglomerations with the purpose of rehabilitating and modernizing local water infrastructure and
- Promote self sustainable regional utilities by introducing principles of cost recovery and efficiency into their operations.

These programmes are supported by pre-accession programmes (ISPA and Phare) and include so far 35 beneficiary counties of the total 42 in Romania.

The capacity strengthening scheme is designed to provide links to investment programmes supporting the rehabilitation, modernisation and up-grading of local water and wastewater infrastructure. To this end, investments are identified and prioritized to include components, which reduce costs, improve efficiency and basic services. New meter installation programmes, pressure and flow monitoring, reduction of unaccounted for waters, reduction of infiltrations in the sewerage systems, etc. represent component of every investment project as part of demand management programmes.

The capacity building programmes also include training for the local authorities to use external loans (co-financing) as a financial source for their investment and improve their capacity to plan their investment in municipal infrastructure on sustainable basis, by introduction of financial and operational discipline.

Another key point of the programme is the definition of the relationship between local authorities, as owner of assets, and operators. This relationship will be based on a contract for delegated services (concession contract), in accordance with the provisions of Romanian legislation and best European practices. The Regulatory body, ANRSC (National Authority for Regulation of Public Municipal Services), gives licences to the eligible operators, according to a set of criteria regarding their size, their professional and managerial capacity, their technical and financial performance. Furthermore, its powers also include significant control of prices and level of service expectations.

Within the programme, beneficiary local authorities will enter into concession contracts either with experienced utilities operators that have a proven record of capacity to prepare and implement investments of the size proposed in the programme, or with new regional operators formed by grouping of existing operators. This so-called Regional Operating Company (ROC) will be contracted by the municipalities in order to operate existing infrastructure and manage investment. It must be licensed and be able to demonstrate (during its initial years of operation, assisted by an institutional building TA project) its capacity to operate on a sustainable basis.

Accessing EU funds for the investment needs will be the incentive to move from a large number of weak services providers to a limited number of big and strong operators, capable of providing better services at affordable levels of tariffs, which ensure full cost recovery and loan reimbursement for local authorities.

The municipalities included in the programme will form together a so-called Association of Municipalities, representing a collaborative structure, which will allow the beneficiary local authorities better to monitor and supervise the implementation of the rehabilitation and modernisation works, as well as the performance of the Regional Operator. In this regard, a Management & Supervision Unit (MSU) will be established at the level of each Association of Municipalities (AoM), in order to act as the representative of the association, to monitor the construction programme and to monitor the financial and operational performance of the ROC's, via the concession contract. Mirroring this situation, a Project Implementation Unit (PIU) will be established in each ROC in order to manage the implementation of investment measures. This PIU will be the main local counterpart in the institutional mechanism for SOP measures implementation.

Summing up, the purpose of the process of regionalization of water services, initiated by Romanian authorities and supported largely by pre-accession programmes (PHARE, ISPA), is to assist the local beneficiaries (Associations of Municipalities and Regional Operating Companies) in the creation of

efficient water and wastewater service operators and in strengthening the capacity of local authority to monitor effectively their activities.

From institutional point of view, the regionalisation is achieved by reorganisation of existing public services owned by municipalities. Should any of the municipalities decide to privatise the water services, then an open tendering procedure is followed in line with the national legislation and the principles of the Treaty.

The overall objective of this programme is to support the local authorities to implement an integrated multi-annual capital investment programme in order to improve the standards of municipal water and wastewater services by creating efficient, financially viable and autonomous integrated regional service providers able to plan and implement investments in the context of a process of consolidation in the sector, in line with EU policies and practices.

### **3.1.1. Water/waste water sector in the North-West region**

The importance of the regionalization was clearly understood in some counties in the North-West Region. Among them the most effective pioneering work was done by the operator in Cluj and Salaj County (Somes SA). Since July 2006 the population of this area is supplied by the regional operator. The previous operator in Cluj had been transformed into a commercial company, which had been enlarged by incorporating the respective services in Salaj County. The former operator in Salaj had been left with the remaining municipal services. The personnel related to water supply and wastewater services have been integrated into Somes SA, which is presently in the phase of transition with respect to the organization and the final staffing of the services. With the incorporation of four towns of Salaj County and additional urban centres within Cluj County into the supply area of the Somes SA the population served increased by about 180 000 to some 600 000 becoming the third largest water suppliers in Romania (next to Bucharest and Constanta).

The financial performance of the former operator serving Cluj area (RAJAC Cluj) has always been satisfactory for the last years. The tariff level will be gradually increased from average national level (about 1.12 RON/m<sup>3</sup> for water and 0.43 RON/m<sup>3</sup> for wastewater in 2005) closer to full cost recovering levels (1.93 and 0.61 RON/m<sup>3</sup> for water and wastewater, respectively, until 31<sup>st</sup> December 2009).

Though significant progress has already been made in this project area, the water and wastewater services still show some shortcomings such as:

- The technical status of the water and wastewater infrastructure in the newly integrated supply areas is inadequate, thus causing disequilibrium in the supply of the respective services: significant investments are still needed in order to comply with the required water and wastewater standards;
- Differences in the commercial practices and the commercial efficiency in the towns supplied;
- Insufficient equipment for communication, operation, maintenance and repair works in the enlarged supply area;
- Weakness of the Management Information System

As a first step a Technical Assistance project is under implementation financed by ISPA. The Consultant in the frame of a Master Plan has developed his strategy towards finding consequent solutions for water and wastewater in order to meet European standards. Based on geographically referenced socio-economic and infrastructural data at the county level an analysis has been conducted to determine supply gaps in the water and wastewater sectors. Official population densities and estimated specific infrastructure costs have been adopted to calculate necessary investment needs. A number of alternatives is introduced to indicate in a comprehensive manner the available options and the corresponding costs.

Consequently, the most favourable approach for Cluj to meet the required standards involves the following measures:

- Focus on the rehabilitation of existing assets in the largest localities (both counties count together 30 localities larger than 2 000 inhabitants of which seven count more than 10 000 capita).
- The full coverage of the county with supply measures is a must to achieve the proposed connection rates.
- For the wastewater drainage and treatment sector, it is necessary to consider localities with less than 2 000 inhabitants to achieve the necessary connection rates (34% of population is living in villages of this size).
- Develop supply and drainage agglomerations involving several potentially relevant localities. The strong rural character and the distances between these localities suggest in many cases common solutions.

The total investment envisaged for Cluj and Salaj to meet EU requirements in the water sector in the most favourable alternative adds up to EUR 223 Mio. As regards wastewater drainage and treatment, the necessary budget amounts to estimated EUR 403 Mio.

In Cluj County there is still another regional operator (Compania de Apa Aries SA) deserving the Municipalities of Turda and Campia Turzii and surrounding nine communes. The future water and wastewater operator will face some problems inherited from the former operators, mainly related to a lack of financial means caused by low tariff and high cost levels. But recent developments show that the problems are recognized and problem-solving measures have already been initiated. The following aspects have to be kept under control:

- Achieving and keeping an acceptable standard of sanitation and of environmental protection.
- Establishing dependable maintenance and repair and proper extension in order to avoid operating out-dated equipment at high costs.
- Immediate rehabilitation works are required in all of the towns especially the rehabilitation of the networks and of the treatment facilities in order to their full capacity and to increase their performance.

The past commercial and financial performance of the operators of the two operators has to be further improved substantially. Weakness in cost control, still rather low water tariff levels and very low sewerage tariffs are the most striking aspects.

The total investment envisaged for this area to meet EU requirements in the most favourable alternative adds up to EUR 129 Mio. As regards wastewater drainage and treatment, the necessary budget amounts to estimated EUR 251 Mio.

Concerning Bistrita-Nasaud, Satu-Mare and Bihor counties they also have technical assistance projects and the first step will be here to gather all the available information and to redact the Master Plan for each county. Unfortunately there are serious problems in Bihor County concerning the association and establishing the regional operator.

## **3.2. Waste sector**

An important problem in Romania as regards environmental protection is the management of waste. This field covers activities of collection, transport, treatment, recovery and disposal of waste.

Data regarding the management of waste in Romania make a distinction between two main categories of waste:

- Municipal waste and similar waste from commercial activities, industry and institutions, construction and demolition waste and sludge resulted from the urban wastewater treatment plants;
- Production waste.

During 1998-2004, the ratio between the two categories varied from one year to another, the average values being 29% municipal waste and 71% production waste.

In urban area, the municipal waste management is carried out through specialized services belonging to the municipalities or through sanitation companies. The ratio of urban population covered by sanitation services increased from 73% in 1998 to about 90% in 2002-2003.

In rural area, there are no organized services for waste management, the transportation of waste to dumping sites being made individually by each generator. Only a limited number of rural localities are covered by organized services for waste management, and especially rural localities situated in the neighbourhood of urban centres. In 2003, about 5% of the rural population was covered by sanitation services, whilst in 2004 this ratio has increased to about 6.5%. The waste types representing municipal waste are managed in a different manner, according to their characteristics and the generated quantities.

### **3.2.1. Situation of waste management in the North-West Region**

Concerning waste management in the North-West Region the two most prepared counties are Bistrita-Nasaud and Maramures having technical assistance projects in an advanced phase but we have to take into consideration also Oradea were based on Public Private Partnership there is already built an ecologic landfill.

#### **Current situation in Maramures County:**

The solid waste management system in Maramureş County is characterised by traditional collection and disposal. However, not all localities are served by collection systems and disposal is in facilities that do not meet Romanian or EU requirements. Recycling is highly limited and waste treatment is not practiced; EU requirements are not achieved in either case. Different service delivery systems are used for waste management services, but all are organised at the level of individual local councils. In some cases, high levels of fee payment are achieved.

Waste management in Maramureş County is constrained by several factors in terms of achieving compliance with EU requirements. Key EU Directives will directly require changes in the way wastes are managed in the County. These changes will also drive additional, indirect changes; for example, direct requirements mandated by the EU for landfills result indirectly in the need for institutional change to provide for a centralised institutional structure to administer a landfill (and other aspects of the waste management system). Key constraints of waste management in Maramureş County associated with EU requirements are identified in the Table below, together with actions necessary to address these constraints during the Master Plan period. The estimated total first phase investment for Maramures is 33 880 000 EUR.

**Table 4.:** Summary of current Waste Management System Constraints

<b>System Component</b>	<b>Constraint</b>	<b>Requirements During Master Plan Period</b>	<b>Basis for Requirements</b>
<b>Waste Storage</b>	Inadequate storage facilities in rural areas	Provision and maintenance of waste containers in rural areas	Effective waste storage needed for all management options
<b>Collection</b>	Existing old equipment is inefficient and requires high levels of maintenance	Effective waste collection tailored to local needs that maximizes operational efficiency	Provision of service to ensure basic public health and cleanliness
<b>Recycling/Treatment</b>	Insufficient collection and lack of identified markets for recyclable materials	Design/implementation of infrastructure for collection of recyclable materials and for biodegradable waste	EU Directive 94/62/EC modified by CD 2004/12/CE EU Directive 2002/96/EC EU Directive 1993/31/EC
<b>Disposal</b>	Existing disposal sites not compliant with EU standards	Provision of legally compliant disposal capacity for all communities in the County	
<b>Financing/Cost Recovery</b>	Insufficient financing capability Absence of cost recovery linked to use of waste management facilities. Limited application of “polluter pay”	Provision of financing for required facilities/equipment Development of effective, efficient and affordable cost recovery framework, including allowance for reinvestment	Sustainable implementation of waste management system
<b>Legal/Institutional</b>	Lack of standards and/or enforcement Inadequate institutional frameworks to meet waste management requirements	Development, application and/or enforcement of standards Design/implementation of appropriate institutional structures	Sustainable implementation of waste management system
<b>Capacity Building</b>	Lack of capacity to manage an integrated solid waste management (ISWM) system	Develop capacity to manage ISWM system	Sustainable implementation of waste management system
<b>Public Awareness</b>	Lack of public awareness concerning waste management priorities and requirements Lack of awareness concerning links between solid waste management and other priorities	On-going public awareness campaign On-going awareness campaign targeted at other sector decision-makers	Sustainable implementation of waste management system

**Current situation in Bistrita-Nasaud County:**

The long term investment programme for Bistrița - Năsăud County has been organized in three parts: County level, urban areas and rural areas, indicating year of investment for each item.

The implementation plan includes the costs for continued public awareness raising, replacement of obsolete equipment, and for closure of the first landfill cell and opening of the next cell. These costs are intended to be covered through the financial depreciation mechanism and will be re-assessed in detail during the preparation of the feasibility study and cost benefit analysis.

**Table 5.:First Phase Priority Investments in Bistrita-Nasaud County (2007-2009)**

No.	Category	Measure	Cost [Euro]	Year
<b>COUNTY LEVEL</b>				
1	Waste Reduction	Development of public information and awareness campaigns	400,000	2007-2009
2	Recycling and biological treatment	Develop a 'waste stream adaptable' combination of mechanical and biological treatment (first phase)	2,400,000	2007-2009
3	Transfer and Transport	Construction of transfer systems and procurement of large transportation vehicles	1,800,000	2007-2009
4	Sanitary landfill	Construct one sanitary landfill to serve the entire County	2,800,000	2007-2009
5	Integrated Waste Management Centre	Development of IWMC area, access road, platform, utilities, weighbridge, fencing etc	1,600,000	2007-2009
6	Financial management Options	Investment funds managed at level of County council	100,000	2007-2009
7	Regionalising Services	Association of Local Councils; Establishment of a regional operator	300,000	2007-2009
<b>Total:</b>			<b>9,400,000</b>	
<b>URBAN</b>				
1	Reuse	Recycling 'bring' centres	200,000	2007-2009
2	Street cleaning	Mixed manual/mechanical sweeping with manual litter bin emptying	800,000	2007-2009
3	Collection	Procurement of 80-240 litre eurobins and 1,100 litre euro containers	500,000	2007-2009
4	Recycling	Separate collection of mixed 'dry' recyclables	1,200,000	2007-2009
5	Existing dumpsites	Covering and limited remediation works	4,200,000	2007-2009
6	Existing dumpsites	Stabilisation, profiling and remediation to acceptable standards		
7	Awareness raising	Service related information	200,000	2007-2009
<b>Total:</b>			<b>7,100,000</b>	
<b>RURAL</b>				
1	Waste Reduction	Sufficient but not over-provided container size and collection frequency	-	2007-2009
2	Reuse	Management by informal sector	-	-
3	Street cleaning	Manual sweeping and litter bin emptying	100,000	2007-2009
4	Collection	Steel mini-skips, transfer skips, tractors with trailers	900,000	2007-2009
5	Recycling	Informal sector driven recycling	-	-
6	Biological treatment	Backyard/community composting	200,000	2007-2009
7	Existing dumpsites	Simple covering and no remediation	1,800,000	2007-2009

8	Awareness raising	Local action, advocacy and education	200,000	2007-2009
<b>Total:</b>			<b>3,200,000</b>	
<b>Sub-total:</b>			<b>19,700,000</b>	
<b>Contingencies (10%)</b>			<b>1,970,000</b>	
<b>Estimated total first phase investment</b>			<b>21,670,000</b>	

Concerning Cluj and Salaj counties they just started their technical assistance projects in order to prepare an application for the European Regional Development Fund. In Bihor County the plan is to extend the existing ecological landfill so that it can deserve the whole county.

#### 4. Conclusions

In the North-West Region the possibilities offered by the Structural and Cohesion Funds has to be understood especially because the region's GDP per capita is slightly below the Romanian average (approximately 90% of the Romanian average), despite the fact that the major cities –Cluj-Napoca and Oradea – are some of the most prosperous in Romania. An adequate infrastructure is the basis of economic development. Environmental infrastructure must not be forgotten in a European context where sustainable development is one of the most topical questions. Some has surely understood the opportunity like the regional water operator in Cluj and Salaj counties beeing among the first applicants for Cohesion Funds. There is a serious activity also in the waste sector. But these are only the first steps in this 2007-2013 programming period. Projects are under preparation but they have to be properly created and seriously implemented.

During the accession negotiations the studies showed that till 2018 the needs of Romania concerning environment are more than 29 billions of euros, only to comply with the Water Framework Directive means to spend more than 15 billions. So even if the success were 100% there remains a lot to do. The actual financial crisis made the situation even worse, because finally who bears the most part of the load is the population. Investments always mean to increase the fees. But now the affordability of the population will rather decrease. So the next question is the sustainability. In any case the development is needed. There is no economic development without the existence of basic infrastructure. And unsolved problems will not lead simply to isolated catastrophes. Pollution does not know borders.

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