

## **Environmental Protection. A Debate on Economic Aspects**

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**Abstract** – The concept of sustainable development has emerged to correlate the need to continue increasing the level of human and increasingly fragile “health” level of environment. At the industrial level, things have moved more quickly. Thus, many companies use waste as fuel, and in some localities, they are trying to implement systems for heating cottages on the combustion of waste. They are first to have acknowledged the eco-economic importance of recovery and reuse waste. Researchers draw attention to the conflict between industrial civilization and environment and mention two aspects: the tendency of depletion of natural energy resources, raw materials and food or renewable consumption on a pace above their capacity of regeneration and physical damage and pollution of the environment: water, air and land. All efforts for avoiding pollution or to protect the remaining resources quantify the money spent by the private and public sector. There should be a directly relationship between expenditure and the environment “health” state. The involvement tendency of increasingly amounts for environmental protection should create cleaner and less polluted environment.

**Keywords:** Sustainable development, expenditure, environmental protection, cost, investment

### I. INTRODUCTION - SUSTAINABLE DEVELOPMENT AND THE ENVIRONMENTAL PROTECTION EXPENDITURE

In the present time, we assist to a great intensification of the production and services activities to enhance life quality, as a demand of the increasing population. These have led to an intensive industrial exploitation of resources and continual environmental degradation. Sustainable development is a concept that aims and tries to find a stable theoretical framework for taking decisions in any situation in which there is a man / environment report type. It is known that sustainable development was originally meant to be a solution to the ecological crisis caused by intense industrial exploitation of resources and continual environmental degradation and primarily seeks to preserve the environment quality (Holden et al., 2014; Broman & Robèrt, 2017).

In 1972, the Conference on Environment held in Stockholm placed seriously for the first time the problem of damaged environment after human activities, which endanger the future of mankind itself. In 1983, World Commission on Environment and Development (WCED) begins its work, led by Gro Brundtland, after a resolution adopted by the United Nations General Assembly. In 1986, a year after the catastrophe at Chernobyl, appeared the so-called Brundtland Report, of WCED, entitled “Our Common Future” that gave the most quoted definition of sustainable development: “Sustainable development is the one that follows the present needs without compromising the ability of future generations to meet their needs”. At the same time, the report admitted that economic development could not be stopped, but that strategies should be changed so that they match the ecological limits offered by the environment and the planet resources (Borowy, 2013; Broman & Robèrt, 2017).

The concept of sustainable development was imposed in the summer of 1992, after the Conference on Environment and Development of “Earth Summit”, organized by the United Nations in Rio de Janeiro. During this conference there has been discussions related to the fact that human activities are dependent on the environment and resources. After the meeting, there were adopted several conventions relating to climate changes (reducing emissions of methane and carbon dioxide), biological diversity (species conservation) and halting the massive deforestation. Periodical meetings are carried out to see the effects of programs protecting the environment and to find new solutions to problems that have been omitted, therefore programs and strategies are developed (Broman & Robèrt, 2017).

At the national level, Romanian Government approved the National Strategy for Sustainable Development for a two-step period 2013-2020-2030 (National Strategy for Sustainable Development of Romania Horizons 2013-2020-2030). The document follows methodological prescriptions of the European Commission and is a joint project of the executive,

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through the Ministry of Environment and Sustainable Development, and the United Nations Development Programme, through the National Center for Sustainable Development. National Strategy of Romania in the field is based on the European Union Strategy for Sustainable Development and is intended as a catalyst for those who develop public policy. It has as a purpose the changing of behavior in European society and in Romanian society and the active involvement of decision makers, public and private, and citizens in developing, implementing and monitoring the objectives of sustainable development.

Among the four key objectives of European sustainable development strategy is the environment protection, with measures to enable dissociation of economic growth by the negative impact on the environment. Sustainable development strategy and the objectives of protecting the environment is achieved through substantial efforts. These efforts made by public and private authorities are materialized in the total expenditure at the national level. These include

investments and current internal expenditure (costs made by the staff of the unit). Of the total expenditures are excluded the external current expenditures, which represent expenses to purchase the service of environmental protection from third parties and the payable fees with environment title (aligned with the statements of (Broman & Robèrt, 2017; Thacker et al., 2019; Schroeder et al., 2019).

## II. ANALYSIS OF DEVELOPMENT EFFORTS TO PROTECT THE ENVIRONMENT

### A. A brief analysis of the investments and expenditures for environment protection in Romania

The environment should be protected by all persons of a mass. But the public administration and specialized producers should be forced to protect and to impose a conduct in the environment field. Thus, in Tables 1, 2 and 3 can be seen the efforts made by them.

Table 1. Expenses for environmental protection in 2018 (kLei)

Sector	Total expenditures	From which			
		Investments	Current expenses		Transfer
			intern	extern	
<b>Unspecialized manufacturers</b>	<b>6,953,322</b>	<b>1,657,409</b>	<b>1,947,580</b>	<b>3,348,333</b>	-
Silviculture, forest exploitation and annex services	270,720	2,587	135,284	132,849	-
Extracting industry	1,569,569	855,702	458,478	255,389	-
Manufacturing industry	1,367,959	123,934	504,379	739,646	-
Production and supply of electricity and heat, gas and hot water	2,195,952	254,361	62,174	1,879,417	-
Water capture, treatment and distribution	1,115,525	261,596	700,051	153,878	-
Constructions	144,852	11,149	49,966	83,737	-
Transport	259,281	145,462	17,161	96,658	-
Other activities*	29,464	2,618	20,087	6,759	-
<b>Specialized manufacturers</b>	<b>6,732,430</b>	<b>400,913</b>	<b>4,833,490</b>	<b>1,498,027</b>	-
<b>Public administration</b>	<b>7,180,500</b>	<b>1,434,900</b>	<b>1,147,962</b>	<b>1,356,038</b>	<b>3,241,600</b>

\* Architectural and engineering activities; technical testing and analysis activities, research and development, other professional, scientific and technical activities

Source: National Institute of Statistics, [http://www.insse.ro/cms/sites/default/files/com\\_presa/com\\_pdf/prot\\_mediu2018r.pdf](http://www.insse.ro/cms/sites/default/files/com_presa/com_pdf/prot_mediu2018r.pdf)

Table 2. Investments for environmental protection by environmental areas and producer categories in 2018 (kLei)

Environmental domains	Total	Unspecialized manufacturers	Specialized manufacturers	Public administration
Air protection	907,162	895,974	3,454	7,734
Water protection	1,398,758	298,423	9,435	1,090,900
Waste management	767,975	90,479	386,796	290,700
Soil and groundwater protection	177,767	173,882	62,00	3,823
Protection of natural resources and biodiversity conservation	13,217	13,105	12,00	100,00
Other environmental areas *	228,343	185,546	1,154	41,643

\*) Other environmental areas = Noise and vibration reduction + radiation protection + Environmental research and development + other environmental activities

Source: National Institute of Statistics, [http://www.insse.ro/cms/sites/default/files/com\\_presa/com\\_pdf/prot\\_mediu2018r.pdf](http://www.insse.ro/cms/sites/default/files/com_presa/com_pdf/prot_mediu2018r.pdf)

Table 3. Expenditure on environmental protection by environmental areas and categories of producers at national level in 2018 (kLei)

Environmental domains	Total	Unspecialized manufacturers	Specialized manufacturers	Public administration
Air protection	2,385,265	1,083,325	130,170	1,171,770
Wastewater management	2,392,460	1,056,911	77,580	1,257,969
Waste management	6,463,040	404,714	5,010,188	1,048,138
Soil and groundwater protection	502,783	408,108	3,941	90,734
Protection of natural resources and biodiversity conservation	176,420	172,992	2,143	1,285
Other environmental areas *	2,743,886	478,939	10,381	2,254,566

\*) Other environmental areas = Noise and vibration reduction + radiation protection + Environmental research and development + other environmental activities

Source: National Institute of Statistics, [http://www.insse.ro/cms/sites/default/files/com\\_presa/com\\_pdf/prot\\_mediu2018r.pdf](http://www.insse.ro/cms/sites/default/files/com_presa/com_pdf/prot_mediu2018r.pdf)

Table 3. Environmental protection expenditure account by economics characteristics and by environmental domains (millions of Lei)

Categories of producers	Economics characteristics	Environmental domains	Years			
			2014	2015	2016	2017
General government	Total environmental protection output	Total	2416.14	2556.8	2097.7	2710.29
	Environmental protection market output	Total	256.23	53.19	91.61	151.98
	Environmental protection non-market output	Total	2159.91	2503.61	2006.09	2558.32
Specialized manufacturers	Total environmental protection output	Total	4847.28	5098.99	5069.85	5259.67
	Environmental protection market output	Total	4105.71	4267.02	4336.08	4453.46
	Environmental protection non-market output	Total	741.57	831.97	733.76	806.21
Nonspecialized manufacturers secondary environmental protection output	Total environmental protection output	Total	1457.76	2173.74	453.49	783.31
	Environmental protection market output	Total	1457.76	2173.74	453.49	783.31
Nonspecialized manufacturers with ancillary environmental protection output	Total environmental protection output	Total	2760.8	2898.13	3865.37	4735.54

Source: National Institute of Statistics <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>

As seen from the data presented in Table 1 the expenditures for environmental protection at national level were about 14.7 billion lei) representing about 1.6% of GDP). At national level, the highest expenditures for environmental protection were recorded in the waste field by specialized producers, representing 77.5% of the total waste expenditures. At national level, the largest investments for environmental protection were registered in the field of wastewater management in the public administration,

representing 78.0% of the total investments in the field of wastewater management.

Furthermore, the data in Table 2 show that at the national level, the share of investments of non-specialized producers accounted for 47.4% of the total investments for environmental protection, followed by those of public administration investments (41.1%) and the investments of specialized producers (11.5%). Out of the expenses for environmental protection of the non-specialized producers in the field

of “production and supply of electricity and heat, gas and hot water”, 31.6% were registered, while in the “extractive industry” sector 22.6 were realized %, and the “manufacturing industry” sector spent 19.7%.

The centralized data in Table 3 show that on environmental domains, the highest expenditures were recorded for waste management (44.1% of total expenditures for environmental protection at national level), followed by expenditures for other environmental domains (18.7%) and expenses for management wastewater and air protection with 16.3%. A general overview of the environmental protection expenditure account by economics characteristics and by environmental domains is presented in Table 4 as a dynamic analysis for the

period 2014 – 2018. In generally, at the national level there have been supported the environment protection constantly (less decreasing of the expenditures and more constant and increasing values of the analyzed indicators have been identified.

**B. Economic sustainable development indicators in Europe**

As seen in Figure 1, total general government expenditures on environment protection (for 2017, available data on Eurostat) depends on each country GDP. Countries that have expended more than the EU-28 average value are: Belgium, Czech Republic, Spain, France, Italy, Malta, the Nederland and Norway.

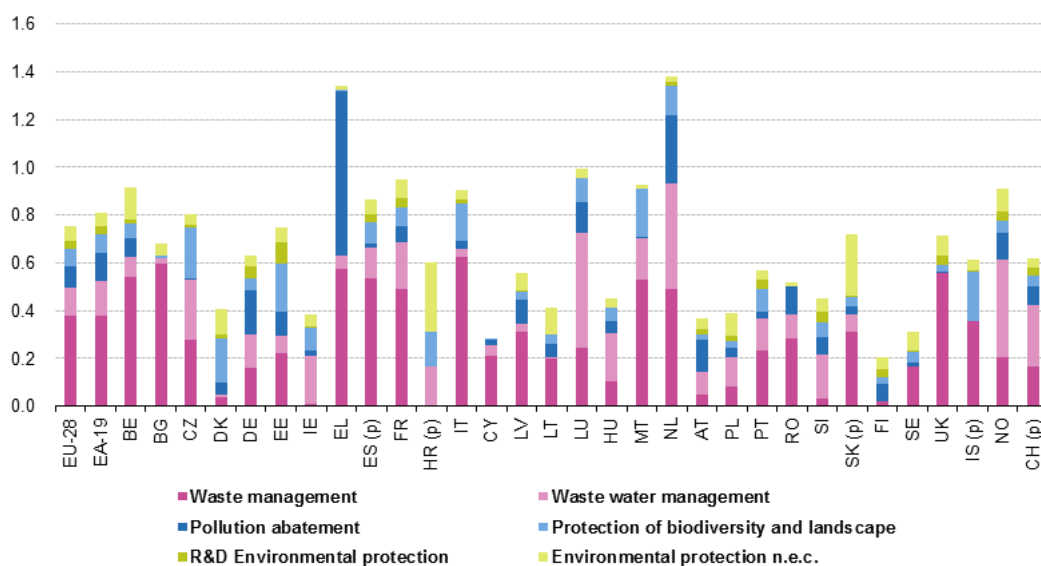


Fig. 1. Total general government expenditures on environment protection, 2017 (% of GDP)

Source: EUROSTAR, [https://ec.europa.eu/eurostat/statistics-](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Total_general_government_expenditure_on_environmental_protection,_2017_(%25_of_GDP).png)

[explained/index.php?title=File:Total\\_general\\_government\\_expenditure\\_on\\_environmental\\_protection,\\_2017\\_\(%25\\_of\\_GDP\).png](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Total_general_government_expenditure_on_environmental_protection,_2017_(%25_of_GDP).png)

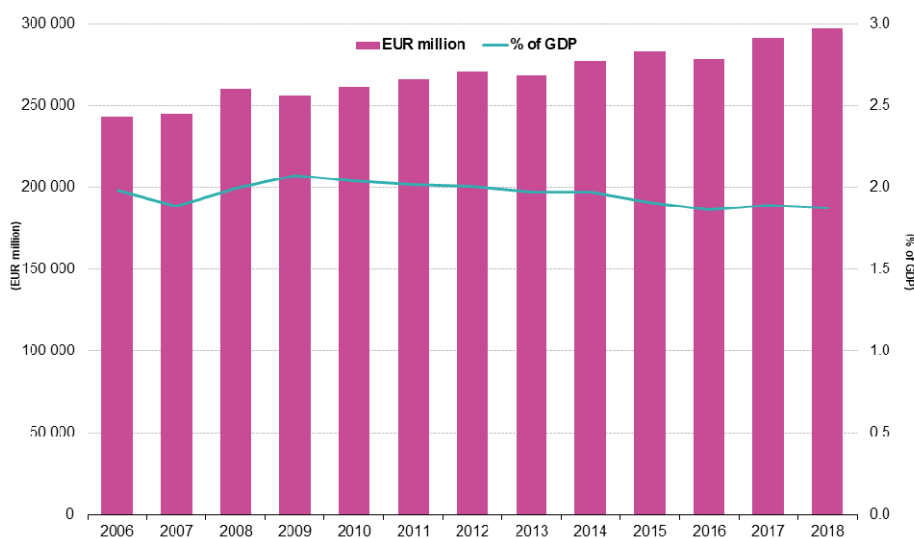


Fig. 2. National expenditure on environment protection, EU-20, 2006 - 2018

Source: Data for EU are estimated by Eurostat, online data codes: env\_ac\_pepsgg, env\_ac\_pestsp, env\_ac\_pestnsp, env\_ac\_eptrf, env\_ac\_epneec and nama\_10\_gdp

Globally, Figure 2 presents results of the 2018 data collection on environmental protection expenditure

accounts (EPEA) provided by European Union (EU) Member States with reporting obligation (Cyprus was

granted a derogation) and selected non-EU countries. It provides information on the EU's expenditure on prevention, reduction and elimination of pollution or any other degradation of the environment and covers the total spending by a country ( i.e. by its households, businesses and government) on environmental protection services, e.g. waste and wastewater management, protection of biodiversity, as well as protection of soil, research and development, education and training. In 2018, the EU Member States spent EUR 297 billion on environmental protection, which amounted to 1.9 % of gross domestic product (GDP). Purchases of environmental services by households and by government, and investments made by producers of environmental services, and by corporations to reduce environmental impacts of their activities, accounted for nearly two thirds of the spending (61 %). Detailed information on composition of national expenditure on environmental protection (NEEP), on contributions to NEEP of different sectors and shares of various transactions is provided in the first three sections of this article. The environmental services are produced both by private corporations and by government. The share of each sector in the total output of environmental services depends on national arrangements and varies across EU Member States.

As can be seen in Figure 2, in 2018, national expenditure on environmental protection (NEEP) of the EU Member States amounted to €297 billion. Rising on average by nearly 2% each year, NEEP has increased by 22% since 2006. As a percentage of gross domestic product (GDP), expenditure on environmental protection remained relatively stable between 2006 (2.0%) and 2018 (1.9%). A small increase was observed in 2009 (2.1%), mainly due to GDP contracting during the financial crisis and economic recession. However, the EU Member States' spending on environmental protection has remained lower than households' expenditure on alcoholic beverages, tobacco and narcotics in the EU, which ranged from 2.3% to 2.1% between 2006 and 2017. Corporations' spending accounts for the largest share of the environmental protection expenditure, accounting for 54% of the total in 2018. The expenditure of general government and non-profit institutions serving households (NPISH) stood at 24%, while households accounted for 22% of the total NEEP in 2018.

### III. CONCLUSIONS

According to the Environmental Implementation Review (2019) at the European Union level, there have been identified a few root problems that require special attention in the coming years and has raised the attention of key authorities and citizens to environmental implementation gaps in their countries. These ideas are aligned with the article findings in report with the presented indicators of sustainable development expenditures and investments.

*Integration of environmental objectives* with other legitimate policy goals is often weak and this has negative effects on implementation. Better integration of all these objectives at the stages of policy planning and implementation is essential for the success of each of the relevant policy areas and ultimately for our societies. The perspectives indicated by the latest State of the Environment report (2015) and the Environmental Indicator Report 2018 are rather grim and full implementation of the current EU environmental laws is, indeed, merely a starting point in changing the trends.

Statistical data and the analysis development have proved that the current progress in real implementation is too slow and better environmental integration can be a game-changer. The situation can be improved only if the environmental concerns are taken into consideration in the framing and execution of public policies with a significant environmental footprint, such as energy, transport and agriculture. In addition, the "nexus approach" could be strengthened as a guiding principle: it is about examining issues systematically and in advance, with a view to identify further integrated solutions for the involved sectors and to underpin environment-related investments at EU, national, regional and local level (according to the (European Commission, 2016)).

*The quality of the relevant governance systems* is a key catalyzer for full implementation. While the needs differ from one country/system to another, there cannot be any improvement in this respect without securing the necessary human and financial resources to the relevant administrations. Further, sustainable development's targets implementation cuts across and depends on the active engagement of a wide spectrum of stakeholders, public and private, from decision makers to citizens, businesses and industries. Such a wide range of interested parties can be activated only if the relevant information is made available to them in an effective way. *Transparency of environmentally relevant information* goes beyond the legal obligations: it is a precondition for effective collaboration in environmental implementation. Without transparency, trust disappears, and the mobilization of stakeholders is not successful.

Tackling the implementation gaps requires solid evidence to identify the 'distance to target', the underlying difficulties and available options and then to monitor the effectiveness of the chosen solutions. Therefore, there is a strength need for all EU countries to be transparent when implementing EU rules and policies, building on the EU's open data porta (<https://data.europa.eu/euodp/en/home>), and using modern information technologies for communication, data and information purposes. In addition, these will enable the right tailoring support to the realities on the ground, when expenditures and investments are planned.

According to actual policies of EU, countries are supported to improve their sustainable development

indicators (reflected in the country report). Several initiatives have been encouraged as following:

- Expressions of this are the thematic Environmental Implementation Review dialogues and the dedicated Peer 2 Peer tool helping to assess the problems, exchanging good practice and peer learning. Successful country dialogues require active engagement of regional and local authorities and of other stakeholders;
- There is a need for more thematic debates at and between all levels of administration, which should result in operational conclusions followed by action. The debates should take into consideration possible further environmental integration in other policy areas.

In addition, the European Commission has published documents that can serve as a starting point, including the Communication on Clean Air (European Commission, 2018a), the Working Document on agriculture and water (published in 2017), the Action Plan for nature, people and the economy, and the Early warning reports on the re-use/recycling of waste (European Commission, 2018b).

The paper underline that EU countries and their governments should act on the sustainable development aspects and related indicators more actively. Countries are also encouraged to continue working on the implementation of the environmental rules in place to deliver better environmental outcomes to the citizens, to protect their health and to cushion and offset the environmental pressures that are costly for our societies and economies.

A good environment is a common asset of people of the EU, both present and future generations, and it constitutes a critical foundation for the other social and economic activities. The EU has put in place comprehensive environmental legislation, with the aim of making sure that air is breathable, water is safe to use, our food is healthy to consume, things around us are safe to use, and pollution is kept at bay. These standards are as good as their implementation. Making

implementation happen is in our hands, whether we act in a public or private capacity (Schroeder et al., 2019).

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