THE INFLUENCE OF ENVIRONMENTAL ACCOUNTING IN THE RURAL AREAS

INFLUENȚA CONTABILITĂȚII MEDIULUI IN ZONELE RURALE

ELENA TONEA, MONICA BUTNARIU, CORINA RUŞEŢ, CORNELIA TONEA

Agricultural and Veterinary University of the Banat, Timişoara, Romania

Abstract*: If the traditional accounting focuses on accounting for capital assets, costs, yields valued and sold in the market, the environmental accounting intends to do the same with non-marketed capital assets, costs and yields, that is, externalities. While the farm level nutrient balances are based on an input-output comparison, the nutrients entering the farm within inputs are compared to nutrients leaving the farm within the sold products environment.*

Rezumat: *În timp ce contabilitatea tradiţională se concentrează asupra bunurilor, a costurilor, a evaluării terenurilor şi a vânzării acestora pe piaţă, contabilitatea mediului intenţionează să facă acelaşi lucru. Un exemplu in acest sens este găsirea unei soluţii pentru produsele care intra în fermă şi reflectarea lor în ieşiri.*

Key words**:** *economic performances, management, decisions*
Cuvinte cheie: *performanţe economice, management, decizii*

INTRODUCTION

The establishment of an environmental accounting system requires the total overview of the flows of materials and energy within the business. Full surveys about the flows of materials and energy within a farm system have not been generally used yet, although attempts have been made in this direction.

At the same time, relatively well developed methodologies and research results are available for a number of nutrients – nitrogen, in particular, - under the name of nutrient accounting, and farm nutrient balances.

The most widely used form of farm-level nutrient balances is the so-called „farm gate balance". This is set up comparing the nutrient contents coming into the farm with the inputs (fertilisers, manures, fodders, animals, seeds), and those leaving the farm with the outputs, such as crops, animal products, or live animals.

Farm-level nutrient balances are based on the same theoretical principles, their primary aim is to calculate the nutrient surpluses as the difference between the amounts of nutrients entering and those leaving the farm.

THE CONCEPT OF FARM-GATE BALANCE

The concept of farm-gate balance, however, suffers from an inherent weakness, namely the way it handles the change of stocks. Due to the unsold products at the end of the farming year the differences in the nutrient contents of purchased and sold materials may be much higher than in the former year. However, the major part of this difference is not a loss, nor is it stored in the soil, but is contained in the unsold stocks of the farm.

This is particularly important when farm gate balance is used as the foundation of environmental taxes.

The first step in the analysis was to survey the existing accountancy system in the cooperative, to identify the possibilities and requirements for establishing a nutrient accounting sub-system within the present structure of data recording.
Another important area of the future research is the clarification and the precise definition of the terms and concepts used in the field.

The external nutrient balance, that is, the farm gate balance, cannot be sufficient then to assess the nutrient management practice of the farm business, and its impact on the environment.
To solve the problem two methods were used to assess nutrient balances and nutrient surpluses for the three macro-nutrients:

Nutrient surplus is calculated as the difference between the annual purchases and the annual sales of the farms, and this is called external nutrient balance. This is basically the same as the generally used farm-gate balance.

Nutrient surplus is computed as the difference between the annual yields and the annual amounts utilised in the farm, which is called internal nutrient balance.

In order to outline briefly the essential difference between traditional accounting and environmental accounting the following points may be emphasised.

While traditional accounting focuses on accounting for capital assets, costs, yields valued and sold in the market, environmental accounting intends to do the same with non-marketed capital assets, costs and yields, focusing on externalities. Environmental accounting attempts to create an integrated accounting system which brings together the items handled by traditional accounting and items related to environmental assets, costs and performance.

THE MEANINGS OF THE CONCEPT OF ENVIRONMENTAL ACCOUNTING

The concept of environmental accounting has several different meanings in the relevant literature. Many researchers deny the justification for the concept saying, that natural values and assets cannot be handled as the object of annual reports, or as factors of production to be transformed into profits. Furthermore, the meaning of environmental accounting considerably differs among the supporters of the concept.

A number of authors use the concept in a narrow sense, focusing only on the valuation and recording of external economic impacts. According to the views of other researchers the term includes elements of traditional accounting which are aimed at making the activities related to the environment more transparent. On top of this another layer of interpretation may be the level of the business unit (farm, industry, regional, or national level) for which the concept is applied.

Several researchers distinguish three levels of environmentally conscious farm accounting. The first level is based on the records and reports arising from traditional accounting, in which the items related to environmental protection are distinguished and handled separately.

Some of the researchers of the field consider only the second level to be the „true" environmental accounting, also called „environmental cost accounting", which handles external impacts related to business activities and not accounted for in the traditional accounting framework.

The third level is the integration of the traditional and the environmental accounting system, focusing on the allocation of external environmental costs to activities and cost bearers. This approach is often referred to as „full cost accounting".

For each level the distinction between „financial environmental accounting" and „managerial environmental accounting" can be used in the same way as in traditional accounting.

It is reasonable to distinguish also between a set of „passive" methods and of „active" ones, the latter including accounting tools and methods suitable not only for reporting the information related to environmental protection, but for guiding the farmers, without the aid of other policy tools, towards more environmentally conscious farming practices. As an example, annual reports on the costs of waste management belong to the set of passive tools, while the allocation of these costs for the various products is an active tool.

The establishment of an environmental accounting system requires the total overview on the flows of materials and energy within the business. Full surveys about the flows of materials and energy within a farm system have not been generally used yet, although attempts have been made in this direction.

At the same time, a relatively well developed methodology and experimental results are available on several nutrients, mostly on nitrogen, - all included in nutrient accounting and farm nutrient balances.

The farm level nutrient balance includes not only the usual „inputs" to and „outputs" from the soil, that is, the amounts applied by fertilisation or in any other way, and the amounts taken up by crop yields, but account for the total nutrient cycle in the farm.

The primary data sources for farm level nutrient balances are usually the records available within the traditional accounting system, namely the quantities given in the analytic records of inventories.

The respective nutrient contents of the various plant and animal materials and products (e.g. crop yields, fodders, fertilisers, manures, livestock, animal products, etc.) are attached to the quantities of these materials given by the analytic records. In a few cases the nutrient balances were set up relying on the nutrient accounts maintained continuously throughout the year.

The computation of the farm level nutrient balances often goes hand in hand with the establishment of a nutrient accounting system. This can serve to help tracing nutrient surpluses, the decrease of which is an important aim both from the environmental and the economic aspects.

ACCOUNTING CAN IMPROVE FARM MANAGEMENT

Together with other reasons, like the generally lower level of managerial sophistication and fewer economic means in the sector, the limited appropriateness of general accounting principles has led to a situation in which farmers are more reluctant to prepare accounting reports and use this kind of information than the agents in other economic sectors.

It is generally believed that accounting can improve farm management and lead to better farm performance. The farmers who used a formal record system over time improved their ability to use the kind of information the system produced. For example, it was observed that farmers who prepared financial statements were more likely to make cash flow projections than those who were not involved in financial accounting.

The farmers who were using electronic information systems observed by themselves that accounting functions would improve their management information systems. Thus, accounting is a necessary precondition to generate useful information for decision making, and it is also a good complement for management information systems.

CONCLUSIONS

As a summary it was suggested that the definition of the concept of farm level nutrient balances, and their application is not unified among the researchers of the field. The different

approaches of interpretation often cause difficulties in comparing research results, indicating the need for the development of methodology and the unification of terminology.

In conclusion, despite the important initial effort carried out at methodological level, environmental accounts have been practically limited to the accounts of expenses for environmental protection.

LITERATURE

1. HAIGH, N., *Manual of Environmental Policy*, Longmann, Harlow,1992
2. ROJANSCHI, V., BRAN, F., DIACONU, G., IOSIF, G.N., TODEROIU, F., *Economia şi protecţia mediului*, Bucureşti, Editura Tribuna economică, 1997
3. ROJANSCHI, V., BRAN, F., GRIGORE, F., *Elemente de economia şi managementul mediului*, Bucureşti, Editura Economică, 2004