

ACCOUNTING AND SUSTAINABLE DEVELOPMENT

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Abstract: *Green accounting brings additional information to the national accounting system and is based on the concept that the wealth of a state is carried out by quantifying both natural and industrial production, and also through the quantification of damages and degradation produced to the environment during the execution of this production.*

Keywords: *green accounting, sustainable development, costs.*

1. General Introduction

Since 2007, when Romania became a member of the European Union, the concept of "green" accounting is emerging ever more because of the mixture between national and European law. We know that all European countries emphasize on the importance of recycling waste, alternative energy, recycling and water remediation etc. which leads to additional public and private costs. This is reflected in the organizations' accounting through various items of expenditure, because the "green" accounting doesn't have a uniform system of recording and reporting.

The definition of this accounting has several levels [¹]:

- Level 1 [²] designs *green accounting* to, systematically, consider facts about the production and restoration of the natural environment by taking into account the flows and risks related to it, in order to present to the user a real image of the organization. This limited role already provides us with many practical problems as the relationship between the organization and its natural environment is complex and it always refers to ecology.
- With level 2 green accounting exceeds its traditional mission of flow and risk recording and presenting information in financial situations. Green accounting must take into consideration not only the accounting of business activities on the natural environment after these have already been produced, but

also the management of certain actions to avoid such incidents.

- Level 3 enlarges the range and considers green accounting more than a passive recording tool which can register immediate or future flows, and also a lever to encourage businesses towards sustainable development.

2. About Green Accounting

Green accounting brings additional information to the national accounting system and is based on the concept that the wealth of a state is carried out by quantifying both natural and industrial production, and also through the quantification of damages and degradation produced to the environment during the execution of this production.

Green accounting is dedicated to both external users and internal management of the firm. Green accounting seeks disclosure of information about the environment within the financial situations (by introducing green headings in the balance sheet, in the income account or in the notes of financial statements), in the intermediate balance sheets (by calculating the net value that takes into account the consumption of natural resources), in annual activity reports or in a specific report regarding the natural environment; all these are aimed at improving the information provided to the users and which should be normalized or standardized. Voluntary publication of information on the

natural environment can be considered an element of internal accounting policy, as well as the choice of methods of information disclosure in the financial statements. National green accounting has as main objective the producing of useful information during the process of decision making.

In industry, the life cycle analysis has given rise to a genuine management accounting of pollutants, generally divided into four broad categories:

- air pollution;
- water pollution;
- waste;
- energy consumption.

In addition, the implementation of budgeting procedures allows the forecasting

Table no.1: Technics used in the green accounting

Information	Financial	Natural	Qualitative
Adapting accounting techniques already used in enterprises	Green headings in the notes to the financial statements		
	Calculating the green costs and budgets		
Creating specific techniques to inform on the natural environment	Green information in annual reports		
		Ecobalance	
	Value net added		
	Balance of natural environment and green dashboard		
Report on the natural environment			

Because green accounting doesn't have a global coherence, we must find the criteria to permit the establishment of accounts which belong to the natural environment. These criteria depend on the objectives of the enterprise and are, therefore, subjective.

However, in recent years there is an emphasis on environment protection and the standards to be met by productive enterprises about recycling and storage of hazardous substances. Because of this, "green" accounting is a goal to be standardized internationally in the next years.

and tracking of green costs, and the assembly of a green dashboard presents, in a synthetic fashion, the significant indicators of the natural environment. The report on the natural environment is distinct from the annual report, in which a company presents its policy on natural environment, its objectives in numerical terms, the means to implement, the results and its commitment regarding environment protection³.

Green accounting implements the following techniques, which are summarized succinctly by Lafontaine in table no 1 :

3. International concerns about Green Accounting

The International Accounting Standard 2 (IAS 2) "Inventories", referring to expenses that may be included in the cost of production, is an indication that *they are included in the cost of production only insofar as they contribute to bringing inventories to the form and place where they are now*⁴. The question, in the present context, is: to what extent costs preventing and combating pollution and social costs can be a part of the cost of production. Can these two costs affect the cost of production? And if so **how**?

The involvement of large EU entities, and not only, in environmental issues shows the concern and interest in modern enterprise environment. In economic terms this concern is the equivalent of a cost or expense. And, hence, their influence on the production cost. In addition, today appeared two important functions of the 21st century company and namely^[5]:

- Social function;
- Ecological function.

The Social function^[6] becomes increasingly important in the competitive context. The social function can not be ignored, and it is necessary to estimate performances not only at economic level but also at a social one. Many of these costs, such as strikes, work accidents, early retirement are not reflected in the accounts. These costs can however be determined if additional production, which would be obtained if these accidents didn't occur, is calculated.

Ecological function. The dependence on the biophysical environment is obvious for each economic activity. "The economic environment is an economic gift of nature." It is necessary that the environment may be considered when developing economic strategies, policies and management decisions. Throughout time, methods of determining the current and future green costs and economic-financial indicators of the environment have been outlined.

The lack of accounting rules governing some phenomena that are related to the environment, require the development of operational accounting systems of the environment. Each organization is involved in pollution of the environment in one way or another, especially those in the construction industry. They must adopt a series of expenses like:

- Costs of pollution prevention;
- Costs related to the assessment and mitigation of pollution;
- Remediation and environmental pollution costs.

These three categories are called green costs (green fee).

Performance measurement is calculated through expected costs (pre-calculated, pre-established) which are then compared with the real ones.

Currently, two approaches to environmental accounting are identified, namely:

1. The functionalist approach ignores environmental issues in the accounting process in such a manner that the initial state of economic reason is preserved. Everything is built on an ideology which excludes natural resources, as well as any other resources that can not be evaluated in a credible manner. Functionalist accounting of the environment favors people more than nature, profit more than invested capital, corporations more than ecosystems, respectively money more than intelligence;

2. The green approach provides visibility of the environmental accounting within the accounting process. Thus, green accounting is not just a passive tool that registers immediate or future cash flows; it is also a lever to encourage entities towards activities and strategies which are a part of the sustainable development.

Although the first green accounting concepts emerged from the period 1971 – 1987 in Romania, this form of accounting showed no interest until 2002, when it started to record an increase in this area of research. The need to apply environmental accounting arose from the attempt to remove the negative effects that appeared in the ecological crisis we face. The 652 account "Costs related to environmental protection" which outlines environment costs is a response to national accounts shortcomings in addressing these issues.

Green accounting is a method of treating environmental information. It evaluates systems, analyzes procedures, verifies the proper functioning of management environment and its internal audit in accordance with EU directives and recommendations. Also, it contributes to environmental improvement by explaining how natural resources can be used in a

sustainable way and it invests in less polluting technology, thus promoting both production processes and less polluting products.

For corporations, environmental accounting is designed to increase both the efficiency and effects of environmental protection measures, and to keep track of expenditures and revenue related to environmental protection, to report and introduce them in financial statements through green headings in the balance sheet. It can be said that environmental accounting allows us to measure the effectiveness of environmental conservation activities, the index of environmental performance and environmental efficiency of companies' economic activities as a part of financial performance associated with environmental measures.

Sustainable development is a responsible and mutual commitment of all parties involved. The entity undertakes to respect both the environment and its partners, in order to develop financial performance through the creation of the global value concept and not by destroying resources. In return, its partners must commit to become socially responsible towards themselves, the entity and the environment.

An effective green balance sheet would be either in the red (a loss) or black (profit). However this would only be after including all internal and external cost categories, such as health problems for workers, emissions and pollution of air, land or water, degradation of the natural environment and depletion of finite resources. Internal and external benefits must also be calculated and quantified using monetary measures. These could include savings from new cleaner technologies resulting in lower pollution and better health, new markets and substitution of raw materials or production processes^[8].

Green accounts are a vital part of corporate social responsibility (CSR) and can help with decision making and triple bottom line (TBL) profitability. Essentially an organisation needs to compare the costs of avoiding or

Although sustainable development was initially meant to be a solution to the ecological crisis caused by intense industrial exploitation of resources and the continued degradation of the environment, currently the concept expanded to life quality in its complexity, both economically and socially. Subject of sustainable development is now the concern for justice and equity between countries, not only between generations.

Corporate Social Responsibility (CSR) continues to be a relatively new domain for companies in Romania.

The establishment of the **Division of Corporate Social Responsibility** within the Ministry of Labour, Family and Equal Opportunities, gives an answer to the European Directive regarding corporate social responsibility^[7].

Corporate Social Responsibility encourages employers to consider the interests of all parties, namely of:

- shareholders or associates;
- communities;
- customers;
- employees.

Corporate social responsibility also encourages **voluntary involvement of social**

preventing environmental damage against the cost of remedial activities.

Using a framework of green accounting would mean that investment decisions are made by comparing the overall private and social costs against the private and social benefits. Using a life-cycle assessment (LCA) means that organisations can make decisions based on calculating environmental impacts at every stage of a product's life, from raw materials, through production, distribution and final disposal or recycling.

With the EU set to introduce more environmental accounting at national level – see Box – this could filter down to the corporate enterprise level. Increased consumer, citizen and shareholder awareness of sustainable green growth requires a pricing policy that fully reflects the true costs of development. Transparent green accounts

would be a key component of a policy based on Beyond GDP.

The monetary accounting for this approach was performed including water pollutants, air pollutants, industrial solid wastes, and urban domestic wastes, as well as the economic loss by accidental releases of chemicals. This approach might be referred to as "source-oriented" so that it can be applied to both different regions and different industrial sectors^[9].

Actual treatment cost refers to the cost by polluters, say by industrial enterprises that had been expended in pollution control to make effluents meet emission standards or mass loading control requirements. These costs include that for the treatments of industrial wastewater, waste gas, and solid waste, livestock wastewater, urban household wastewater and solid waste.

The accounting for both actual and imputed treatment costs cannot cover all the costs in environmental deterioration. The second approach, environmental degradation cost approach, is from the other end to supplement the above two approaches. This approach is based on comprehensive surveys on pollution losses, and utilizes special methods to attach monetary values on the physical impacts, such as the costs of drop in crops output, impaired health, ecological disturbance, and then identifies the environmental degradation cost that should be subtracted from the GDP.

The great challenge faced by economies today is to integrate environmental sustainability with economic growth and welfare by decoupling environmental degradation from economic growth and doing more with less. This is one of the key objectives of the European Union, but the consequences of climate change and the growing demand for energy and resources are challenging this objective. It is now time to move towards an energy and resource efficient economy.

Sustainable consumption and production maximise business' potential to transform environmental challenges into economic

opportunities and provide a better deal for consumers. The challenge is to improve the overall environmental performance of products throughout their life-cycle, to boost the demand for better products and production technologies and to help consumers in making informed choices.

On 16 July 2008 the European Commission presented the Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan. It includes a series of proposals on sustainable consumption and production that will contribute to improving the environmental performance of products and increase the demand for more sustainable goods and production technologies. It also seeks to encourage EU industry to take advantage of opportunities to innovate. The Council endorsed the Action Plan in its conclusions adopted on 4 December 2008.

A range of policies at EU and national level already foster resource efficient and eco-friendly products and raise consumer awareness. The proposals complement these policy instruments and provide measures where gaps exist^[10].

The building blocks of the European Union's policy on sustainable consumption and production are listed in the Sustainable Consumption and Production drop down menu, on the left of the screen. These proposals are an integral part of the European Union's renewed Sustainable Development Strategy (EU SDS) which reinforces the EU's long-standing commitment to meet the challenges of sustainable development and builds on initiatives and instruments at EU and international level such as the United Nations' Marrakech Process.

Biological diversity - or biodiversity - is one of the key terms in conservation, encompassing the richness of life and the diverse patterns it forms. The Convention on Biological Diversity (CBD) defines biological diversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of

which they are part; this includes diversity within species, between species and of ecosystems".

Europe hosts a unique set of natural diversity, including hot spots like the Mediterranean. The 12 new Member States bring new biodiversity riches to the EU. However, biodiversity loss has accelerated to an unprecedented level, both in Europe and worldwide. It has been estimated that the current global extinction rate is 1000 to 10000 times higher than the natural background extinction rate. In Europe some 42% of European mammals are endangered, together with 15% of birds and 45% of butterflies and reptiles. The Arctic fox, the Iberian lynx, native squirrel are all under serious threat. There are only a few hundred lynx left, for example, living in four pockets of land in Spain. Cut off from one another, the big cat communities are being weakened by inbreeding.

Biodiversity matters for *Ethical, Emotional, Environmental and Economic*. Ecosystems have intrinsic value. They provide emotional and aesthetic experiences. They offer outstanding opportunities for recreation. They clean our water, purify our air and maintain our soils. They regulate the climate, recycle nutrients and provide us with food. They provide raw materials and resources for medicines and other purposes. They form the foundation on which we build our societies.

4. Conclusions

Resources are the backbone of every economy. In using resources and transforming them, capital stocks are built up which add to the wealth of present and future generations. However, the dimensions of our current resource use are such that the chances of future generations - and the developing countries - to have access to their fair share of scarce resources are endangered. Moreover, the consequences of our resource use in terms of impacts on the environment may induce serious damages that go beyond the carrying capacity of the environment. These effects

risk being aggravated once the developing world has taken up growth and resource use similar to the industrialised countries.

This initiative finds its origin in the strategy on the sustainable use of natural resources. The Panel aims to provide scientific evidence to underpin the delivery of policies on resource efficiency. Made up of leading scientists, it was set up in 2007 under the auspices of the United Nations Environment Programme (UNEP) to provide authoritative and independent advice to decision makers globally. The first report "Assessing biofuels" was launched on 16 October 2009. The Panel will deliver further reports on topics including the decoupling of environmental degradation from economic growth, the environmental impacts from production and consumption and metal recycling.

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