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1.3 The essence, components and development directions of environmental accounting in the modern economic conditions

Enterprises that seek to be open to the outside world and stable in a changing market environment must meet international and national requirements for the production of quality ecological products. One of the most important problems in the development and implementation of an effective policy in this area is the lack of providing the company's management with comprehensive, reliable and timely information about environmental activities.

In order to make effective management decisions regarding activities in the field of nature management, reliable information support is required, the main source of which at the enterprise is the accounting and reporting system.

Enterprises that pollute the environment must provide such information about their activities in the field of environmental management, since its absence can create serious risks for investors and owners: having invested resources in production today, they may already suffer significant losses in the form of fines, costs for liquidation of consequences tomorrow environmental disasters, etc. [19, p. 137]

The use of such management methods, which would take into account natural balances from the side of minimal harmful effects or lead to the improvement of natural potential, requires economic entities to assess the impact on the environment and carry out environmental protection measures. It is possible to give an objective assessment and form a competitive agrarian business only by taking into account environmental indicators in the economic assessment of the enterprise's activity. The main tool designed to solve this task at the enterprise level is environmental accounting or accounting of environmental activities.

Today, many commercial organizations, primarily large and medium-sized, along with traditional financial reporting, prepare reports on sustainable development (Astarty, Deloitte, V-ZUG), which can be found on the official websites of enterprises; or social responsibility, as an element of corporate social responsibility policy (lifecell, Metinvest, Coca Cola). The need to prepare these reports is related to society's expectations and the growing importance of the demands of various interested parties to the activities of the parties. In Ukraine, to date, there is no single regulatory legal act that regulates social accounting and the formation of relevant indicators of non-financial reporting, so companies report according to international standards and according to their own experience. [20, p. 69]

A joint study by the Global Reporting Initiative, the Prince of Wales Sustainability Reporting Project (A4S) and Radley Yeldar shows that corporate governance data is most in demand today, with around 70% of respondents citing it as very important. Information about natural resources interested 64% of investors and analysts. But social reporting occupies the lowest level of the conditional hierarchy of sustainable development reporting – only 52% recognized that this information is important. Experts emphasize that the reason for this is not the lack of significance of the social factor at all, but, most likely, certain obstacles in comparing companies on the basis of such information: since they cannot be compared, it is also impossible to rely on social reporting [21, p. 679].

Environmental problems and their negative impact on humanity and catastrophic consequences are an issue that is constantly on the agenda. The search for directions for the development of society, which would take into account the natural and ecological balance, is underway. One of the main tools designed to solve this problem at the level of a business entity is the scientific development and establishment of environmental accounting [22, p. 218].

Environmental accounting is rapidly developing all over the world. Its widespread use is facilitated by such professional organizations of accountants as the International Federation of Accountants (IFAC), the Association of Chartered Certified Accountants (ACCA), and the Chartered Institute of Management Accountants (CIMA) etc. [23, p. 257].

Today, the world is considering four main areas of development of environmental accounting (Figure 1).

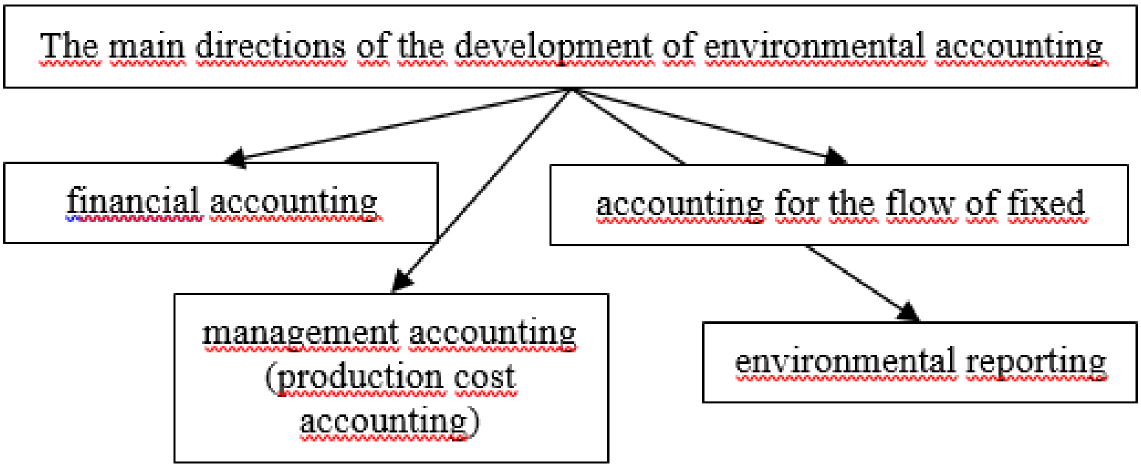

Figure 1 – The main directions of the development of environmental accounting. *

* Source: developed by the authors on the basis [21, p. 680].

In modern scientific studies on the problem of environmental accounting, there are points of debate among scientists regarding the interpretation of its essence and place in the enterprise management system. The main approaches to defining the essence of "environmental accounting" are listed in Table 1.

Based on the analysis of the definitions of the concept of "ecological accounting" given in Table 1, the following approaches to the understanding of this concept by modern scientists can be distinguished:

1) as a system of detection, measurement, registration, accumulation, generalization, storage, processing and preparation of relevant information;

2) as the formation of documented systematized information about the environmental activities of the economic entity;

Table 1

Approaches to the essence of "ecological accounting" in scientific research*

Author	Definition of the essence of environmental accounting
T. Kirsanova	environmental accounting means the system of detection, measurement, registration, accumulation, summarization, storage, processing and preparation of relevant information about the enterprise's activities in the field of environmental management with the aim of transmitting it to internal and external users for optimal decision-making

Continuation of table 1

K. Sayenko	definition of environmental accounting as an orderly system of collection, registration and summarization of information in kind and monetary terms about natural resources, environmental obligations, economic operations of environmental protection activities of the organization through continuous, continuous documentary accounting of environmental use of the economic entity
E. Illichova	considers environmental accounting as a segmental area of accounting, presented in the form of a system of collecting, registering and summarizing information that will provide the ability to identify, evaluate, plan and forecast, control and analyze environmental costs and environmental obligations
T. Gogoleva	defines environmental accounting as the formation of documented systematized information about the environmental activities of an economic entity in accordance with the requirements for accounting information and drawing up environmental reporting based on it
N. Rubanova	environmental accounting is the process of collecting, registering, summarizing and displaying in the system environmental costs, natural assets, environmental funds, reserves and liabilities, as well as the results of the activities of business entities for the purpose of managing and determining the environmental potential of the enterprise
E. Murueva	environmental accounting - an independent area of accounting of a business entity, which will provide accounting with relevant environmental information, currently does not have a systematized nature
L. Chhutiashvili	environmental accounting is the process of reflecting in the accounting system the environmental costs and obligations of the organization, as well as the socio-ecological and economic results of the activities of business entities for business management and achieving the optimal ecological and economic link in the market of goods and services
O. Kozhukhova	environmental accounting is an independent area of accounting, and its widespread implementation will allow at the level of enterprises - nature users to activate practical environmental protection activities and provide informational support for environmental controlling
O. Hrytsenko	environmental accounting is a system of detection, measurement, registration, summarization and storage of information about the activities of enterprises in the field of environmental management in order to transfer it to users for making optimal management decisions

* Source: formed by the authors on the basis [22, p. 218-219; 24, p. 235].

3) as a process of collection, registration, summarization and display in the system of environmental costs, natural assets, ecological funds, reserves and liabilities

4) as an independent direction of accounting of a business entity;

5) as a process of reflection in the accounting system of environmental protection costs and obligations of the organization.

Taking into account the world's experience in the development of environmental accounting, the selected approaches to understanding its essence, the authors believe that environmental accounting at the enterprise should act as a system and form an integral system with accounting and be aimed at compiling the environmental component of integrated reporting.

The authors proposed an environmental accounting system with its main subsystems (Figure 2).

According to modern researchers [21, 25], there are a number of obstacles preventing enterprises from implementing environmental accounting, namely:

- expenses are subject to deduction from the amount of taxable income only after they have been incurred. As a result, there is no incentive to take into account obligations, in particular environmental ones;

– since investors closely monitor the amount of profit based on one share, enterprises postpone the use of measures that could lead to a decrease in profits;

– excessive complexity of allocating costs for environmental protection measures from general costs;

- lack of specific recommendations regarding the provision of information on environmental protection activities and the organization of environmental accounting at enterprises.

Environmental accounting should perform the following functions:

- optimization, which consists in creating grounds for the best choice of optimal options for environmentally-oriented activities;

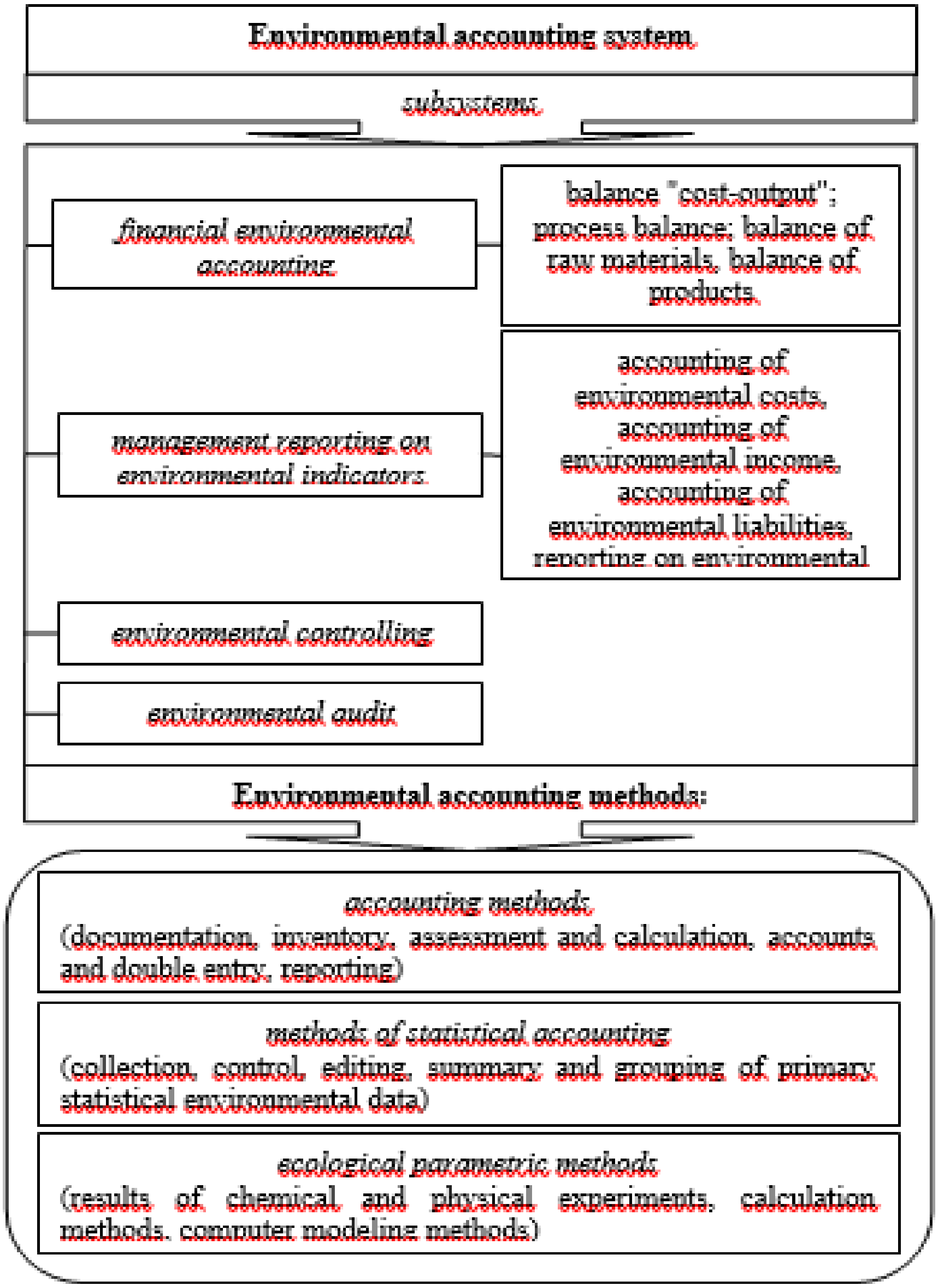

Figure 2 – Component systems of environmental accounting. *

* Source: developed by the authors on the basis [23, p. 259; 25; 26, p. 118; 24, p. 236].

- motivational, which is manifested in the provision of information to stimulate the implementation of solutions regarding environmental problems; control measures for spending on ecology [21, p. 680].

The basic principles of the organization of environmental accounting include:

– timely provision of complete information about the company's activities, necessary for operational management, control and analysis;

- ensuring the achievement of the best results of the accounting process with minimal expenditure of money, labor and time for obtaining this information;

- observance of a systemic approach, integrity, comprehensiveness, dynamism, anticipatory reflection of economic operations;

– a high level of organization of the accounting service and the work of accounting employees, appropriate qualification of the accounting staff in terms of environmental accounting;

– the ability and speed of adaptation to new requirements for environmental accounting and reporting;

– timeliness, orderliness of records from the point of view of their chronological sequence; their completeness, comprehensiveness, accuracy, continuity, economy, clarity of reflection in accounting;

- allowing the implementation of new solutions, if previously conducted studies did not prove in practice their appropriateness and the need to introduce fundamental changes in the organization of environmental accounting at the enterprise immediately after thorough practical testing and retraining of personnel [21, p. 680; 25].

In the management accounting system, it is necessary to determine the procedure for distinguishing expenses and incomes, which would make it possible to allocate and evaluate environmental expenses and environmental incomes.

It is necessary to consolidate the functions of drawing up primary documents in accordance with the requirements for ensuring environmental accounting by a special accountant, as this forms a systematic vision and a uniform approach to the evaluation of processes, and also excludes the duplication of primary documents and information flows.

In order to organize the accounting of environmental expenses, it is necessary to select articles that will make it possible to obtain information about the expenses of environmental performance, consumer safety, labeling of products and services.

The allocation of these items should be coordinated with the economic nature of specific expenses and their recognition criteria, as this is necessary for the formation of information on elements for the purpose of reporting. We consider it necessary to enter separate sub-accounts for the accounting of environmental objects in the financial accounting system.

The existing level of accounting organization is not able to satisfy all the requirements for environmental accounting and provide the necessary information in full, so every enterprise that implements a system of continuous environmental management must develop its own accounting methodology and ensure its effective organization. This will make it possible to increase the efficiency of the enterprise's activities, the quality of its products and the level of competitiveness and the level of rating among other enterprises.

For the effective functioning of environmental accounting, it is necessary to fulfill a number of basic conditions. In different countries, these conditions are different, but they include the establishment of firm guarantees for the protection of private property rights, the guarantee of the fulfillment of obligations under contracts, laws, and the implementation of political, economic and legislative reforms. [27]

The optimal option would be to rely on business structures of economic responsibility for ensuring the appropriate level of environmental protection. In this case, not only by punishing, but also by stimulating, the state gains the trust of business entities (that is, environmental polluters). [28]

Thus, the main problems and prospects of the introduction of environmental accounting are considered by modern scientists to include:

– lack of a rational, effective environmental policy of each enterprise (environmental information is often vague and relative);

- most natural losses cannot be expressed in monetary terms, they are difficult to even measure quantitatively (important environmental information can be obtained not from financial and economic sources, but from such fields as geology, ecology, biology, physics, etc.);

- lack of strict legal requirements, tax incentives to take into account and prevent damage to the environment;

– there is a need to improve a unified system of standardization and product quality, including the development of specific technical regulations;

- increasing information provision and improving the quality of life through planning the assortment of products in accordance with the needs of the population (especially in rural areas);

– activation of consumer responsibility, which affects their choice of goods; improvement of the pricing mechanism and liberalization of the internal market.

One of the important methodological problems is the inclusion of adequate environmental indicators of product quality in regulatory documentation. However, such inclusion of economic characteristics in the system of product quality indicators is debatable, and ecological indicators include only problems of environmental protection and preservation of the gene pool, which in themselves are more declarative.

The main mechanisms for solving this problem include: conducting marketing research of the domestic market and advertising, constant work to improve the quality and safety of products, development of indicators for measuring the environmental activity of enterprises, systematic detection, evaluation and quantitative reflection of the negative impact of the enterprise's activities on the environment. For the systematic control of environmental aspects of economic activity, it is necessary to promote the compilation of integrated reporting, which would contain more detailed and complete environmental information in an inextricable relationship with the economic indicators of economic activity.