

Sustainable development and environmental protection in Romania**

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ABSTRACT

Environmental pollution and its devastating effects, which have made their mark on the contemporary generation, have generated the need for policies to protect the environment, but at the same time to create a framework conducive to sustainable development. Although in the literature are now numerous concerns for refining the objectives, to identify appropriate methodologies to help protect the environment and ensure sustainable development, however there is no a clear picture about the strategies of development and environmental protection, especially in Romania. The research goal is to capture the impact of pollutant factors on the environment`development, as well as measures that could mitigate the harmful effects of it. The paper presents and analyzes the economic reality of Romania, by drawing up a report on the work of environmental protection agencies, Botoșani. Its importance consist in the fact that it represents an element of strategic guidance on long-term efforts to solve the environmental development and protection issue. Also, the study tries to capture the ability of some strategies of sustainable development on amount of time horizon of 2013-2020. As can be seen in the work, Romania has a relatively large domestic market and the second largest in Central and Eastern Europe, a qualified workforce with low costs compared to Western European countries, and Romania's economic prospects have been improved following the accession to the European Union.

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1. INTRODUCTION

Industrialization has led to deeply changes in the rural area and in western countries for more than a century, and in Romania on the half-century, which found reflection in a strong concentration of population in urban areas, while gradually decline of the motherland, and that led to the exodus.

Worldwide, industrialization and urbanization are aware a new impetus. Mirage comfort from towns and economic and social situation better than that in the rural areas have accelerated the process of depopulation of the motherland. The agricultural community continued the process of decreasing numerical and economic and social degradation.

The essential process that shapes the economic progress is economic development and its contribution to improving the human condition, quality of life. From this point of view, economic progress is, at the same time, social progress. Thus, economic policies should be designed in the light of their impact on the environment, and environmental policies must take into account the economic implications.

Fr. Perroux J. (1991) considered, justly, that no progress would not deserve to be called economically if it would diminish the chances of flowering of the human being; conversely, no progress would not be social if you give everyone the means to a living human status.

The reason I chose this issue is due to the importance of the protection of the environment in which we are part, both in view of ensuring a healthy life, and to ensure a propitious economic environment development society.

Another aspect that motivates the choice of the theme "*Sustainable development and environmental protection in Romania*" is found in the paradoxical character that defines the process of globalization, taking into account the fact that although most of the time it can be beneficial, may result in the same time, with risk-taking both in terms of the natural environment, as well as industry and transportation.

In the literature there are different formulations of the concept of sustainable development, but underlying the elaboration of development policies in various fields of human activity.

By Allen's (1992) opinion, the sustainability expresses a use of "species and ecosystems at the levels and in ways that allow them to renew themselves for any practical purpose ... development that realizes human needs over the long term and improve quality of life". Goodland R. and Ledec G. (1988) believe that "sustainable development is a pattern of structural economic and social transformations currently available without putting our potential likely to obtain similar benefits in the future[...]sustainable development involves the use of renewable natural resources in such a way as to not be exhausted or degraded or are not diminished their usefulness for future generations[...]it also involves the exhaustion of non-renewable energy resources at a rate that ensures a great probability of the transition to renewable energy resources".

At european level it is necessary to adopt standard methods for managing air pollution, water management, soil to minimise impact on the environment and the sustainable use of resources, the main

methods being the location of factories in places which minimizes the environmental impact of urban settlements and installations for waste water treatment, installation of pollution control equipment in a given period of time, or further measures to protect the environment.

In this sense, the work aims to capture the harmful effects of pollution in terms protection and sustainable development environment policies do not perform the tasks well enough, and the importance of identifying the real information of environmental problems (the quality and quantity of drinking water, surface water pollution, dangers posed by disasters/natural and anthropogenic phenomena, landslides, excess moisture, soil degradation, etc.) in order to combat them, given the fact that in the literature there is no a clear picture about the strategies of development and environmental protection, especially in Romania.

Therefore, one of the main objectives of the paper is to provide an overview of the theoretical and practical aspects of the problem of sustainable development in Romania, as well as the measures necessary for its protection.

This paper comprises five sections. In the first chapter I surprised a few theoretical aspects related to the characteristics of the natural environment, as well as some approaches in specialist literature, as then during the following two chapters to talk about economic reality in Romania and about the ability of some strategies of sustainable development on amount of time horizon of 2013-2020. In the penultimate chapter, we examined a concrete case, preparing a report on the work of Environmental Protection Agencies Botosani and which represents an element of strategic guidance on long-term efforts to resolve an environmental development and protection issue. The paper ends by presenting the conclusions and future research directions.

2. ELEMENTS OF STRATEGY – SUSTAINABLE DEVELOPMENT AND THE HORIZON OF 2013-2030

In the interests of progress and growth at all costs, man has forgotten, often that is part of the natural system, sometimes intervening over the carrying capacity. Thus, the imbalances has appeared, whose effects already feel, global concerns being increasingly emphasized in the direction of counteracting those effects.

Sustainable development can be seen as an adaptation to society and the economy at large problems that humanity faces today: climate change, water crisis, drought, desertification, depletion of resources, waste, biodiversity loss, population growth, poverty, migration, etc. To warning, counteract and eliminate their repercussions and to ensure that economic development, social progress and human development are necessary a initiating and supporting specific actions, synthesized in measurable and

specific objectives, what is the subject of National Strategies for sustainable development. In order for the society to be able to adapt national strategies have been developed, with targets will result in actions that will resolve future problems our society faces today.

As of November 2008, Romania has a new National Strategy for sustainable development, the defining element of which is the connection of our country to a new philosophy of development, the European Union's own, and widely shared throughout the world to that of sustainable development.

Economic growth, as it was perceived and made it worth, affects the environment and actions, programs and meetings at the national and international level that have taken place since, in particular the 1992 World Summit in Rio de Janeiro - *United Nations Conference on Environment and Development* have been trying to limit the negative effects.

Agenda 21 is an action programme for the 21st century oriented by sustainable development. It was adopted by the States signatories to the Rio Declaration of June 1992. The main lines of action are: the fight against poverty and social exclusion, the production of sustainable goods and services, environment protection.

In 2002 took place the United Nations Summit on Sustainable Development, held in Johannesburg had as main outcomes:

- The Johannesburg Declaration on sustainable development;
- Implementation plan of the World Summit on sustainable development

The Johannesburg Summit reaffirmed sustainable development as a central element of the international agenda and gave a new boost to the practical implementation of global measures to fight against poverty and for the environment protection.

Has developed an understanding of the sustainable development's concept, in particular by highlighting the main links between poverty, environment and use of natural resources.

Through the Johannesburg Declaration was assumed the collective responsibility for the progress and development of the three pillars of sustainable development: economic development, social development, environmental protection at the local, national, regional and global level.

The defining element of this National Strategy is fully connected to a new philosophy of development, the European Union's own and widely shared throughout the world-that of sustainable development.

It starts from the finding that, at the end of the first decade of the 21st century, after a prolonged and traumatic transition to pluralistic democracy and a market economy, Romania still has considerable gaps still to be recovered from the other Member States of the European Union, together with the

learning and transposition in practice of the principles and practices of sustainable development in the context of globalization. With all the progress made in recent years, it is a reality that Romania still has an economy based on the intensive use of resources, a society and an administration still in search of a unified vision and a natural capital affected the risk of deterioration that can become irreversible.

This strategy sets out targets for the transition, in a reasonable time frame and realistic, the development model for generating high added-value, propelled by interest in knowledge and innovation, aimed at continuous improvement of the quality of life of people and the relations between them in harmony with the natural environment.

As a general guideline, the work aimed at achieving the following strategic objectives on short, medium and long-term:

Horizon of 2013: The incorporation of the principles and practices of sustainable development in all programmes and policies of the Romania`s Government as a EU Member State.

Horizon of 2020: Reaching the current average level of the European Union`s countries at the main indicators of sustainable development.

Horizon of 2030: Romania's significant near to the average of that year of EU member countries from the point of view of sustainable development indicators.

These strategic objectives will ensure at the medium and long term, a high economic growth and, consequently, a significant reduction of the economic and social gaps between Romania and the other Member States of the EU. Through synthetic indicator through which measure the process of real convergence, i.e. a per capita gross domestic product (GDP/place), the purchasing power standard (PCS), the implementation of the strategy creates the conditions that GDP/place expressed in PCS exceed, in 2013, half of the EU average in that time, to come closer to 80% of the EU average in the year 2020 and to be slightly higher than the average level in the year 2030.

Shall ensure the fulfilment of the obligations assumed by Romania as a Member State of the European Union pursuant to the Treaty of accession and the effective implementation of the principles and objectives of the Lisbon Strategy and the renewed Sustainable Development Strategy of the EU.

The objectives arising from the strategies, plans and national programmes of development by Marinescu (2003), the Strategy sets out the main directions for action for appropriating and applying the principles of sustainable development in the next period:

- Rational Correlation of development objectives, including investment programmes in cross-sectoral profile and regionally, with potential and the ability to support natural capital.

- The accelerated modernization of education and training systems and public health, taking into account the unfavourable demographic developments and their impact on the labour market.

- The use of best available technology, in terms of ecological, economical and investment decisions of public funds at national, regional and local, and the stimulation of such decision on the part of private capital; the introduction of criteria for eco-effective in all production activities or services.

- Predict the effects of climate change and the development of adaptation solutions over the long term, and the plans for measures of comes closest cross-sectoral, including portfolios of alternative solutions for crisis situations resulting from natural or human-induced phenomena.

- The need to identify additional sources of funding, in terms of sustainability, for the development of major projects and programmes, in particular in the fields of infrastructure, energy, environmental protection, food safety, education, health and social services.

- Insurance security and safety food through harnessing the comparative advantages of Romania in respect of the development of agricultural production, including organic products. Correlation of quantitative and qualitative growth of agricultural production to ensure food for people and animals with the requirements to increase the production of biofuels without compromising the requirements relating to the maintenance and enhancement of soil fertility, biodiversity and protection of the environment.

- Protecting and exploiting the cultural and natural heritage. Connection to European rules and standards relating to the quality of life to be accompanied by revitalization, in modernity, of traditional modes of live, especially in mountain areas and wet ones.

The objectives aims the maintenance, consolidation, expansion and adaptation of the structural pattern and functional capacity of natural capital as the foundation for maintaining and enhancing its capacity to support social development pressure and economic growth and the predictable impact of climate change.

3. REALITY IN ROMANIA'S DEVELOPMENT

Newly industrialized countries are countries with a large industrial sector, developing in parallel with a traditional sector considerably. A significant proportion of the population still lives in rural areas and work in traditional economic sectors based on agriculture. In the cities, modern industry, with a work force of elite workers category, is sitting next to a considerable informal sector, ranging from the

street complex up to small workshops and factories. The average level of income per capita is much lower than in the developed industrial countries, and the standard of living is usually much lower, there is a middle class, a little big, but growing. Also lacks social protection in developed countries. Most of these countries, except Brazil, tend to rely heavily on foreign trade.

The main difficulties that can arise are:

- *overvalued exchange rates*, due to excessive the guidelines inside and excessive reliance on foreign capital;
- *fragile private sectors*, which leads to a series of economic effects such as encouraging private capital drain in periods of great difficulty, determines the investment of the private sector to move in particular projects with rapid recovery (due to uncertainty over the long-term perspective of business), and creates the possibility of a bigger turmoil has promoted policy in connection with the business;
- *rapid economic growth* based largely on financing through credits (internal and external) simultaneously with a insufficient development of financial institutions. This means that, where recorded a slowdown in export growth or a recession, they could increase quickly transforming into a severe external debt or in a domestic financial crisis;
- *vulnerability to world conditions* such as increased international trade, protectionist trends and interest rates.

The economic development of a country takes place in two stages, namely:

- a) it is necessary to shift from poverty to a decent standard of living in a decentralised way. It requires that each family to make money income to cover the needs of food, clothing, housing, health care, education without regard to origin, culture, gender, race, etc. These needs will depend on size of course, man-to-man, so the level of development of the society, but also by the level of development of the individual.
- b) it is necessary to switch to a complement of standard of living. This involves meeting other needs, in the field of culture, education, transportation, Informatics, health services, tourism, sports, leisure, repairs, etc., as well as improving the social climate, political, labor, family.

The first and maybe the most important objective of the economic development of Romania is to organize a mass production of consumer goods and infrastructure, which ensures raising the living standards of all the inhabitants of the country.

Thus the desired economic and social system in Romania is considering:

- the existence of a dominant, powerful private properties that generate a strong private capital that can be invested in competitive goods-producing technologies on any market that will bring profits for entrepreneurs, income for the workforce and revenue to the State budget.

- free enterprise and competition in a free market, they will resist what businesses will have managerial skills, and the ability of the scientific knowledge needed to become more competitive through the quality of their work and the goods or services that it creates. Development does not imply an equal society members but rather their differentiation on grounds of competence.

Achievement of the objectives involve: gaining the endorsement of the majority of citizens; obtaining external support in order to achieve these objectives; improvement of the situation in the world economic circuit; alleviating social discrepancies.

Politics has a decisive role in achieving these desiderata that is why it is necessary: ensuring priority treatment for science, health, and advanced research; increasing the use of economic resources; promoting adequate economic policies in order to achieve sustained and sustainable economic growth; the creation of a system which ensures the effectiveness of the economic, social and ecological maximum of all activities in the economy.

As regards agriculture, Romania could receive substantial income from the export of agricultural products, due to natural conditions with which it is equipped. A short distance after the retail trade are agriculture and the food industry are closely related. Agricultural production has started to decline steadily (with some exceptions) after 1990, and vegetable production, and of the main causes underlying the low agricultural yields are: i) lack the facilities and modern technologies; ii) reliance on natural conditions; iii) poor infrastructure development.

Among the indicators that characterise Romania's economic growth in the years after the Revolution and not only it can find *the inflation*. Inflation is a serious imbalance in the economy of any country, represented by a general increase in prices and the simultaneous decrease of the purchasing power of the national currency. Inflation in Romania had an increasing trend in the early 1990s after the effort failed to stabilize her, that after the year 2000 to fall. Inflation in Romania is on a declining trend.

Negative oscillations have been before and the increase/decrease it was due mainly to the following factors: the increase in administered prices at a rate higher than that projected, mainly on account of higher rent set by the unanticipated local governments; volatile prices of some food products (vegetables and fruits); the international oil price trends, reflected in an increase in fuel prices, partly offset by the appreciation of the *lion*, the Romania's national currency.

End of 2011 or beginning of 2012 rather find Romania in a delicate economic condition with street demonstrations which are due to poor management of funds from the economy, not all signs of recovery, with companies that restrict the activity or closed their doors, as well as with salaries, pensions.

I consider that the current state of the economy is not only due to the poor management of 2000 onwards, but also measures taken over the years immediately after the Revolution, as follows:

- *through its activities it has polluted the environment and people's health was affected*

The environment is the support and the fountain of life. To pollute and destroy is tantamount to undermining the human existence. Therefore, the World Health Organization concluded that "maintaining health and well-being require a conducive and harmonious environment in which all physical factors, psychological, social and aesthetic have their well-defined place. The environment will be, in this situation, to be treated as a resource in order to improve the living conditions and well-being".

- *it coached and encouraged waste and has exhausted its known reserves, without taking into account of renewable or non-renewable nature of their*

Waste of resources on which the classic type of economic growth and development has led to severe criticism of the subject on the part of scientists, international organizations with direct implications on human health, in particular.

- *can speak and the gap between third world compared to that of the rich*

The analysts of sustainable development issue, could not put aside the third world problems. On the contrary, they were and are concerned about one of the biggest paradoxes they experience the world today-the great disparity between the rich and the poor.

Romania to fulfill its commitments, leading to a growing confidence in the Romanian economy, should aim at addressing the following issues: strengthening the financial and banking system, as well as capital market development, simplification of the tax system, the revival of investment, privatization.

It should produce fundamental changes in the internal structure of the economy, in the forms of management, in economic behaviour and attitudes in people. Privatization is not an end in itself, but a necessary process of restructuring the company's background, a means of increasing the efficiency of resource use and to stimulate competition and economic performance.

In anticipation of the coming years, the private sector will hold a share of 75-80% in the gross domestic product, while the public sector will have to adapt to the competitive system. This process must be conducted in strict compliance with the law and with complete transparency.

4. ENVIRONMENTAL PROTECTION AGENCY, BOTOȘANI-INSTITUTIONAL COMPONENT OF SUSTAINABLE DEVELOPMENT (CASE STUDY)

Botoșani county is located in geographically in the north-eastern part of Romania, having as neighbors Ukraine, Republic of Moldova, respectively. Being between the rivers Siret and Prut River to the West, forming the border with the Republic of Moldova, Romania, Botoșani county borders with just two counties of Moldova, namely: Suceava County to the West, and to the South with the Iasi County. Including within the boundaries of its territory of 4965 km² belonging to the northern part of the Moldavian Plateau, Botoșani County ranks 29th, share in total national territory was 2.1%.

Botosani relief belong to two major units of the Moldavian Plateau: Plateau of Suceava in the West (about 21%) and Moldavian Plain in the rest of the territory (about 79%). Overall, the relief takes the form of high peaks and hills in the West and Northwest with average altitudes around 400 m and in the form of a plain bottom with average altitude of 150 m in the rest.

4.1. Organizational structure

Environmental protection agency Botoșani was founded on 1 august 1990 and is a public institution with legal personality, subordinated to the national agency to fulfil its responsibilities to the county level, for the Environment Protection, with the status of a decentralized public service, financed from the state budget.

4.2. The main pollutants of environmental factors (air pollution, soil and water)

4.2.1. Air pollution

Environmental protection agency (EPA) Botosani oversees air quality through a structured monitoring network: gaseous pollutants, by 4 points in the workflow, in the Botosani (EPA, SC ELECTROCONTACT and WWTP) and in the frontier zone - Darabani (weather station); particulate matter in two points in 24-hour stream located in the city of Botoșani (EPA Botoșani and SC STORSACK RO. Botosani Ltd); sedimentable powders in the 5 points in the monthly flow located throughout the County, Botoșani (EPA Botoșani, weather station Botosani, Waste water treatment plant Darbani, Săveni cleaning station, Waste water treatment plant Bucecea) quality of rainfall in 3 points, one of which in the border area with the Republic of Ukraine (EPA Botoșani Treatment station Dorohoi, weather station Darabani); nitrogen oxides, at a single point (Darabani), with "automatically Monitor for NO_x".

Among the atmospheric pollutants are:

- *sulphur dioxide* is a colourless, non-flammable, bitter with a sharp odour that irritates the eyes and respiratory tract.
- *ozone* gas very highly reactive oxidant, strong odor. High concentrations of ozone can cause reduced respiratory function.
- *carbon monoxide* is a colourless, odourless, tasteless, is formed mainly by incomplete combustion of fossil fuels; in high concentrations is lethal (at concentrations of approximately 100 mg/m³) by reducing transport capacity of oxygen in the blood, with consequences on the respiratory system and the cardiovascular system.
- *nitrogen dioxide*, very reactive gas, no color or odor.

Exposure to high concentrations can be fatal, and at low concentrations affect lung tissue. The population exposed to this type of pollutants may have difficulty breathing, respiratory irritations, dysfunction of the lungs.

For the beginning of the year there were no reported values of the indices to pick up signs of concern:

Table 1: Indices values (<http://www.apmbotosani.ro/>)

No. Crt.	Air pollutant	Botoșani		Suceava	
		hour 01 ⁰⁰	hour 16 ⁰⁰	hour 01 ⁰⁰	hour 16 ⁰⁰
1	Nitrogen dioxide	21,01	11.59	293,74	1,57
2	Sulphur dioxide	3,66	3,31	0,40	3,07
3	Ozone	28,63	73,19	35,19	78,75

Currently is running a project financed by the European Union for the prevention of natural disasters caused by floods and air pollution.

This project represents a comprehensive network to monitor air quality for 34 EPA in the country (ex: Botoșani has an EPA and an urban station; Suceava station has another one, an industrial urban 1 and a SMEP; Iasi, an EPA; Bacau an EPA, an urban station, two industrial stations 1 and 2). Every EPA is to monitor and operate with the control system of air quality including the individual control of each workstation which instruments belonging to them.

The complete network of this project consists in 94 stations, of which 82 are equipped with meteorological sensors. Data are transmitted from the workstation to the EPA headquarters to which they belong and the EPA data, 34 are transmitted to Headquarters in Bucharest, where they are processed, verified and released via the Internet.

4.2.2. Soil pollution

Due to repeated drought and irrational use of arable farm land and soil quality has decreased, thus, in Botosani county, meet the following unfavourable aspects:

✓ Nitrogen is the main nutrition elements involved in the processes of growth and development of plants. Poor nitrogen supply was found on 25% of the total agricultural area. Geomorphological conditions of Botosani, with a significant proportion of the land in the slope, erosion affects significantly so long as organic and nitrogen dynamics of mineral forms of nitrogen in the soil.

✓ Landslides affecting 15% of the total agricultural area, of which the assets of 9.1%. Extension of landslides in recent years, is due to the lack of a programme of improvements to land, through the levelling, drainage works, or afforestation schemes are designed to protect these lands.

✓ Soil acidity can be caused or worsened by inadequate agricultural technologies, as it is every year use of high doses of fertilizers with physiological acid reaction. Acid reaction with soils occupy large areas in the Western and North-western part of the county. Strong-moderate acidic soils can be found on the 5.9% of total agricultural area. There are a total of 11 municipalities in which the share of acidic soils is much higher than the average county (e.g. Dersca, vf. Field, Corni, Vorona, Curtești, Suharău, Cristinești).

✓ Alkaline soils (pH greater than 8.4) totaled 4.7 percent of the area studied. In some municipalities, the share of alcalizate soil is higher than the county average (over 10% alcalizate soils): Vlăsinești, Ștefănești, Dângeni, Spear, Coțușca, Gorbănești.

✓ Excess moisture from the ground affect the nature of agricultural soils 12,6%. Drainage and drainage works executed prior to 1989 on a portion of these lands no longer work only partially, or are completely degraded.

✓ In terms of ensuring agricultural soils with humus, data analysis shows that 30% of these are weak and very poorly provided with hummus. The most important cause of low humus content consists of moderate to strong erosion or excessive if it is found on the slopes with inclination.

✓ Very weak and feeble assurance with mobile phosphorus is found on the 44% of the area under study. Agricultural research have established that the losses of harvest in the case of weak supply

and especially very poor soils with phosphorus. As a result, this deficiency in phosphorus is an important limiting factor for agricultural production in Botoșani County.

✓ Ensuring agricultural soils with potassium is good throughout the County, only 7% of agricultural soils are poorly stocked and medium.

Forests

At present, forests are threatened by a drop of control degradation and transformation to other areas considered. An expansion of agriculture, excessive grazing, cutting an uncontrolled, combating of fires and damage due to air pollution.

Forest damage and the loss of their leading to soil erosion, reduced biological diversity and wild life habitats, degradation of the catchment areas and reduce the amount of firewood, timber and other goods necessary for human development. They reduce the number of trees that can retain carbon dioxide, which is a greenhouse gas.

Table 2: Forestry (<http://www.apmbotosani.ro/>)

County	Total area (ha)	Background forest (ha)	% of total area
Botoșani	498569	54635	10,10%

Table 3: The area occupied with woods on the property categories (<http://www.apmbotosani.ro/>)

RNP	Administrative territories	Legal entities (units of worship, schools)	Individuals	TOTAL FF
45.232 ha	14 ha	508 ha	8881 ha	54.635 ha

Table 4: The area occupied with woods on the functional groups (<http://www.apmbotosani.ro/>)

Functional group	Property category				TOTAL FF
	RNP	Administrative territorial units	Legal persons	Individuals	
I	7667 ha	-	139 ha	510 ha	8316 ha
II	37565 ha	14 ha	369 ha	8371 ha	46319 ha

TOTAL	45232 ha	14 ha	508 ha	8881 ha	54635 ha
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4.2.3. Water pollution

Rivers

Botoșani county territory is limited to the eastern extremity of the Prut River, the main river Bașeu tributaries that join in the Stefanesti locality and the Jijia River, which join in the Iasi County. In turn, Jijia River tributaries the rivers and Miletin Sitna.

The Prut River basin occupies 88% of the area of the County, and 12% is occupied by the Siret River basin, located in the western part of the County. The distribution on the river basins are presented as follows:

B.H. Prut – 4382 kmp;

B.H. Siret – 603 kmp.

The hydrographic network is encoded length 2054 km.

The main sources of water from the Botosani territory are made up of the rivers Prut and Siret. Small watercourses in the County have variable flows in the spring-summer season, while their quality does not fall within the confines of that pathogenetic germ. Collections with complex existing role on these courses ensure permanent water sources, water resources of the County being supplemented by groundwater.

Lakes

On the Botosani territory there are about 150 lakes, mostly mixed fisheries, as well as sources of water supply for potabil for an important number of localities.

Bucecea Lake has a volume of 8,73 mil mc and ensure the supply of drinking water for cities of Botosani and Dorohoi and areas adjacent. It also ensures the transit of the surplus period flows bypass the Sitna-Siret (in accumulating Cătămărăști) to compensate for the shortage of water in the Jijia River basin.

Lake Cliff, with a total volume of 1285 mil mc and a volume of 450 million cubic meters, providing drinking-water supply for villages and Ștefănești and Trușești, in perspective, Santa and Dângeni, but also produces electricity from an installed power of 65 mil kWh.

Negreni Lake, situated on the river Negreni locality Negreni, ensure safe drinking water for the city of Săveni installed at a flow rate of 43 l/s. Net volume is 10,30 mil mc. We can remember and other lakes with fish use, such as: Iezer, Cătămărăști, White Horse, Mileanca, Dracșani.

Table 5: Water resources accumulated in the Botoșani county (Direction Of The Romanian Waters "Prut" Iasi)

The name lake reservoir	Total volume (mii. mc)	Useful volume (mil. mc)
Stânca - Costești	1.400.000	450.000
Cal -Alb	16.280	4.950
Negreni	25.600	8.800
Hănești	6.400	4.200
Mileanca	14.350	5.100
Iezer	14.100	3.600
Căt ămărăști	17.950	7.520
Dracșani	10.710	8.210

A special situation is the rural areas from which it is made water-supply system, but there is no sewage system-purge. In these localities, wastewater-of all kinds-are discharged into the natural receptors diffuse without prior treatment.

Most of the urban waste water treatment plants have been completed in more than 25 years, they are in an advanced degree of physical and moral wear and tear (especially), also having the ability to purge debts increased by insufficient waste water resulting from the development of settlements or economic targets connected to the sewage system and, in general, does not have the technological profile required for cleaning the whole range of pollutants discharged into the sewer pipe network.

Most municipal wastewater treatment stations not carried out qualitative parameters regulated, spilling into the receiving water flow rates relatively high purified water insufficiently. Together with municipal waste waters, on the quality of water courses have a special role is busy by industrial pollution sources.

Thanks to loads of pollutants in a variety (suspensions, organic substances, petroleum products, detergents, ammonia, metal ions, azotiți, etc.) of neepurate or insufficient wastewater purified water impacts the surface is appreciably and manifests itself through negative effects on aquatic biotopes and biogenesis through adjustments to physical, chemical and bacteriological causes them and determines in most situations change the quality of the receiver class or increasing values of some indicators within the same category of quality.

4.3. Proposals for sustainable development

The national strategy for *Sustainable Development* at horizon years 2013-2020-2030, renewed in 2006 (*2013-organic incorporation of the principles and practices of sustainable development into the programmes and policies of the Government of Romania*).

Since 2009 began the process of re-evaluation of programmatic documents, strategies and national programmes, sectoral and regional authorities to make them agree with the principles and practices of sustainable development and with the evolution of EU regulations.

4.4. Local action plan for the environment (LAPE)

LAPE represents short-term strategy, medium and long term in order to solve environmental problems in the county's approach to sustainable development principles and is fully in line with the National Action Plan for Environmental Protection and concerns mainly: supply of drinking water to the population, the soil condition, land fund, biodiversity, air quality in the urban environment, waste and their impact on the environment, etc.

4.4.1. Supply of drinking water to the population

In the Botoșani County supply of drinking water to the population is through centralized water distribution in 68 villages, 4 of these being urban townships, and the measures to be taken for improving them shall take into account:

Measures: i) rehabilitating, expanding the sewerage systems in urban environments and water supply in the other towns in the County; ii) capacity expansion, modernization/refurbishment of existing treatment stations and construction of new stations in rural space; iii) enforcement of defenses against flooding; iv) improving the system for monitoring water quality by identifying and attracting new sources of funding;

4.4.2. Soil condition

Due to repeated drought and irrational use of arable farm land and soil quality has declined, favoring emergence: landslides, the erosion of it, excess moisture or acidity excess etc.

Measures: i) the elimination of illegal waste deposits; ii) provision of necessary facilities for storage in accordance with the law of household waste (organic deposits area achievement of household waste and the related transfer stations); iii) closure of existing deposits which do not comply with E.U. standards

The Land Fund

Total county: 498.569 ha. The forests are threatened by a drop of control degradation and transformation to other mixed with an expansion of agriculture.

Measures: i) appropriate management of forests; ii) harvesting activities supervision/catching and/or purchase and marketing of the plants and animals of the wild flora and fauna; iii) elaborate and implement specific programmes for the public awareness on the need to protect and conserve the natural values of the forests and the ways of making tourism.

The biodiversity

Natural habitats are forest, meadows, and marshes, cliffs of sweet waters. Forest habitats are aggregated 57215 hectares which represents 11.5% of the County's territory, a percentage that is below the country average (27%).

Measures: i) provision of appropriate management of protected natural areas by creating administrative structure of national parks and the award in the custody of natural resources; ii) enumeration of the species of fauna and flora of Community interest, as well as habitats of Community interest; inventory of special areas of conservation and special protection areas the areas; iii) ecological reconstruction of ecosystems and habitats damaged etc.

4.4.3. Air quality in urban areas

In the absence of industries with high pollution, the main factors for Botoșani County polluters could be: road traffic, heating systems and living spaces, street sanitation insufficient. Green spaces and recreation can be the antidote for a cleaner environment.

Measures: i) introducing clean technology by businesses, the installation of effective systems of pollution atmosphere retention; ii) support for carrying out bypass roads of municipalities and towns and promoting alternative transportation systems; iii) transposition of E.U. requirements and implementation of the legislative.

4.4.4. Waste and their impact on the environment

In the Botoșani county the municipal *waste* are not collected selectively in order to exploit recyclables (paper, cardboard, glass, metals, plastics) than in a very small extent. Landfill can contaminate soil and groundwater through leaching of toxic substances contained therein.

Household residues have a significant impact on the population and being important vectors in the spread of infection.

Measures: i) increasing the rate of collection of waste both in urban and in rural areas; ii) development of the system of separate collection of waste through retrofitting; iii) proper management of waste; iv) ecological reconstruction of areas that have been affected by the storage of waste.

5. CONCLUSION

In a world in motion and transformation, registering economic growth, as well as episodes of financial collapse (the current financial crisis), the existence of policies and tools to help control pollution and adverse effects, comes as a necessity in order to meet the conditions imposed by certain environmental standards.

The large amount of foreign investment and increased foreign reserves allowed the cover in a good measure of external deficits, up to a certain point and keeping the indebtedness under the 50% level. Also notice the restriction of activity of large industrial polluters and start of the gradual replacement of them with the small and medium-sized enterprises, as well as small scale use of pesticides and fertilizers. As a result, the level of air pollution has dropped due to the closure of polluters or their modernisation.

Furthermore, the availability of external financing programs targeted directly for environmental protection and nature (LIFE, ECOLINKS, REC), as well as the creation of national environmental fund for the support and implementation of priority projects included in the national plan of action for environmental protection are some opportunities for development.

On the other hand, the low productivity of the soils in the surrounding areas of industrial targets, the disappearance of some species of plants and animals in the absence of special programmes for their protection and continued uncontrolled global deforestation with effects on air pollution, soil erosion is threatening regional development.

Romania's current situation shows weak points as well as sustainable development: pollution of surface water and groundwater as a result of uncontrolled discharges of economic agents, as well as due

to poor sewerage infrastructure development especially in rural areas, and centralised systems non-existent water supply in rural areas and in some urban areas, as well as the existence of areas of land affected by natural phenomena of degradation.

Moreover, the widening current account deficit and rising inflation make a negative contribution to the Romanian economy. The increased dependence of foreign capital, raising interest rates and depreciation of the national currency generate negative effects on people and companies that have borrowed in foreign currency. Worsening political tensions, minority Government's position and concern for new elections this year have removed politics from the continuation of reforms and strategies for recovery of macroeconomic imbalances.

As future research directions, I consider that there are various development opportunities of this paper. The analysis may be extended to a larger number of measures and strategies for environmental protection and sustainable development in Romania. Furthermore, the model can be extended to other countries facing similar situations or contrary, quite different, in order to develop a comparative analysis.

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