Environment management accounting in Romania companies operating in rural tourism

Paula Stoica

Abstract— Economic agents in rural tourism are more and more concerned about achieving and demonstrating an environmental performance, clearly by setting towards this sense environmental objectives and adopting policies so that they can decrease the impact that their own activities and services have on the environment. These aspects are written more and more stringent in the context of legislation, of sustainable development and of the measures meant to encourage the environmental protection.

National environmental accounts have the same role as the traditional national accounts, facilitating diagnosis of the performance of past economic activities and the adoption of policies that would answer this diagnosis.

National environmental accounts allow the evaluation of sustainable and non sustainable aspects of the economic performances of a nation considering the environmental impacts and their repercussions. These favor the use of economic indicators corrected with the environment in the policies analysis and substantiation, and the use of physical accounts in decision making.

Keywords— Concept of eco-efficient, environmental accounts, rural tourism.

I. INTRODUCTION

The environment accountancy has been set up in Romania as a result of the incapacity of national accountancy to explain the way in which the natural resources can be used in a sustainable manner, finally leading to the improvement of the environment.

The set up of the account 652, Costs for the protection of the environment, an account introduced in the General Accounts Plan through OMF3055/2009 and which is the means to keep track of the costs concerning the protection of the environment for a certain period of time (the paid environment taxes, the purchased certificates for gas emission or the costs registered in advanced concerning the event in development) comes as an answer to the deficiencies of the National accounts in approaching these aspects.

For the rural tourism, the environment accountancy tries to coordinate and evaluate the activity developed by the entities activating in the rural tourism by offering the possibility of using an accountancy system integrated with the environment and providing durability to this activity. The environment protection is a global concern, and on the level of the rural tourism structures an efficient administration of the environment is necessary, in compliance with the regulations of the Romanian Agency for Environment Protection providing the technical support for sustaining these normative acts, the sartorial environment strategies and policies in accordance with the communitarian acquis and based on the concept of long lasting development.

Thus, the activity of these rural tourism structures must be focused on and directed towards developing tourist services that do not have a result the destruction of the environment by: controlling the air pollution, using the alternative sources of energy (wind, solar, etc), rational use of the natural resources which are inevitably limited.

The environment accountancy in the rural tourism comes as a basic managerial instrument, as it can improve the performance of the rural tourism structures in relation to the environment, cost administration and control, investment efficiency in less polluting technologies, promotion of some tourist activities with limited impact on the environment and so on.

Guesthouses and managers usually believe that environmental costs are not significant to the operation of their businesses. However, often it does not occur to them that some production costs have an environmental component. By identifying and controlling environmental costs, environmental accounting systems can help environmental managers to justify these cleaner production projects, and to identify new ways of saving money and improving environmental performance at the same time.

This report tries to underline the role of the financial – accounting information in the environment reports of the rural tourism structures, information that supports the decision of the owners of these entities and creates a favorable image of these structures abroad.

2) PROBLEM FORMULATION

For defining environmental accounting, several aspects have been considered, such as insurance, taxes, regulations and external financial information. The environmental accounting is interlinked with two basic functions of management accounting: planning and data collection, reporting. In the case of planning, environmental accounting uses prevision analysis to measure future impacts on environment, such as target costing or life cycle method. In
the second case, environmental data collection and its reporting to management is based on an efficient analysis of data for substantiating decisions.

Starting from the above-mentioned considerations, the object of environmental accounting consists mainly in the identification and measuring of raw material costs and environmentally specific activities and the use of this information for drawing up reports and internal analyses necessary to the company management for making environmental decisions.

In the rural tourism, the environment accountancy must act as a continuous and not periodic evaluation instrument, as the effects of the impact of this activity on the environment needs constant monitoring. The approach of the environment accountancy must be a holistic one, taking into account the influence and secondary effects of the rural tourism activity on other factors affected by the changes entailed by the managerial approaches.

The environmental accounting represents a method of measuring the performance of any type of organization (governmental departments, industrial producers, etc.) in relation to the environment and in economic terms. The environmental management accounting is a subsystem of the environmental accounting, used in general to offer informational support for the decision-making process of a company, even if the obtained information can be used for other purposes, too.

At the level of an organization, the environmental accounting is used in order to identify measures that promote the sustainable environmental management. The implementation of measures that ensure a balance between the decrease of the costs and the decrease of the impact on the environment is a crucial aspect for the sustainable environmental management. The diagram presents the general scheme of the environmental accounting.

Figure no.1

Benefits of Environmental Accounting

<table>
<thead>
<tr>
<th>External Benefits</th>
<th>Internal Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Assumed economic benefits</td>
<td>4. Benefits from the prevention of risks</td>
</tr>
<tr>
<td>3. Benefits for the clients</td>
<td>1. Effective economic benefits</td>
</tr>
</tbody>
</table>

For the rural tourism structures, the environment accountancy brings relevant information for their management, increasing the social and environmental responsibility, as well as the business, social and environmental ethics. The environment accountancy already takes into consideration the social cost and benefit as reference directions, based on which the correlated crises can be managed.

After Romania joining the European Union, the need to use the environment accountancy has become more obvious than ever. An increasing interest has been noticed within the last years as well as a major concern for the protection of the natural environment. The management of the entities in the rural tourism field is bound to focus on and direct the activity towards creating biodegradable, recyclable services and products and trying in as much as possible to reduce the air pollution (by giving up the traditional means of heating with woods and coal), the amount of electric energy used (by gradually introducing alternative sources of energy, the solar and wind energy representing opportunities to make the tourist activity environment) and using the natural resources in a rational manner as they are inevitably limited. The integration of the environment in the life of the rural tourism structures means to take it into consideration on a technical, economic but also financial level. The environment accountancy is a managerial instrument that can be used in numerous purposes among which:
- improvement of performance in relation to the environment;
- cost administration and control;
- investment efficiency through less polluting technologies;
- promoting less polluting production processes and products, etc.

Figure no.2

3 PROBLEM SOLUTION

Three major economic transformations have been noticed for the last century: industrial revolution followed by the technological one and than by the globalization process and the age of the new economy.

As a visionary change, the new economy is being approached today through the ecology economy. The main resource of the new economy is the knowledge as intangible actives which can not however function without the tangible, classic resources necessary for the production activity.

Within this context new concepts emerge generated by the concept of the ecologic economy, developed by the financial...
management of the entities, like the environment accountancy concept or the environment management accounting EMA.

The global fundamental issue nowadays is the use of the natural resources in a sustainable way, covering the needs of the present generation administrating the resources of the future.

The rural tourism through its actions needs to give up its “civilizing” mission on the nature and act to fit its activity within the potential and real parameters of the planet as compared to the ideal or potential ones.

There is presently a world crisis generated by previous waste of resources as the world has not maintained or replaced the nature’s free action of reconstruction or purification.

At the level of the entities including those in rural tourism, the environment accountancy modifies the definition of the environmental costs.

The environment accountancy emerged in Romania between 1971 and 1987 but it has only risen interest after 2002 when the research in this field has increased. The introduction of the environment accountancy in Romania was necessary for reducing the negative effects due to the ecologic crisis and for answering the deficiencies of the National accounts in approaching this aspect. Thus, the introduction of the general accounting plan 652 “Costs for the protection of the natural environment” has made up for these lacks of the Romanian accountancy and represents a way to treat the environment information by keeping the accountancy of the costs needed for the protection of the natural environment for a certain period of time (paid environmental taxes, purchased certificates for gas emission or costs registered in advanced in relation to the current event).

The environment accountancy evaluates the systems, analysis the procedures, verifies the good functioning of the environmental management and its internal audit, in compliance with the E.U. regulations and recommendations. It also contributes to the improvement of the environment by offering an explanation as to the way in which the natural resources can be used in a sustainable way and has also the role to invest in less polluting technologies and promote the less polluting production processes and products. For the rural tourism structures in Romania, the environment accountancy supports the increasing of the efficiency and effects of the measures to protect the natural environment and keeps an accountancy of the costs and income related to the protection of the natural environment, reports and reflects the financial situations by introducing environment fields in the balance sheet, in the profit and loss account or in the explanatory notes.

Thus, the environment accountancy measures the efficiency of the environment preservation activities, the environment and economic activities performance index of the Romanian rural tourism structures, as part of the financial performance associated to the environment measures.

These costs generated by the natural environment protection are costs that appear to ensure the conformity to regulations concerning environment preservation and to prevent their braking (Wilmuhurst, 1997).

According to David Boje (1999), the approach of the environment accountancy insures the visibility of the environment accountancy within the accountancy process. Thus the environment accountancy is not just a passive instrument to register the immediate or future certain or potential flows, but also an instrument to determine the entities (including the rural tourism structures) to develop durable activities and strategies. One can state that the main object of the environment activities is to produce useful information in the decision making process insuring the durable development of the activities for the entities activating in the rural tourism and not only and to analyze the costs and benefits that the impact of the environment has on their activities, contributing to the acknowledgement of the high level of environment taxes, capital and operational costs generated by the use of pollution control equipments.

The numeric expression of all the factors consumed to produce environmental services under the form of a costs paid by the producer of environmental services, the environmental costs in the rural tourism field may be reduced or avoided by pollution preventing practices such as:
- re-projection of the products and services;
- replacement of some materials used in the activity developed by these rural tourism structures.;
- improvement practices on the operational and maintenance level.

The following elements of environment analysis can be considered: products, services, activities, processes and technologies. The chart below presents both the environment analysis elements and the identified forms of impact, including action taken as a result of the environment analysis:

![Environment analysis elements](image-url)
The incorporation of the real value of the natural resources as well as of their use and degradation, offers a better priority allocation, thus helping to eliminate the sources of the major environmental crisis.

Except for the natural disasters and some contextual causes, the degradation of the natural environment and natural tourist resources is generated by two major groups of factors:
- factors that are the direct result of the economic development;
- factors that are generated by the use of the natural environment for tourism and entertainment.

Factors contributing to environmental degradation

Under the present conditions, the natural resources are a restrictive factor both in ensuring the raw materials, fuels, energy and in damaging the natural environment. The economic development can not happen without an economic-ecologic increase, based on multi-energetic use and a superior recycling of the raw material and energy by complying with the laws and the reproduction capacity of the nature.

Like any other human activity, the rural tourism, as a consumer of tourist spaces and resources, implicitly participates to the damaging and pollution of the natural environment of the natural tourist potential either by the direct pressure of the tourists on the scenery, flora and fauna or other tourist objectives that can be partially or totally damaged, or through misconception of an exaggerated exploiting of some areas, locations or tourist objectives. As the rural tourism in Romania is gradually developing, the issue becomes more and more obvious, the tourist negative impact on the environment being noticed as increased from one year to another. The numerous harmful activities, especially in the area where there is a high touristic concentration, if they do not perform equipments or provide specific facilities, necessary to practicing the various touristic activities or paying visits to the touristic objectives. They are first of all determined by the touristic uncontrolled flow in the rural touristic areas which lie outside the marked trajectories, leading to the destruction of the vegetation and of the flora, to the tearing down of the trees, destruction of the baby trees and the natural seeds, falling down of rocks, of stalactites and stalagnmites of the caves, etc. The damage can also cause fires, preventing the plants regeneration, soil leveling, poaching and disturbing the biotopes specific to the hunted and in general to the fauna, sometimes leading to species disappearance. Intensive visitation, candle-lighting and the lack of technical air-conditioning or anti-pollution devices have caused degradation of some frescoes and pictures of the inside of some historical and art monuments (Bucovina), and the lighting in the past of some caves have caused final destruction of the chalk deposits inside some caves (Ialomita Cave, etc.). A special situation represents the degradation or the exhaustion of the sources of spa mineral substances, characterized by a great vulnerability to exogenous factors, any unfavorable intervention to them can engender the change of the physical and chemical parameters, on the basis of which they were declared therapeutic resources (Vatra Dornei, Buzias, Calimanești, Sovata, Ocna Sibiului, Ocna Mureșului etc.). Non-compliance and sometimes non-establishment of the of the perimeters from the hydro-geological and sanitary point of view and the permission of performing economic polluting activities within the limits of these areas, have also led to degradation of the spa resources (the lakes Nuntași, Techirghiol, Amara, Balta Albă and Lacul Sărat) because of the irrigations, chemicals used in agriculture and in industrial residuary waters. The apparition and the development of eco-economy was realised in most of the countries. Brazil became one of the most important players on the scene of biology, acquiring approximately 44% of needed energy from fuel regeneration. While the global average was 13% and European average was 6.1%. China became. China became a world leader in wind and solar energy and will invest in the future 10 billions of dollars in energetic regeneration (reducing the energy consumption with 20%) ranking second after Germany. Between the concept of new economy in it’s form of ecological economy and new concepts generated and developed in the Financial management of companies, like the EMA concept (environmental management accounting), I’a direct bond. Environmental Managerial Accounting – EMA, is a relatively new tool in environmental management. EMA can be defined as the identification, collection, estimation, analysis, internal reporting and use of materials and energy flow information, environmental cost information for both conventional and environmental decision-making within an organization. Thus EMA incorporates and integrates two of the three building blocks of sustainable development -
environment and economics - as they relate to an organization's internal decision-making.

The costs generated by the company-environment relationship are collected from among the following:
- the acquisition prices (or production costs) for machinery, equipment, means of transport,
- or the acquisition prices of ecological raw materials which, being higher than the ordinary;
- ones, ensure an increased level of environmental protection and, consequently, they ensure;
- the prevention, decrease and even elimination of costs generated by environmental pollution;
- fees or penalties resulting from polluting the environment.

The structure of the costs deriving from the company-environment relationship could be the following:
- the costs of preventing the noxious effects over the environment resulting from the company’s activity;
- the costs of limiting or abolishing these effects;
- the costs of regenerating the affected environment.

Starting from the fact that, in Romania, the environmental protection for tourism in general and for the rural tourism rural is essential, dictated by the uncontrolled touristic flow in the last years, and for the fact that these natural resources represent “the raw material” rural tourism works with, we outline the idea obtaining the profit represents the motivational factor of the economic agents who activate in this field. In case of a growing contradiction between the uncontrolled exploitation of the rural area and of growing benefits from the rural tourism from the point of view of its latter harmfulness on the natural resources, the economic agents in the rural tourism will have to be aware of the fact that obtaining a long-term profit can be achieved by protecting the natural resources (which constitute the basis of the rural touristic activity), and this profit is one of the main valuable asset and the source of the necessary income for financing the activity of environmental protection.

The system of national accounting can offer an image of the relation existing between environment and economy, unifying the information offered by the entities concerning the environment. The first “satellite accounts” of the environment were published in 1986. Those accounts were covering the next areas: the continental waters administration, the protection of maritime spaces, or hunting.

In the actual stage regarding the reflection of national accounts at the international level, a planetary evaluation of the natural patrimony and an evaluation of the deterioration suffered by the environment are still very difficult to do. The preference is to elaborate physical accounts able to describe the whole natural patrimony of a country with its different components, presenting, on the one hand, the uses of natural resources, and, on the other hand, presenting the degradation of natural environment caused by the economic activities.

Just as with financial accounting where the double effect is at the basis of transactions’ logic, in the case of ecological accounting the same principle operates: affecting an element corresponds to replacing and counteracting the deficiency or the evil done. The synthesis of this information can be reflected in the annual financial statements by introducing some green headings. An example of an ecological balance sheet, adapted by Professor Neculai Tabara after reading the example presented by Raffegeanu in the work Mémento Practique Francis Lefebvre Comptable, presents the next headings:

- inventories for the environment protection (equipments used for the environment protection, equipments for the recycling or the economy of energy, equipment which reduces the pollution and other negative effects);
- flow associated to the usage of equipments destined to protect the environment (the amortization of equipments; works, supplies and exterior services; staff expenses attributable to the environment protection activities; the purchasing cost of the energy destined to the maintenance and to the functionality of the equipments; pollution royalties paid; depollution bonus received; subsidies and loans with special interest rates acquired for the financed equipment; provisions for risks);
- flow associated to the production activity (the purchasing cost of the energy and raw material on the physical unit of sold product; purchasing and sale of lands);
- natural patrimony of the enterprise (built and non-built land areas);
- flows (the volume of spent energies on the physical unit of sold product; the volume of net emissions of pollutants and residue inventories; sold and bought land areas).

By using part of the profit obtained from the housing structures of rural tourism to protect the environment, this fact represents not only an activity of preserving the environmental quality and the protection of the environmental resources, but also the source of the on-going development of the rural tourism. The development of the touristic services involves profound changes of the environmental factors, their classification in the margin of the free services and the attachment of an economic value. This fact involves that in the
structure of the value of the respective touristic service there should be included the expense on the living labor and turned into account for the environmental protection, and its price reflects its ranking as costs on the environmental protection. The result of all these activities of the housing structures in rural tourism related to the environmental policies will be performed from the environmental costs, by considering all the relevant and significant costs for the rural touristic activity. In the area of the rural tourism, Environment Accountancy has the following intervention fields:

- Evaluating the yearly environmental costs/expenses;
- Establishing the prices of the touristic services;
- Establishing the budget for the activity of environmental protection within the respective touristic entity;
- Calculating the costs, savings and benefits resulted from the implementation of some projects of environmental protection;
- Establishing some quantifiable performance targets;
- Doing some clean services, preventing pollution and developing projects for the environmental protection;
- Achieving some investments by promoting some expenses for environmental protection;
- Reporting environmental data to the statistical agencies or the local authorities.

![Fields intervention environmental accountancy in rural tourism](image)

In the eco-economy context, let’s not forget the importance of the ecological side. The untouchable actives – the knowledge – The main source of the new economy, but these cannot function in the absence of touchable resources, classics, indispensable activities of production. Mankind is the result of evolution in which have accumulated long therm residue – materials and materials – of all the models of existence that have come, and when put together they form a barrier for the progress sought by actual generations. Defeating this is inconceivable without the profound and rapid progress of knowledge and it’s promotion in society, especially in economy. Economic science and engineering of all kinds will have to put the base for a new economy, while taking into account the following premises:

- There is a strong situation of crisis generated by the previously waste of resources;
- The separation of man from nature and his actions altered what existed and the man didn’t knew, could not, nor has the question to maintain or replace the recovery and purification accomplished by nature with no cost.
- Taking over live models from nature involve that negative effects are not to be produced, and if this happens, to be annihilated without generating other ones.
- Must conceive all human existence in economic condition of it’s own closed circuit.
- From which resources are to recover without loss, and the find a proper use for the waste and the remains.
- To seek new resources to replenish the needs of normal circuits, from which resources are to be recovered without loss.
- To give up the “civilizing” mission of man against nature and to act on the idea that man and mankind must accept the behavioral changes necessary for framing his existence in the real parameters of the planet, not in the ideal or inferred ones. To give up the “civilizing” mission of man against nature and to act on the idea that man and mankind must accept the behavioral changes necessary for framing his existence in the real parameters of the planet, not in the ideal or inferred ones.

It’s necessary to ensure coherence of people’s actions on a global level, to stop the rising of negative effects and than it’s decrease. Imminent environmental policies in the small reflection of individual economy to each country and the micro level of each company is obvious.

At the company level, in the field of management accounting, the context of a new ecological economy will bring a change in defining new costs of environment.

Under the evolution of economical growth, appear factors with reverse influence, involving additional investments cost, such as:

- Transition to the exploitation of deposits with low contents of useful materials.
- The recovery and capitalization of re-usable resources.
- Ensuring the protection and improvement of natural environment.
- Between the economic growth and the environment it’s a tight bond. The economic process represents a human intervention in the natural environment. From the economic process to the natural environment we can talk about it’s environmental consequences, such as:

  - The exhaustion of natural resources;
  - Polluting the environment
  - The entropy increase of natural environment

Conversely from the natural environment to the economic process a series of ecologic restrictions appear, such as:

Internalisation of negative externalisations

The creation of economic non pollution and anti pollution economic structures

Natural resources in actual conditions are a restrictive factor about ensuring raw materials, fuels, energy, but also under the aspect of natural environment deterioration. Economic growth, so far, rely on regenerative resources or the unlimited capacity of the natural environment to self regenerate.

It shows that human activity exceeded the regeneration capacity of nature, entering into contradiction with the natural cycles that sustain economic and biologic life. Economic
growth can’t be realized only as an economic-biologic increase, based on bienergetic consumption and a superior recycling of raw material and prime energy, in which the human must respect the laws of nature and to know the reproductive capacity of the natural environment.

4 CONCLUSION

Within the rural touristic guesthouses structures, the environmental cost management constitutes a new approach for calculating costs aiming at organizing the services offered to tourists from one end to the other in terms of the flow of efficiently structured material and information. As compared to the old approach of the input flow where they followed the processes by which they added value to the touristic services offered in the rural area, at the moment they also take into consideration the loss registered in this activity. The aim of such a system for calculating costs from touristic services is not that of calculating the environmental costs achieved from the rural touristic housing structures, but to obtain information in so far as the granting of the total cost from the services offered.

Generally speaking, the harms caused by the rural tourism to the environment in Romania, are, first of all, due to the lack or the low level of the facilities or their organization for the touristic exploitation (visitation, performing specific activities etc.). Another cause which might lead to the environmental destruction of the touristic potential as a result of performing some improper touristic activities also constitutes improper projection of the investment touristic objectives, by establishing inadequate sites for the touristic material basis, achieving anesthetic buildings, not suitable for the ethnographic, architectural or natural specificity of the touristic area, intensive activity on the touristic buildings which might affect the ecologic balance of the respective area. Unreasonable exploitation of some areas of great touristic attractiveness, especially in week-ends, in case of the absence of facilities in other area which could attract tourist flows in peak times when there is a "maximum level" of demand (facilitated perurbane areas, not sufficient from the point of view of the number and housing capacity, touristic resorts situated near big cities).

• Building some networks clearly limited by paths and forest roads or climbing means which by their high density of the work they imply (deforestation, protection walls, bridges, viaducts, pillars, etc.) affect the landscape charm and beauty.

• Improper facilities for cave-visiting which executed without following the specific technique for such work produce their total or partial degradation.

The principles and concepts of the environment accountancy are also important for the following:

- Evaluating the projects and investments for the environmental protection;
- Reducing the costs of the refuse produced within the touristic housing structure;
- Reducing the costs for the water used within the rural tourism entities;
- Reducing the costs for the energy in this field activity.

The benefits that the environment accountancy in Romanian rural tourism

The benefits that the environment accountancy, through its tools can bring about to the structures in the rural tourism in Romania are the following (see picture 1)

- The increase in the activities for developing new services and products, working technologies and procedures which do not cause environmental destruction;
- The increase in the quality and consistency of the information provided to the management on the environmental protection;
- The increase in the efficiency of using the natural resources becomes one of the most important objectives of the rural touristic entities.

Thus, the concept of eco-efficiency at the level of the rural tourism housing structures in Romania will reflect on the cost reduction and the environmental impacts through:

- Efficient use of energy, water and natural resources, inevitably exhaustible;
- Planning and implementing investments on the pollution control (heating systems and solar lighting systems, Aeolian systems of producing electric and thermal energy, etc);
- Evaluating the total annual revenues from the investments in the eco-efficiency activities.

Thus, by such measures, strategic position of the rural tourism housing structures will consolidate, and in the long run, by projecting “green” products and services, competitive advantage will appear, by estimating the internal costs, through the future regulations, and by reporting to the interested parties (communities, tourists, local investors) of the different data concerning relevant environmental issues concerning the touristic activity performed by these rural tourism housing structures.
Reflecting the concept of eco-efficient in the activity of tourist accommodation in rural areas of Romania

The ecological environment accounting attempts to measure the performance of an organization and of a national economy in relation to the environment and, in economic terms, by means of the monetary evaluation of environment costs associated to the development and functionality activities, and the evaluation of economic benefits brought by an advantageous environmental management and other measures. 

References:
[12] Dumitran, M., Caraiani, C., Dascalu, C. (2006), From Traditional Accounting to Environmental Accounting - a Demand for European Integration, ASE, Bucharest (Romania).


