

## **THE EXPENDITURES FOR ENVIRONMENT PROTECTION IN ROMANIA**

**Daniela MITRAN**, PhD Associate Professor  
“Athenaeum” University of Bucharest  
E-mail: [danielamitran@yahoo.com](mailto:danielamitran@yahoo.com)

### **Abstract:**

*Expenditures for environmental protection are considered a response by economic agents and public administration towards the prevention, compensation, and improvement of the state. In nationwide statistical reports, environmental protection costs represent the total amounts of investments and expenses supported by specialized manufacturers, unspecialized manufacturers, and the public administration sector. The paper shows the evolution of expenditures for environmental protection in Romania in the period 2007 – 20011, overall and by activity sectors.*

**Keywords:** *environmental protection costs, preventive investments, internal expenses*

**JEL Clasiffication:** *Q52, R53*

### **Introduction**

The way in which we produce and consume has a significant impact on the environment and creates problems such as: global warming, pollution, and the irrational use and exhaustion of natural resources.

Numerous countries encounter difficulties in the management of recycling and report that the biodiversity of their ecosystems is being damaged.

Prosperity, economic growth, and the quality of life depend on the rational consumption of available resources, on the use of non-polluting technologies, and on the individual realization of the need for sustainable growth and taking of responsibility at an organizational and administrative level.

Transforming sustainable growth from a generous concept and a well known necessity into a global reality is a long road that requires the creation

of realistic environmental protection policies and the specific methods through which they may be implemented.

Being accountable towards the planet requires honoring the UN Convention's decisions on biodiversity: the conservation of close and extended environment, tracking the impact on biodiversity, the impact of using genetic materials and the transfer of technology.

The anticipatory approach on environment issues and the creation of accountability for the environment must be realized through the development and spreading of technologies that do not degrade the environment.

Acknowledging the necessity of environmental protection must be accompanied by the managerial instruments that enable correct decision making and precise environmental cost management for economic agents and public administration. The legislation and regulations in the environmental protection field must determine these agents to invest in environmental friendly technologies. In this way, evaluating the environmental performance of technologies and product eco-efficiency becomes a necessity for all public and private organizations.

*Environmental protection* comprises multiple activities directed towards maintaining or restoring a clean environment, the prevention of polluting waste or noise, and the reduction of polluting substances through collecting, recycling and the treatment of waste. Cost analysis enables the evaluation of efforts made towards the prevention, reduction, and elimination of pollution resulting from the production or consumption of goods and services.

### **1. Indicators to highlight the effect of environmental protection policies**

Three types of indicators are used in order to highlight the effect of environmental protection policies on the European production and consumption system:

- The development of typical environmental protection activities;
- The measurement of pressures on the environment;
- The actual expenditures for environmental protection derived from economic activities and more.

Expenditures for environmental protection are considered a response by economic agents and public administration towards the prevention, compensation, and improvement of the state of the environment.

The highlighting and analysis of environmental protection costs represents an important element establishing environmental policies on a macro level and the evaluation of companies' own environmental performance.

In practice, the evaluation of the environment and environment policies is difficult yet necessary for providing the cost data used in the managerial decision process.

Environmental protection expenses must be defined in such a way that the economic agent has a clear picture on the effects his own activities has on the environment.

In order to evaluate the total impact of environmental policies, environmental protection activities must be wholly identified, whether they be primary, secondary, or auxiliary activities. Services produced by auxiliary activities sustain the production of the main product, and their expenses are individualized in a small proportion.

At the moment, statistical data referring to environmental protection expenses used to analyze the impact of environmental policies are highlighted on two institutional levels: public administration and enterprise.

In nationwide statistical reports, environmental protection costs represent the total amounts of investments and expenses supported by specialized manufacturers, unspecialized manufacturers, and the public administration sector.

At an enterprise level, environmental costs aren't usually available at an accounting level, and estimating how much of the current expenses or investments are actually environmental costs is often a difficult process.

Total national expenses include: investments, current internal expenses (expenses made by the unit's employees, but excluding current external expenses), the cost of buying environmental protection services from third parties, and environmental taxes.

**2. Investments for environmental protection** include all the capital expenses tied to the protection of the environment and their scope is to collect, treat, monitor, control, reduce or prevent polluting agents or other pollution caused by the enterprises' operations.

The total investment amount is calculated by adding up:

- The necessary investment in order to evacuate the polluting substances resulted from the production process and to treat the pollution – this is called end of pipe environmental protection;
- The investment for environmental protection integrated into production

### **2.1. End of pipe investments**

These include the sum of all capital expenses deriving from: methods, technologies, processes or equipment required for the removing of pollution or polluting agents after their production, the prevention of pollution spreading and the measurement of pollution levels, and the treatment and evacuation of polluting agents resulted from the enterprise's activities. These represent supplementary components to existing equipment used for collecting or extracting pollutants (filters, treatment plants) and do not

influence the production process. For this reason, they are called end of pipe environmental protection investments.

## **2.2. Investments for environmental protection integrated into production (preventive investments)**

These investments are also called „clean technologies” and sum up the capital expenses made towards the adaptation or creation of new methods, technologies, processes, and equipment for the prevention or reduction of the quantity of pollutants emitted at the source.

This category of investments implies changes in production and the operating processes in order to prevent or reduce the source pollution.

There are two types of preventive investments: separately identified and integrated.

Separately identified investments include: methods, processes, technologies, and equipment exclusively used to protect the environment, their respective expenses being reported as integrated environmental protection investments.

Integrated investments include: methods, processes, technologies, and equipment that are integrated into other operational activities, which makes them harder to identify as a pollution prevention component. In this situation, only a part of the investment will be reported under environmental protection investments. This part corresponds to additional expenses related to the environmental protection objective, alongside another component that does not share the same function. In order to determine the additional expenses, technology without an environmental function is considered reference technology and the extra cost generated by the environmental function will be reported as an environmental protection investment.

**B. Current expenses for environmental protection** include expenses that are necessary for the operation, repair, and maintenance of installations, equipment, and machinery; expenses for the collection, treatment, monitoring and control, reduction, prevention, or elimination of pollutants or other environmental degradation caused by the units’ operational activity. Costs not directly tied to the production process that serve to fund environmental services (coordination, research, waste management, water treatment etc.) are also included. Thus, current expenses include both service expenses and expenses made towards acquiring environmental services.

Defining cost is based on the accounting standards used by enterprises according to the Law of Accounting and consists of personnel, energy, materials, and research and development services’ costs. These correspond to the costs of operating and running of the enterprise’s own activities and are considered internal costs, while the acquisition of environmental protection services from third parties are considered external costs.

**Current internal expenses** include expenses made by the unit's personnel towards environmental protection. These include energy and materials usage, the maintenance of technology, personnel costs and also costs related to the general administration, education, information, management, research and development of the environment.

**Current external expenses** include the acquisition of environmental protection services from third parties (including studies on environmental protection, laboratory analyzes etc.), as well as environmental taxes paid according to Law.

In our country the lack of a coherent legislative framework in the field of environmental protection and the lack of material and human resources are the main problem faced by most companies, but especially SMEs, and central and local public administration.

There are dozens of environmental regulations that have to meet a company or public institution in Romania

Monitoring compliance with these regulations is difficult or even nonexistent, voluntary compliance is achieved after a few situations where we are dealing with a responsible management.

Including large companies prefer to be penalized for failure to comply with national rules of environmental protection since the savings by reducing the cost to the environment far outweigh the fines imposed.

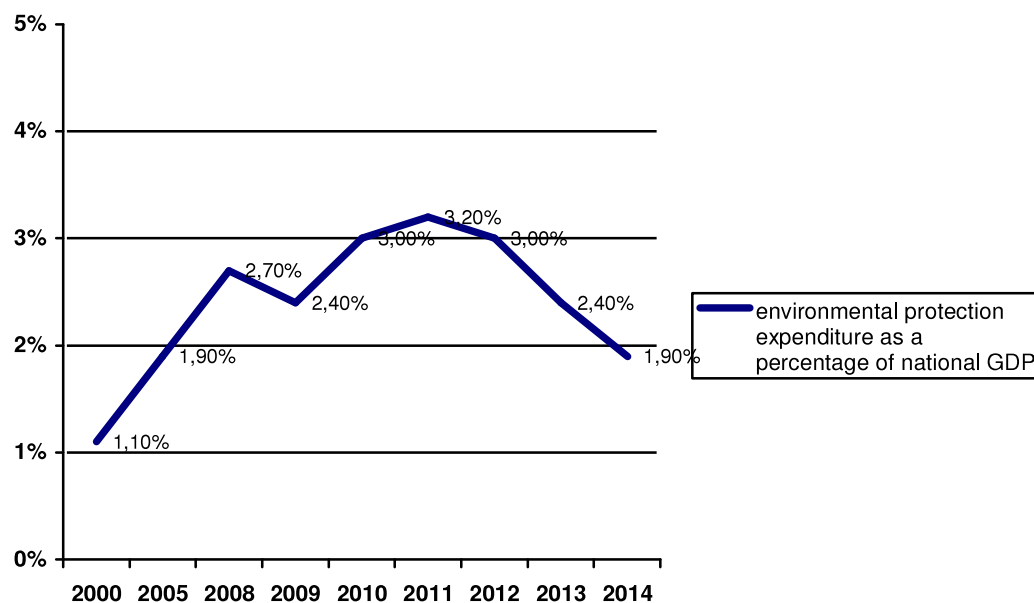


Figure 1 Evolution environmental protection expenditure as a percentage of national GDP

Source: Author's processing based on data from inssinsse.ro

In Romania, in 2014, were spent 12.6 billion Lei (2.8 billionn Euros) in investments to environmental protection, equivalent to about 1.9% of gross domestic product (GDP).

As a share of GDP, however, investments in 2014 are the lowest since 2008, the year in which, while in value were 14.3 bln. Lei represented 2.8% of GDP. Compared to 2013, investments decreased by over 19%.

In value of investments in environmental protection peak was reached in 2011, their level being 18.6 bn. Lei (3.2% of GDP). The areas biggest expenses were recorded for waste management (56.7% of the total and the equivalent of 7.1 billion. Lei), followed by expenses for water protection (24.9%, or 3.1 billion. lei) and the allocations to air protection (10.8%, 1.3 bn. lei).

-The public administration sector comprises all the institutional units that produce or fund non-commercial environmental protection services for the community.

- Unspecialized producers are units that do not have environmental protection as their primary focus, but are forced to run such activities in order to prevent environmental damage.

- Specialized producers of environmental services represent units whose primary activity is environmental protection.

Table 1 Environmental investment structure

<b>Year</b>	<b>Unspecialized Producers % of Total Investments</b>	<b>Public Administration %</b>	<b>Specialized Producers %</b>
<b>2007</b>	<b>55,4</b>	<b>23,0</b>	<b>21,6</b>
<b>2008</b>	<b>35,0</b>	<b>33,4</b>	<b>31,6</b>
<b>2009</b>	<b>40,9</b>	<b>35,0</b>	<b>24,1</b>
<b>2010</b>	<b>38,8</b>	<b>38,7</b>	<b>22,5</b>
<b>2011</b>	<b>25,9</b>	<b>46,6</b>	<b>27,5</b>
<b>2012</b>	<b>57,2</b>	<b>30,7</b>	<b>12,1</b>
<b>2013</b>	<b>73,1</b>	<b>15,7</b>	<b>11,2</b>
<b>2014</b>	<b>72,6</b>	<b>18,6</b>	<b>8,8</b>

Source: Author's processing based on data from inssinsse.ro

From Table 1 it is found that since 2011 there is an increase in the share of investments made by producers in non-specialized investment while

lowering total poder investments in public administration and those made by specialized producers.

Table 2 Environmental protection expenses by activity sectors and expense categories

- thousands of Lei at current prices

Activity sectors	Year	Expenses			Total
		Investments	Current expenses		
			internal	External	
Unspecialized producers	2007	1.329.980	913.847	499.595	2.743.422
	2008	1.550.499	2.153.762	812.264	4.516.525
	2009	1.773.140	1.324.524	831.934	3.929.598
	2010	1.843.471	1.780.594	906.036	4.530.101
	2011	1.400.480	2.413.346	976.573	4.790.399
	2012	2.353.193	3.495.240	1.205.993	7.054.426
	2013	2.864.532	3.493.001	1.517.650	7.875.183
	2014	3.089.570	1.332.819	1.655.840	6.078.229
Specialized Producers	2007	1.048.084	5.487.074	504.196	7.039.354
	2008	1.716.516	5.637.738	973.980	8.328.234
	2009	1.046.720	5.070.253	834.181	6.951.154
	2010	1.069.905	7.104.690	1.407.088	9.581.683
	2011	1.491.591	8.899.850	1.373.984	11.765.425
	2012	499.699	8.597.637	1.111.629	10.208.965
	2013	438.194	6.982.197	1.310.982	8.731.373
	2014	372.637	5.822.854	950.486	7.145.977
Public Administration	2007	1.296.891	867.226	224.969	2.914.520
	2008	1.635.463	939.424	389.368	3.633.332
	2009	1.518.164	1.061.184	384.676	3.357.708
	2010	1.840.217	401.608	557.059	4.293.033
	2011	2.522.208	782.129	923.137	5.367.402
	2012	1.263.309	1.049.767	957.368	3.571.218
	2013	617.341	1.086.219	1.074.030	2.905.379
	2014	792.469	1.020.643	1.181.316	3.132.485

Source: Author's processing based on data from inssinsse.ro

Starting with 2012 investments in environmental protection began to drop. This can be explained, either by closing of industrial economic units, either by their compliance with environmental requirements imposed by the laws.

### Conclusion

When Romania joined the European Union, much of the industrial economic units did not fit the parameters on environmental pollution, imposed by European directives, which is why they adopted transitional

period. Operators with significant environmental impact through compliance plans assumed commits to making the necessary investments in order to comply with environmental requirements. By the end of 2014, according to the commitments in the Accession Treaty for these installations were invested in environmental protection in order to comply with best available techniques and achieve a high level of environmental protection, amounting to 69,452,480 euros.

### **References**

1. Eila Salomaa, Investment in Cleaner Technologies as Industrial Environmental Protection Measures in Finland Open Journal of Renewable Energy and Sustainable development, Volume 1, Number 1, March 2014  
\*\*\*European Union, System of Environmental-Economic Accounting 2012—Experimental Ecosystem Accounting, 2014  
\*\*\*Eurostat, Energy, transport and environment indicators, 2014  
\*\*\*Ministerul Mediului, Apelor si Padurilor, Raport annual privind starea mediului in Romania, anul 2014, ANMP, 2015  
[www.insse.ro/cms/files/statistici/comunicate/com\\_anuale/mediu/](http://www.insse.ro/cms/files/statistici/comunicate/com_anuale/mediu/)