ASPECTS OF ENVIRONMENTAL QUALITY IN THE CONTEXT OF CLIMATE CHANGES

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Abstract
Climate changes influence both human health and the environment in which they live. Tools to anticipate and prevent influences caused by climate changes are necessary in order to face the potential threats posed by these changes. Worsening environmental conditions affect regional mobility. Climate changes modify the distribution of the environmental pollutants. The article presents the situation of air pollutant emissions in the European Union and Romania. The quality of life and health is dependent on the condition of the environment. Preventing environmental degradation is one of the environmental policies' objectives. Thus, the article presents an analysis of the costs of environmental protection for European Union Member States. A balanced economic growth can be achieved through the application of protective measures and improvement of the environment that take into account the influence of the climate changes.

Key words: *climate changes; environment; greenhouse gas emissions*

JEL Classification: *Q54, F6*

I. INTRODUCTION

Global warming recorded in recent years is believed to be caused by increasing emissions of greenhouse gases. It is assumed that human activities are the primary cause of this warming and thus increasing emissions of greenhouse gases. In this way, they become threats to human life and economic development.

The need to develop and use indicators of sustainable development is based on the approach that "you can only manage what you can measure". Developing indicators, however, requires a clear "vision" of sustainable development, and the definition of a framework for structuring these indicators. Once this framework is in place, data from existing monitoring programs, accounting systems and statistical surveys can be used to quantify the indicators. Where the data basis is missing or insufficient, new routines can be established. Through this iterative process, the conceptual work on indicators helps to focus on data collection needs.

Economic growth and employment are favored by the transition to a low carbon economy. In many cases, the realization of finished products involves consumption of oil and gas. On the territory of the European Union member countries these resources are limited. Given these issues and to ensure Europe's energy security, green economy can be the key to creating new jobs.

Changes are observed on freshwater systems, the river flows, increases the frequency and intensity of floods and droughts. Also appearing effects on human health and the falling demand for heating and cooling demand growth due to rising temperature.

In terms of temperatures caused by climate change, it appears that it can lead to uncontrolled growth. In this respect, the European Union, wants to take action to reduce greenhouse gas emissions and to counter the impact of climate change. Thus, by 2020, are set several goals climate and energy emission reduction of greenhouse gas emissions by at least 20% from 1990 levels, the 20% increase in the share of renewables in total energy consumption, improving energy efficiency for reducing the amount of primary energy consumption by 20% below estimates.

II. EMISSIONS OF POLLUTANTS

Regarding climate change, the European Commission wants to make a union of energy. Thus, the plan to increase the share of energy from renewable sources and improving energy efficiency.

According to a survey conducted by the European Commission in 2013, the fight against climate change enjoys significant support: four out of five Europeans estimated that this action and use energy more efficiently

can boost the economy and employment, and nine out of ten feel that climate change is a serious problem.

There have also been established and the climate and energy targets for 2030. These targets take into account the reduction of gas emissions greenhouse at least 40% compared with 1990 levels, a share of energy from renewable sources at least 27% and at least 27% improvement in energy efficiency.

For 2050 is expected to reduce emissions by 80-95% compared to 1990 levels.

Thus, the EU Emissions of Air Pollutants total for 2013 (in tonnes) is shown in the following figure.

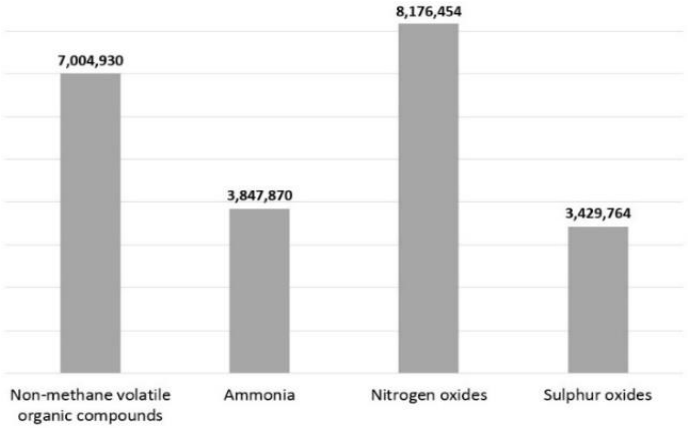

Figure 1 – The EU Emissions of Air Pollutants total for 2013 (tonnes)

It is noted that the higher emissions of nitrogen oxides are given, followed by non-methane volatile Organic Compounds.

Compared with data from the European level, in Romania total air Emissions of Pollutants is as follows:

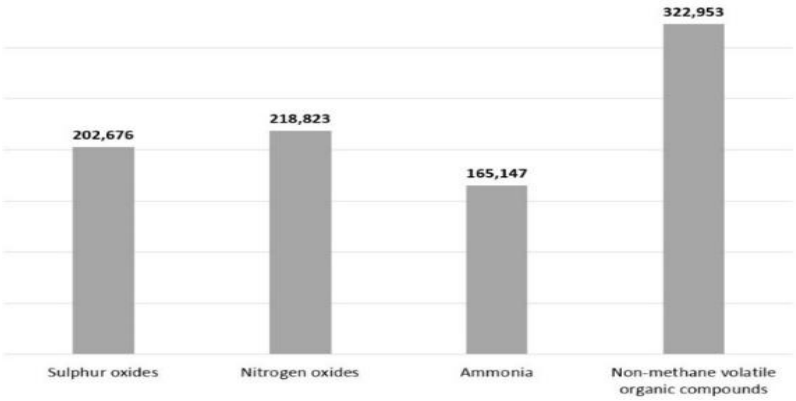

Figure 2 – Total air Emissions of Pollutants in Romania

Emissions of air Pollutants are mostly due Emissions of non-methane volatile Organic Compounds.

The comparative situation of Air Pollutants Emissions per capita, in 2013 (in kg), for Romania and the European Union, is presented in figure:

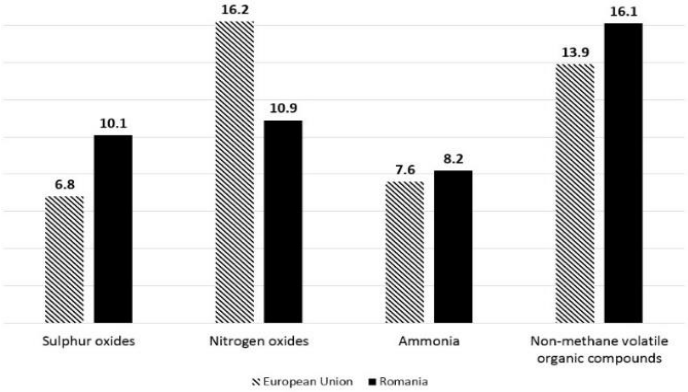

Figure 3 – The comparative situation of Air Pollutants Emissions per capita, in 2013, for Romania and the European Union (kg)

At European level, the highest air Pollutants Emissions of nitrogen oxides are due per capita (16.2 kg), followed by non-methane volatile Organic Compounds (13.9 kg).

In Romania, the highest per capita Emissions of air Pollutants are due Emissions of non-methane volatile Organic Compounds (16.1 kg), followed by nitrogen oxides (10.9 kg) and sulfur oxides (10.1 kg).

The following table presents a comparative statement for 2004 and 2013, for four pollutants, in the EU and Romania.

Table 1. Comparative statement for 2004 and 2013, for four pollutants, in the EU and Romania

	Sulphur oxides		Nitrogen oxides		Ammonia		Non-methane volatile organic compounds	
	2004	**2013**	**2004**	**2013**	**2004**	**2013**	**2004**	**2013**
European Union	8,170,414	3,429,764	12,060,005	8,176,454	4,107,314	3,847,870	9,423,421	7,004,930
Romania	550,642	202,676	319,934	218,823	191,000	165,147	309,027	322,953

For Romania, for the sulphide, values in 2013 are lower by about two thirds since 2004. The values than the values from 2013 for nitrogen are lower than the values by about a third since 2004. For ammonia, the values are lower in 2013 than in 2004 by about 14% and non methane values are higher by about 5%.

Given the increase observed for non methane, the following figure shows the variation quantity for non methane.

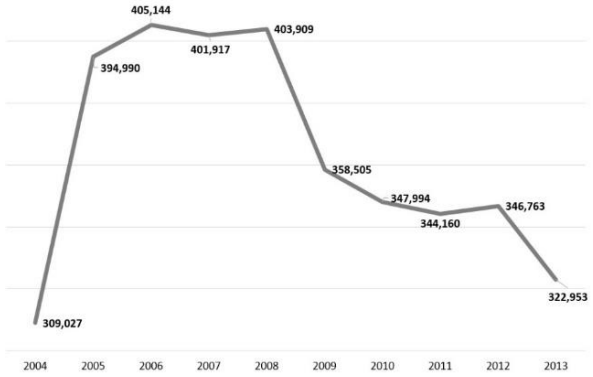

Figure 4 – The variation quantity for non methane (tons)

These values are observed increases in 2005-2008. After this period, the values are reduced, so in 2013 reached 322.953 tons are non methane emissions.

III. EXPENDITURES OF ENVIRONMENTAL PROTECTION

The environment does not exist as a sphere separate from human actions, emotions, and Needs, and Attempts to defend it in isolation from human Concerns have GIVEN the very word "environment" a connotation of naivety in Some political circles.

For EU countries, Total Environmental Protection for general government activities, in million euro, increased in 2013 compared to 2004 by approximately 33%. For Romania, the increase was approximately 383%, from EUR 134.19 million to EUR 647.62 million.

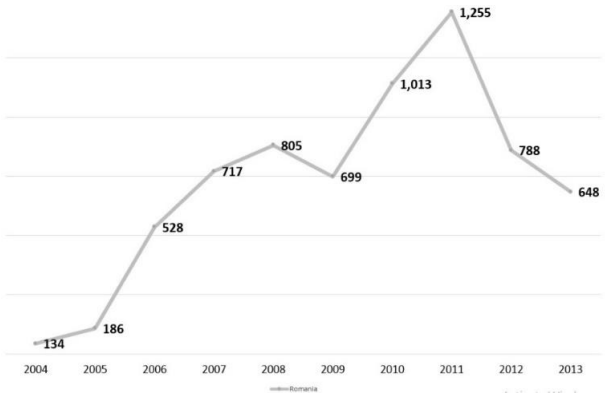

Figure 5 – The Total Environmental Protection for Romania, 2004-2013 (million euro)

There is an increase in spending by the year which triggered the economic crisis (2008). The following year (2009), expenses were lower than the previous year (2008). Then, expenses increase by 2012, to 1.255 million euros. In 2013, spending fell to a value close to half the value taken in 2011.

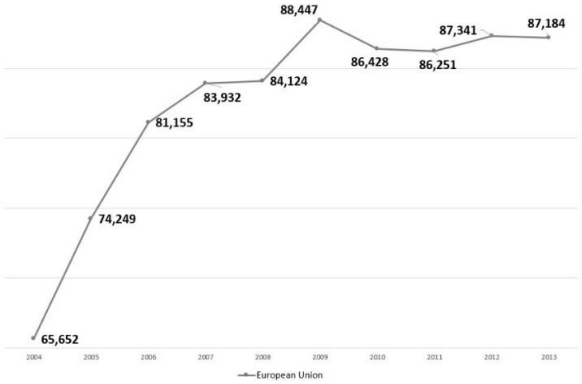

Figure 6 – The spending on the environment at European level, 2004-2013 (million euro)

At European level, spending on the environment has increased annually since 2004, by the year 2013, from 65.652 million EUR to 87.184 million EUR.

Public sector environmental protection expenditure by environmental domain, 2013, million euro, for EU countries, the situation is:

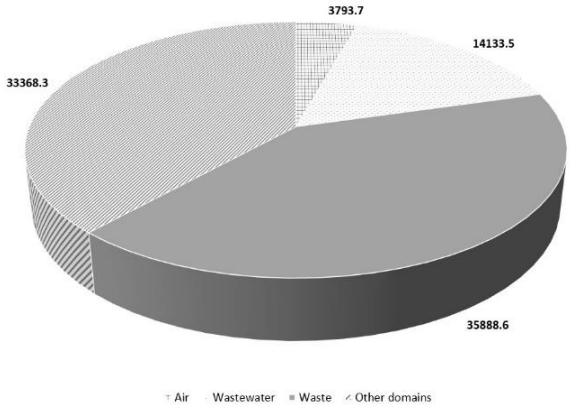

Figure 7 – The Public sector environmental protection expenditure by environmental domain, for EU countries, in 2013 (million euro)

It is noted that the EU, with the highest amounts were distributed for Waste Management (35888.6), and the lowest for the Protection of ambient air and climate (3793.7).

For Romania, the situation is:

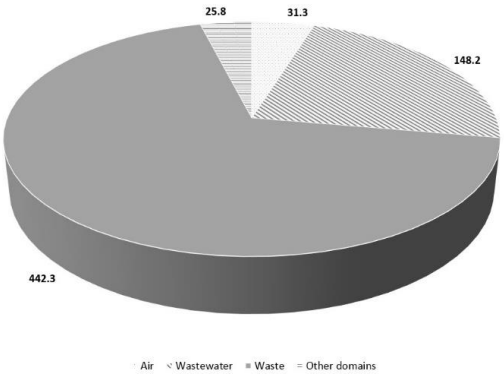

Figure 8 – The Public sector environmental protection expenditure by environmental domain, for Romania, in 2013 (million euro)

For Romania, the highest amounts were distributed for Waste Management (442.3) and lowest for other domains (25.8).

Other domains include Protection and remediation of soil, groundwater and surface water; noise and vibration abatement; protection of biodiversity and landscapes; protection against radiation; environmental research and development; other environmental protection activities.

Specialised producers' environmental protection expenditure by environmental domain, in 2013, for EU countries, the situation is:

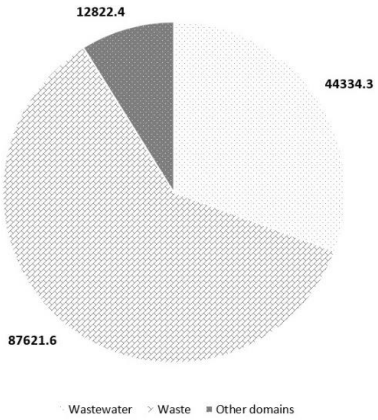

Figure 9 – The Environmental Protection Expenditure for specialised producers', for EU

Thus, the EU, the highest Environmental Protection Expenditure for specialised producers' were in Waste Management (87621.6), and lowest for other domains (12822.4). For Romania, the situation is:

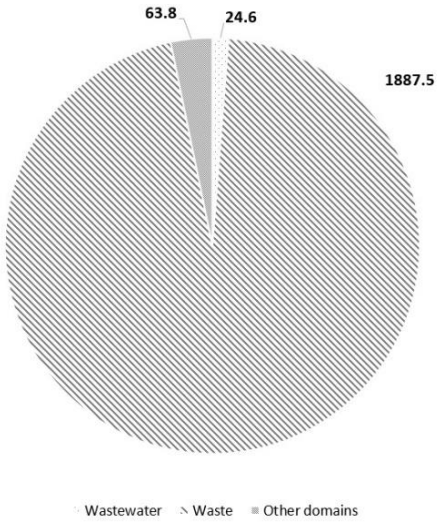

Figure 10 – The Environmental Protection Expenditure for specialised producers', for Romania

For Romania, the highest Environmental Protection Expenditure for Specialised Producers' were in Waste Management (1887.5), and lowest for Wastewater Management (24.6).

Industrial environmental protection expenditure by environmental domain, in 2013 (million EUR), is show in table:

Table 2. Industrial environmental protection expenditure by environmental domain, in 2013

	Protection of ambient air and climate	Wastewater management	Waste management	Other domains
European Union	13702,4	12882,2	15035,1	10010,4
Romania	283,9	494,5	166,6	768,3

At European level, the highest costs were for waste, followed by air.

For Romania, the highest costs were for other domains, followed by wastewater.

Percentage of gross domestic product (GDP) of environmental protection expenditure for general government is:

Table 3. Percentage of GDP of environmental protection expenditure

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
European Union	0,62	0,67	0,69	0,67	0,67	0,75	0,7	0,68	0,67	0,67
Romania	0,22	0,23	0,54	0,57	0,58	0,59	0,81	0,95	0,6	0,46

Small variations are observed values at EU level. In Romania, in 2004 the figure was 0.22, but reached 0.95 in 2011, while in 2013 it will have a value of 0.46.

IV. CONCLUSION

In order to adapt to climate change measures required to amend the rules in construction, building flood protection systems and developing drought-resistant crops.

The transition to a green economy, sustainable, low-carbon, can contribute to economic growth and Europe's emergence from the economic crisis.

The post-2015 goals should explain sustainable development and highlight the priorities for which a global effort and global solidarity adds value. They can draw attention to neglected issues.

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