ENVIRONMENTAL ACCOUNTING, AN ENVIRONMENTAL PROTECTION INSTRUMENT USED BY ENTITIES

IONELA CORNELIA STANCIU, ANA-MARIA JOLDOŞ (UDREA), FLORINA GEORGETA STANCIU [*]

ABSTRACT: *The purpose of this article is to present certain aspects regarding environmental accounting and the environmental costs, which are instruments that the entities can use to identify and prevent the effects of their activities on the environment. The main objectives aimed by the article were to present the state of knowledge starting with the 1970s, when the concept of environmental accounting emerged for the first time, up until now; to define the concepts of environmental accounting and environmental costs; to present an analysis of how economic agents in Romania, and implicitly, accounting regulations, are getting involved in environmental issues.*

KEY WORDS: *environmental aspects; accounting profession; environmental costs; environmental protection costs; costs.*

JEL CLASIFICATION: *M41; O13.*

1. INTRODUCTION

Given the intense process of normalization and standardization of accounting, must know that in regard to environmental management and protection of its efforts to make a joint representation of such activities. Accounting is required to submit various types of user information on the financial position and performance of entities in the management of resources at their disposal. Historically speaking, the accounting was limited, mostly, to the resources represented by material and financial goods of entities. This became less appropriate, being left out of accounts significant "costs", such as environmental, social, which were not found in the financial statements of entities.

[*] *Ph.D. Student, „Valahia" University of Târgovişte, Romania, stanciu_ionela09@yahoo.com*
Ph.D. Student, „Valahia" University of Târgovişte, Romania
Student, „1 Decembrie 1918" University of Alba Iulia, Romania

This is because entities didn't "pay" anything for the environment, and only little for social issues. This does not mean that society as a whole does not support these "costs". Various other factors have forced the conservative to take measures of modernization. In recent decades a growing number of entities give great importance to environmental issues and their reflection by accounting, either under the influence of administrative regulations or because of their information needs. In certain circumstances, for certain fields, they can have a significant impact on the financial statements, and that of their users. The first occurrence of the concept of environmental accounting goes back to 1970, and since then, the concept has had a growing development.

2. RESEARCH METHODOLOGY

The methodology is a complex word (concept), etymologically composed of *method's* and *logos* which mean "method" and "science", in Greek, and free translation "science method", the science of conception, choice and use of method in the investigation process of economic phenomena. The research methodology is the theory and practice methods, an activity that is studying the essence, nature, status, definition, classification, etc. the construction of explanatory models. The need for scientific research in accounting is particularly important today, more than that pluridisciplinarity in accounting research is necessary and sometimes profitable. Scientific research is necessary to seek and find solutions or answers to immediate problems and to achieve reasonable theorizing about environmental issues and how they are perceived by the entities and professional bodies. The scientific demarche is based on information from the national, European and international specialized literature and practice regarding environmental accounting and environmental costs. Our approach turned to research methods like documentation, analysis, synthesis, comparison, all these being part of the positivist research current.

3. THE CURRENT STATE OF KNOWLEDGE IN THE AREA OF ENVIRONMENTAL ACCOUNTING

At the beginning, environmental accounting went through a period of uncertainty. Mathews (1997), as well as Ienciu and Matis (2010), described the development of environmental accounting in four stages, as follows:

- **1970-1980**: represents the beginning of the first researches in the area of environmental accounting, which had a more descriptive character. As studies from that period, it is worth to mention the articles of the authors: Beams and Fertig (1971), Churchman (1971), Linowes (1972), Mobley (1970), Dierkes and Preston (1977), Ullman (1976), Abbott and Monsen (1979), Belkaoui (1980), Bowman and Haire (1975), Grojer and Stark (1977), Trotman (1979), Anderson (1980);
- **1981-1994**: there are debates regarding the role of accounting in the disclosure of information regarding environmental activities. During this period, the interest of researchers for this area increases; the managers and even accountants start to pay more attention to the issue of environmental accounting. The number of

researchers of environmental accounting is also increasing at the expense of researches regarding social accounting. As studies, the following may be mentioned: Burchell (1985), Arlow and Gannon (1982), Belkaoui and Karpik (1989), Brooks (1986), Freedman and Jaggi (1988), Guthrie and Mathews (1985), Guthrie and Parker (1989), Rockness (1985), Shane and Spicer (1983), Trotman and Bradley (1981), Ullmann (1985), Brooks (1986), Burke (1984), Mathews (1984), Logsdon (1985), Wartick and Cochran (1985), Donaldson (1982), Richardson (1987), Cooper and Sherer (1984), Gray (1990), Harte and Owen (1991), Roberts (1992), Hindle (1993);

- **1995-2001**: the maturation of environmental accounting; environmental information is starting to be taken into consideration, environmental audit is launched; environmental accounting, both theoretically and practically, is beginning to be widely discussed, especially in developed countries. The studies from this period are starting to grow, this period being named the "cornerstone" of environmental accounting. The researchers of this area are starting to pay increased attention to this field, the number of studies is beginning to grow considerably, and the environmental reports remain the main sub-field approached by researchers. This sub- field is starting to gain interest due to the implementation of standards regarding environmental management, standards that also include a part of audit or verification: Burritt (1995), Owen (1995), Gamble (1995), Deegan (1998), Friedmana and Miles (2001), Kitzman (2001), Wilmshurst and Frost (2001), Frost (2001);

- **2002-2010**: guides regarding the reporting of environmental information and regulations about environmental accounting are issued. The number and quality of articles about environmental accounting continue to grow. The studies in this field are more numerous, more ample, and bring important contributions to the development of this research area: Gibson and Bruce Martin (2004), Brown and Michael Fraser (2004), Watson (2003), Watson and Emery (2004), Parker (2005), O'Dwyera and Owen (2005), Mobus (2005), Patrick de Beer and Francois Friend (2006), Richard Howarth (2006), Fleischman and Schuele (2006), Christine Jasch (2006), Martin (2007), Auty (2007), Robert Repetto (2007), Bartelmus (2007), Ubaldo (2009), Jeliazkov (2009), Henri (2010), Gray and Bebbington (2010), Burritt and Schaltegger (2010). In terms of Romanian researchers, we mention the studies conducted by: Crețu (2004), Dumitrana, (2005), Lungu (2008), Caraiani (2007), Borza (2007), Tabără and Nuță (2007), Bonaci and Ienciu (2007), Matiş, Ienciu and Cioara (2010).

The conclusion that may be drawn is that researches in environmental accounting have grown considerably due to the importance that environmental issues started to have over entities and over society. New sub-fields of environmental accounting are developing, namely environmental audit and environmental management accounting.

4. THE NEED TO INVOLVE ACCOUNTING IN THE ENVIRONMENTAL PROBLEMS OF THE ENTITY

Environmental issues are starting to become an area of interest for the users of financial statements; a growing number of entities are beginning to pay attention to these issues also.

Today, the concept of natural environment or environment is associated with three perspectives (Neculai Tabără et all, 2009). According to the *first perspective*, the environment is *the set of natural resources*. It is the initial notion of the environment and the most intuitive. It emerged as a result of several analyses and findings at the end of the 20th century, which gained growing significance as the chance to observe global economy as a whole increased. According to the *second perspective*, the environment represents *the interaction between natural resources and human activities*. This is the notion with the most uncertain limits, which occur from the negotiation between different abilities and disciplines. In terms of the *third perspective*, the environment is the *set of all available resources*. This is the notion that derives from the concept of sustainable development, according to which environmental, social and economic elements are actually indissoluble.

Bennet and James (1997) identified six fields related to the association between environment and accounting. The goal of this association is to ensure that the management of the entity has sufficient information to improve the management of the decision-making process. Bennet and James (1997) claim that the environment-environmental accounting association may be effective in improving the efficiency of the entity's management by: identifying and reducing costs, prioritizing environmental actions, directing the process of establishing prices for products, increasing the client's value, making investment decisions with consequences on long term and assessing the eco-efficiency and/or sustainability of the entity's activities.

The incorporation of environmental issues in the life of the entity involves taking them into consideration in terms of economy, legal framework, accounting, finance and technique (Lafontaine, J.P., 2002). In terms of *economy*, taking into account environmental parameters in the cost of services and products allows the entity to ration the consumption of natural resources or energy on one hand, achieving substantial savings, and, on the other hand, it allows meeting the requirements regarding the environment and the consumers' health. In terms of the *legal framework*, taking into consideration the environment is imposed by the risks that engage the responsibility of the entity. This responsibility is generated by non-compliance with the environmental legislation and may result in administrative and/or criminal sanctions. In terms of *accounting and finance*, recording environmental costs generated by the activity of the entity and presenting the associated financial information represent a mean of assessing performances (Beţianu Leontina, 2008).

The emergence of environmental accounting dating back to 1970, interest in this area increased considerably, from managers to give greater importance to environmental issues.

5. CONCEPTUAL DEMARCATIONS REGARDING ENVIRONMENTAL ACCOUNTING

The term environmental accounting has many meanings and uses, until now, there is to date no generally accepted concept of environmental accounting. Gray, Bebbington and Walters (1993) define environmental accounting as a management tool addressing all areas of accounting that may be affected by the

response of business organizations to environmental issues, including the new area of eco-accounting. Steele and Powell (2002), who define it as being the identification, allocation and analysis of material flows and of environmental cash-flows in order to provide insight into environmental impacts and into the associated financial consequences. Environmental accounting represents an efficient information system about the rarefaction degree of natural resources caused by the activity of entities and utilized to reduce this rarefaction and to inform third parties (Christophe, 2000).

According to Ienciu (2009), environmental accounting records, analyzes and reports the financial impacts caused by the environment, as well as the environmental impacts/issues of an economic system in order to provide users with a clear and complete picture of the environmental performance of that economic system.

In our opinion, environmental accounting is a tool for identifying and measuring environmental costs in order to ensure an adequate environmental performance. Thus, environmental accounting serves external users by monitoring the presentation of information about the environment within financial statements (by introducing a green column into the balance sheet in the profit and loss account or in the notes to financial statements), the calculation of intermediary balances of administration (by determining the net present value that takes into account the consumption of natural resources) and the preparation of annual activity reports or of a specific environmental report (Caraiani, et al., 2007).

Since accountancy is a very practical science, it is of vital importance to clarify the relative position of environmental accounting in the whole accounting system and its relationship with the conventional financial and management accounting systems. Parallel to the main categories of accounting, environmental accounting has also two branches. These include (Li Xiaomei, 2004):

1. Environmental Financial Accounting (EFA), which focuses on reporting the cost of environmental liabilities and other significant environmental costs, and provides related environmental financial information to external stakeholders; and
2. Environmental Management Accounting (EMA), which, as part of management accounting, addresses mainly to the information about material and energy flow, and provides information for internal decision makers of a corporation.

Environmental accounting can support national income accounting, financial accounting, or internal business managerial accounting. This primer focuses on the application of environmental accounting as a managerial accounting tool for internal business decisions. Different uses of the term environmental accounting arise from three distinct contexts (table 1).

National income accounting is a macro-economic measure. Gross Domestic Product (GDP) is an example. The GDP is a measure of the flow of goods and services through the economy. It is often cited as a key measure of our society's economic well-being. The term environmental accounting may refer to this national economic context. For example, environmental accounting can use physical or monetary units to refer to the consumption of the nation's natural resources, both renewable and nonrenewable.

In this context, environmental accounting has been termed „natural resources accounting".

Financial accounting enables companies to prepare financial reports for use by investors, lenders, and others. Publicly held corporations report information on their financial condition and performance through quarterly and annual reports, governed by rules set by the U.S. Securities and Exchange Commission (SEC) with input from industry's self-regulatory body, the Financial Accounting Standards Board (FASB). Generally Accepted Accounting Principles (GAAP) are the basis for this reporting. Environmental accounting in this context refers to the estimation and public reporting of environmental liabilities and financially material environmental costs.

Table 1. Type of Environmental Accounting

Type of Environmental Accounting	Focus	Audience
national income accounting	nation	external
financial accounting	firm	external
managerial or management accounting	firm, division, facility, product line, or system	internal

Source: EPA, An Introduction to Environmental Accounting As A Business Management Tool: Key Concepts And Terms, 1995, p.4-5

Management accounting is the process of identifying, collecting, and analyzing information principally for internal purposes. Because a key purpose of management accounting is to support a business's forward-looking management decisions, it is the focus of the remainder of this primer. Management accounting can involve data on costs, production levels, inventory and backlog, and other vital aspects of a business. The information collected under a business's management accounting system is used to plan, evaluate, and control in a variety of ways:

(1) Planning and directing management attention,

(2) Informing decisions such as purchasing, capital investments, product costing and pricing, risk management, process/product design, and compliance strategies, and

(3) Controlling and motivating behavior to improve business results (EPA, 1995).

According to IFAC (2005), environmental accounting is a broad term used in a number of different contexts, such as:

- Assessment and disclosure of environment-related financial information in the context of financial accounting and reporting;
- Assessment and use of environment-related physical and monetary information in the context of Environmental Management Accounting;
- Estimation of external environmental impacts and costs often referred to as Full Cost Accounting;
- Accounting for stocks and flows of natural resources in both physical and monetary terms, that is, Natural Resource Accounting;
- Aggregation and reporting of organization-level accounting information, natural resource accounting information and other information for national accounting purposes; and

- Consideration of environment-related physical and monetary information in the broader context of sustainability accounting.

At the organization level, EA takes place in the context of both management accounting (assessment of an organization's expenditures on pollution control equipment; revenues from recycled materials; annual monetary savings from new energy-efficient equipment) and financial accounting (evaluation and reporting of the organization's current environment-related liabilities). As mentioned in the Foreword to this document, numerous books and guidance documents have been published on the topic of Environmental Management Accounting.

Table 2 provides a brief comparison of the environmental dimensions of financial and management accounting, as well as a general mention of associated external reporting links:

Table 2. Organization-level Accounting and Reporting

Organization level Accounting	**Organization-level Environmental Accounting**	**Associated MANDATORY External Reporting**	**OTHER External Reporting Links**
Financial Accounting: An organization's development of standardized financial information for reporting to external parties (e.g., investors, tax authorities, creditors).	Environmental Issues in Financial Accounting: The inclusion in financial reports of environment related information such as earnings and expenses of environment-related investments, environmental liability and other significant expenses related to the organization's environmental performance.	Financial reporting to external parties is regulated by national laws and international standards, which specify how different financial items should be treated. The financial reports issued by organizations increasingly include information related to their environmental and social performance. Some countries require such content in financial reports, while some organizations include such information voluntarily.	In addition, organizations use some of the environment-related information gathered for financial reporting purposes for environmental regulatory reporting, national reporting or voluntary corporate environmental and sustainability reporting.
Management Accounting : An organization's development of both non monetary and monetary information to	*Environmental* Management Accounting: The management of environmental and economic performance via management accounting systems and practices that focus on	There are generally no external reporting requirements specifically associated with Management Accounting or *Environmental* Management	However, organizations use some of the information gathered under EMA for environmental regulatory reporting, national reporting or

support both routine and strategic decision-making by internal managers	both physical information on the flow of energy, water, materials, and wastes, as well as monetary information on related costs, earnings and savings.	Accounting.	voluntary corporate environmental and sustainability reporting.

Source: International Guidance Document Environmental Management Accounting, International Federation of Accountants, 2005, p. 16

Just as there are typically many links between an organization's management accounting and financial accounting practices and activities, there are potentially many links between environmental management accounting and the inclusion of environment related information in financial reports.

6. ENVIRONMENTAL COSTS – THE SUBJECT OF ENVIRONMENTAL ACCOUNTING

The main component of environmental accounting is the environmental cost. Over time there have been many definitions for the concept of environmental cost, and we will analyze these definitions next.

Environmental costs are one of the many different types of costs businesses incur as they provide goods and services to their customers. Environmental performance is one of the many important measures of business success. Environmental costs and performance deserve management attention for the following reasons (EPA, 1995):

- Many environmental costs can be significantly reduced or eliminated as a result of business decisions, ranging from operational and housekeeping changes, to investment in "greener" process technology, to redesign of processes/products. Many environmental costs (e.g., wasted raw materials) may provide no added value to a process, system, or product.
- Environmental costs (and, thus, potential cost savings) may be obscured in overhead accounts or otherwise overlooked.
- Many companies have discovered that environmental costs can be offset by generating revenues through sale of waste by-products or transferable pollution allowances, or licensing of clean technologies, for example.
- Better management of environmental costs can result in improved environmental performance and significant benefits to human health as well as business success.
- Understanding the environmental costs and performance of processes and products can promote more accurate costing and pricing of products and can aid companies in the design of more environmentally preferable processes, products, and services for the future.
- Competitive advantage with customers can result from processes, products, and services that can be demonstrated to be environmentally preferable.

- Accounting for environmental costs and performance can support a company's development and operation of an overall environmental management system. Such a system will soon be a necessity for companies engaged in international trade due to pending international consensus standard ISO 14001, developed by the International Organization for Standardization.

European Commission Recommendation 453/2001 makes the distinction between environmental costs and other costs, defining them as costs of the actions undertaken by the economic entity and by third parties in the name of an economic entity with the purpose of preventing; reducing or repairing the environmental damages resulted from operational activities. These costs include: waste storage and disposal, soil protection, underground and surface water protection, clean air and climate protection, noise reduction, biodiversity and landscape protection. The definition given to environmental costs by the United Nations Conference on Trade and Development (UNCTAD, 2001) posits that they "comprise the costs of steps taken, or required to be taken, to manage the environmental impacts of an enterprise's activity in an environmentally responsible manner, as well as other costs driven by the environmental objectives and requirements of the enterprise".

Protection Agency (1995) defined environmental costs as being costs with a direct financial impact over entities (internal costs) and individual costs, for which the entity is not responsible (external costs). According to the Environmental Protection Agency (1995), ***internal costs*** include:

- *Conventional costs*, which include costs with equipments, raw materials and consumables;
- *Hidden costs*, which refer to the results of assigning environmental costs to indirect costs or overlooking future and contingent costs;
- *Contingent costs* refer to environmental costs that will not occur with certainty in the future, depending on uncertain future events, such as the costs involved in a future restoration process;
- *PR costs* are less tangible because they cover the subjective perceptions of management, clients, employees, community and regulators. This category may include costs of the annual environmental reports, as well as costs for environmental activities, such as planting trees.

External costs include the costs of environmental degradation for which the entities are not legally responsible and which have negative consequences on humans, property and their well being, and can't be always compensated through legal systems. Determining the financial value of external costs is difficult, but, nevertheless, some entities are trying to approach these costs as part of their environmental accounting system.

IFAC makes a distinction between waste and emission control costs, prevention costs and other administrative costs such as research and development that helps to increase eco-efficiency. According to the classification of IFAC, the following costs (table 3) are considered environmental costs.

From our point of view, environmental costs are those expenses incurred to prevent, reduce or repair damages caused to the environment, incurred at the initiative

of the entity or required by the regulations and rules in place to reduce the environmental impact of the entity and to reduce the environmental risk.

Table 3. Environment-related cost categories

Materials Costs of Product Outputs: Includes the purchase costs of natural resources such as water and other materials that are converted into products, by-products and packaging
Materials Costs of Non-Product Outputs: Includes the purchase (and sometimes processing) costs of energy, water and other materials that become Non-Product Output (Waste and Emissions).
Waste and Emission Control Costs: Includes costs for: handling, treatment and disposal of Waste and Emissions; remediation and compensation costs related to environmental damage; and any control-related regulatory compliance costs.
Prevention and Other Environmental Management Costs: Includes the costs of preventive environmental management activities such as cleaner production projects. Also includes costs for other environmental management activities such as environmental planning and systems, environmental measurement, environmental communication and any other relevant activities.
Research and Development Costs: Includes the costs for Research and Development projects related to environmental issues.
Less Tangible Costs: Includes both internal and external costs related to less tangible issues. Examples include liability, future regulations, productivity, company image, stakeholder relations and externalities.

Source: International Federation of Accountants, Environmental Management Accounting, New York, 2005, p. 38

Environmental costs should be capitalized if they relate, directly or indirectly, to future economic benefits that will flow to the enterprise through: increasing the capacity, or improving the safety or efficiency of other assets owned by the enterprise; reducing or preventing environmental contamination likely to occur as a result of future operations; or conserving the environment (United Nations Conference on Trade and Development, 1997).The definition of an asset indicates that where a cost incurred by an enterprise will result in future economic benefits, it would be capitalized and charged to income over the period in which those benefits are expected to be realized. Environmental costs that comply with such a criterion would, therefore, be capitalized. Capitalization is also considered appropriate when environmental costs are incurred for safety or environmental reasons, or where they reduce or prevent potential contamination, or conserve the environment for the future. While they may not directly increase economic benefits, incurring such costs may be necessary if the enterprise is to obtain, or continue to obtain, future economic benefits from its other assets.

Many environmental costs do not result in a future benefit, or are not sufficiently closely related to future benefits to enable them to be capitalized. Examples would include treatment of waste products, clean up costs relating to current operating activities, clean-up of damage incurred in a prior period, ongoing environmental administration, and environmental audits. Fines and penalties for non-compliance with environmental regulations, and compensation to third parties for environmental damage are regarded as environmentally related costs, and are also instances of costs incurred that do not result in future benefits.

When an environmental cost that is recognized as an asset is related to another asset, it should be included as an integral part of that asset, and not recognized separately. In most instances, environmental costs that are capitalized are related to another capital asset. There is no specific or separate future benefit that results from incurring the environmental costs themselves. When an environmental cost is capitalized and included as an integral part of another asset, the combined asset should be tested for impairment and, where appropriate, written down to its recoverable amount. The integration of capitalized environmental costs with the related asset could, in some instances, result in the combined asset being recorded above recoverable amount.

Sorin Briciu (2008) proposes a possibility of recording the environmental costs in the management accounting can be presented as follows:

Table 4. Possibilities of recording the environmental costs

Environmental costs	Accounts of the managerial accounting
A. Environmental costs for controlling environmental impacts occurring within business area as a result of production and service activities (business area costs)	923.1. Environmental expenditures of the business area
1. Pollution prevention costs	923.1.1. Environmental expenditures of the business area. Pollution prevention
2. Global environmental conservation costs	923.1.2. Environmental expenditures of the business area. Global environmental conservation
3. Resource circulation costs	923.1.3. Environmental expenditures of the business area. Resource circulation costs
B. Environmental costs for controlling environmental impacts occurring in the upstream or downstream as a result of production and service activities (upstream/downstream costs)	923.2. Environmental expenditures of upstream/downstream
C. Environmental costs in management activities (management activity costs)	924.1. Environmental expenditures of the management activity
D. Environmental costs in research and development activities (research and development costs)	924.2. Environmental expenditures in research and development activity
E. Environmental costs in social activities (social activity costs)	924.3. Environmental expenditures in social activity
F. Environmental costs corresponding to environmental damages (environmental damages costs)	923.3. Environmental expenditures of environmental damages

Source: Briciu Sorin, Sas Florentina, Considerations regarding the pursuance and reporting of the environmental costs, Accounting and Management Information Systems, Supplement, 2008, p. 474-486

As can be seen, environmental management accounting is considered the most appropriate form of accounting that reflects environmental costs.

7. THE INVOLVEMENT OF ROMANIAN ECONOMIC AGENTS AND OF ACCOUNTING REGULATIONS IN FORCE IN THE MANAGEMENT OF ENVIRONMENTAL ISSUES

Starting from the general objective of the European Union Sustainable Development Strategy, the Sustainable Development National Strategy of Romania establishes that eco-efficient management of resources consumption and their maximum exploitation to be realized by promoting a production and consumption model which would allow a long term sustainable economical growth and a successive rapprochement to the medium level of performance of European Union's countries. To promote this model, the strategy determines the need for hiring a permanent and systematic dialogue with associations of employers and social partners to agree to environmental and social performance targets for key products and processes. In this way, the achievement of the objectives requires a proactive approach from companies regarding environmental issues (Rof, & Dănulețiu, 2010).

Table 5. Types of environmental expenses by types of producers in period 2007-2009

- thousand LEI current prices, % –

	2007		2008		2009	
	Nominal values	**%**	**Nominal values**	**%**	**Nominal values**	**%**
Specialized producers (total) from which:	70.393.54	72	8.328.234	65	6.951.154	64
- investments	1.048.084	11	1.716.516	13	1.046.720	10
- internal current expenses	5.487.074	56	5.637.738	44	5.070.253	47
- external current expenses	504.196	5	973.980	8	834.181	8
Unspecialized producers (total) from which:	2.743.422	28	4.516.525	35	3.929.598	36
- investments	1.329.980	14	1.550.499	12	1.773.140	16
- internal current expenses	913.847	9	2.153.762	17	1.324.524	12
- external current expenses	499.595	5	812.264	6	831.934	8
Total environment protection expenses	9.782.776	100	12.844.759	100	10.880.752	100

Source: www.insse.ro

As for the Romanian company's involvement into environmental problems, we will realize an analysis on the base of the expenditure made by these for environment protection. According to National Institute of Statistics in Romania, the economic agent's expenses related to environment protection are distinctly underlined for the unspecialized economic agents, the ones that carry out an environmental activity as a secondary or auxiliary activity, and for the specialized economic agents, the ones that posses a department which has environment protection as a main activity.

In 2009, expenditure on environmental protection at national level was approximately 12, 2 billion lei, representing 2,4% of GDP compared to 2,8% in 2008 and 2,7% in 2007. Based on these data we can see that the total spending on environmental protection to producers, have a significant share of expenditure made by specialist producers (64% in 2009, 65% in 2008 and 72% in 2007) against the by non-specialist producers (36% in 2009, 35% in 2008 and 28% in 2007). In 2008 compared with 2007 the share of costs incurred by manufacturers specializing in total expenditure on environmental protection has increased in absolute size to 1.288.880 thousand and relative size by 18%, followed in 2009 compared with 2008 they decrease in absolute size 1.377.080 thousand and relative size by 17%. Analyzing the other component considered, namely environmental protection expenditure by non-specialist producers, it is noted that there was a significant increase in the period 2008-2007. So in 2008 compared to 2007 they increased by 1.773.103 thousand, in absolute and in relative value by 65%, followed in 2009 compared with 2008 they recorded a decrease in absolute numbers of 586.927 thousand, or 13% in relative numbers.

The explanation of this evolution is given by Romanian adhesion to the European Union and the necessity of economic agents to abide by the environment requirements imposed by the communitarian-aquis.

The involvement of Romanian accounting in activities of environmental protection has been stronger after the entry into force on January 1st, 2010 of *Order no. 3055/2009 for the approval of Accounting Regulations consistent with the European Directives*, which also includes aspects concerning the environment, such as:

- Inserting a new account, namely account *652 "Expenditure on environmental protection"*. With this account is recorded environmental protection expenditure recorded in the relevant period, for example, environmental taxes paid, the certificates of emissions of greenhouse gases effect purchased.
- Moving off balance sheet the received certificates of greenhouse gas emissions, which don't have a determined value and, therefore, can't be recognized in balance sheet accounts – account *806 "Certificates of greenhouse gas emissions"*.

In our opinion, the insertion of only these two accounts is not sufficient because they are not enough to reflect expenditure on separate elements of materials, wages, contributions, machineries, which incurred by the company for environmental protection.

8. CONCLUSIONS

Without claiming to exhaust the topic, the primary objective of this scientific approach was to underline certain aspects about environmental accounting and about

its main object of study, environmental costs, as well as the manner in which accounting regulations and Romanian economic agents are getting involved in environmental issues.

Of the presented one can see that accounting development in recent years, were focused on environmental accounting, accounting research in the field of environmental accounting have been and continue to the detriment of social accounting research; environmental financial accounting, environmental reporting continues to represent the principal interest in research in environmental accounting, but we noticed a growing interest to other sub domains such as environmental management accounting, environmental audit; in terms of research in Romania on environmental accounting, these are still early but however it is noted an interest in this area.

As noted earlier, the term environmental accounting has three distinct meanings:

- Environmental accounting in the context of national income accounting, refers to natural resource accounting, which can entail statistics about a nation's or region's consumption, extent, quality, and value of natural resources, both renewable and non-renewable.
- Environmental accounting in the context of financial accounting usually refers to the preparation of financial reports for external audiences using Generally Accepted Accounting Principles.
- Environmental accounting as an aspect of management accounting serves business managers in making capital investment decisions, costing determinations, process/product design decisions, performance evaluations, and a host of other forward-looking business decisions. Environmental accounting can be employed by firms large and small, in almost every industry in both the manufacturing and services sectors. It can be applied on a large scale or a small scale, systematically or on an as needed basis.

Using environment accounting has a number of advantages like (Nuță, 2009):

- the possibility of managing more efficiently the flows of energy and materials, including the quantity of wastes, their type and their destination;
- the possibility of better estimating, identifying and managing of general costs and environmental costs;
- obtaining more precise information for starting and sustaining programs for improving environment performance;
- obtaining the necessary information for measuring and reporting the environment performance, for the purpose of upgrading the image of the organization in relationship with all those interested in its activity (clients, employees, government, investors, stakeholders).

Basically, as currently reflected, Romanian accounting techniques is not possible to separate coverage of environmental issues in accounting. Chart of accounts applicable to entities that do not contain separate accounts to reflect environmental issues. Entities whose activities pollute should record separately the expenses incurred for the purchase of machinery and equipment used for environmental protection, their depreciation, with the salaries of staff involved in environmental protection, materials used and other environmental costs. As opportunities for coverage of environmental

issues in accounting such as development plan accounts in the accounts of grade 2 and 3, by introducing new accounts, chart of accounts is not having a limited character. Another possibility is the organization of environmental management accounting, in this situation the development plan accounts are not required but finding the appropriate method of calculation.

In the end, we wish to point out that this paper is only a scientific approach meant to highlight a number of aspects regarding environmental accounting and environmental costs, and we hope the discussed issues and the reached conclusions will represent a starting point for future studies.

9. ACKNOWLEDGEMENTS

Financial support for this article has been provided through the project *"Bursele doctorale, premiza pentru cresterea competitivitatii si competentelor in cercetarea stiintifica",* ID POSDRU/6/1.5/S/23 implemented under the Sectoral Operational Program for Human Resources Development and financed by the European Social Fund and Government of Romania.

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