

ACCOUNTING, ANALYSIS AND AUDITING

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PREREQUISITES AND FEATURES OF ENVIRONMENTAL ACCOUNTING

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Introduction. Preservation of the environment is the main task in modern society and the role of the state in this matter is quite important. Countries around the world are trying to accumulate their forces into a single whole and help improve the environmental situation on the planet. One of the tools to help improve the environment is the introduction of environmental accounting in enterprises. To date, there is no single regulatory and methodological framework that would allow effective implementation of this type of accounting in all enterprises, taking into account the specifics of the business entity, its location and other features.

Therefore, the study of environmental accounting is one of the pressing issues for research in the modern world.

Analysis of recent research sources and publications. Ecological accounting was studied by the following national scientists: V.R. Holyk [4], O.P. Kolisnyk [6], O.I. Hrytsenko [5], Yu.V. Shtyk [12] et al.

The purpose and objectives of the research. The purpose of the article is to consideration of historical preconditions of development of ecological accounting, definition of features of its conducting, possibilities of introduction in Ukraine.

Results. The environmental problem is one of the main at the present stage of development of society. In every area of economic activity, the issue of reducing environmental risks and promoting the formation of public opinion on environmental protection is acute.

All countries are working to improve the environmental situation on the planet. Today, various rankings are created that reflect the effectiveness of countries in combating climate change (Table 1).

Table 1

Climate change countries ranking (first in the overall ranking)

Place	Country	Mark (max = 100)
1	2	3
1	-	-
2	-	-
3	-	-
4	Sweden	75,77
5	Denmark	71,14

1	2	3
6	Morocco	70,63
7	United Kingdom	69,80
8	Lithuania	66,22
9	India	66,02
10	Finland	63,25
11	Chile	62,88
12	Norway	61,14
13	Luxembourg	60,91
14	Malta	60,76
15	Latvia	60,75
16	Switzerland	60,61
17	Ukraine	60,60

Developed on the basis of the source [13]

So, analyzing the table, we can conclude that in 2020, there are no countries that would occupy the first positions in the ranking, so it is necessary to strive to improve activities to improve the environmental condition of the planet.

It is possible to change the state of the environment and ensure the reduction of environmental pollution at enterprises through the introduction of environmental accounting in enterprises.

Accounting in terms of environmental began to take shape naturally with the beginning of human primitive economic activity (Figure 1).

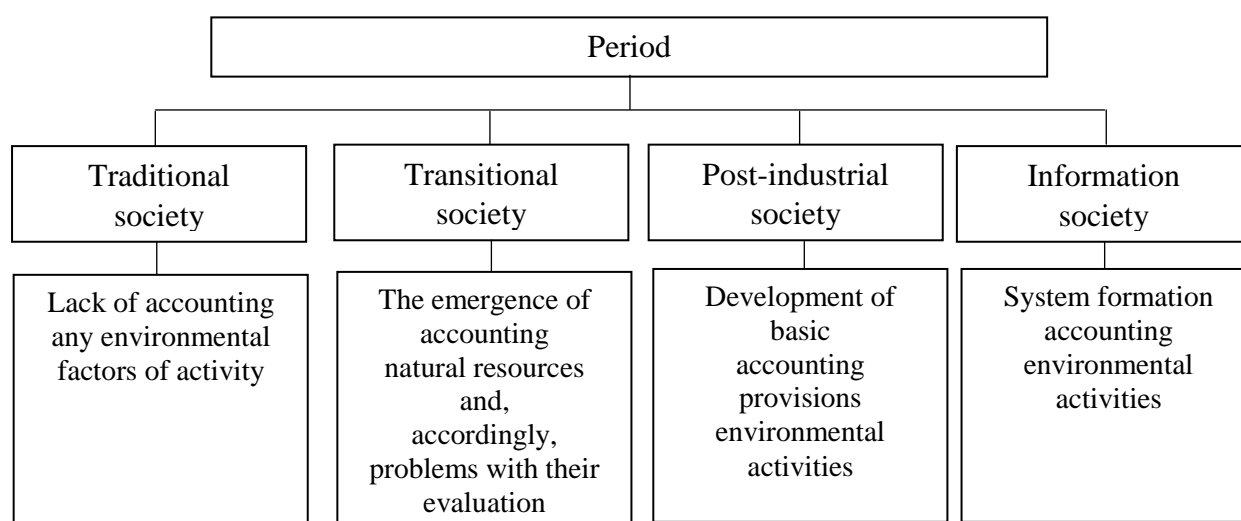


Fig. 1. Characteristics of the periods of society in terms of its ecological orientation [7, p.49]

In the period of traditional society, all human efforts were focused on the use of natural resources, mainly on self-sufficiency in food. Preservation of the environment, including the formation of some primitive features of environmental accounting, was not discussed, as the main purpose of society was to save lives.

The transition period is characterized by the fact that society begins to use natural resources as a means of labor, which led to the emergence of accounting. Scientists are beginning to study accounting, especially the assessment of natural resources used.

The period of post-industrial society became a turning point in the development of environmental accounting. This is due to the intensive creation of new enterprises, the expansion of economic activity, the significant spread of heavy industry. The rapid development of economic activity has had a negative impact on the environment: pollution of water and air, the emergence of large landfills, the irrational use of natural resources, the death of some species of plants and animals.

Therefore, society considers it necessary to create a balance between economic and environmental activities. In 1989, the Intergovernmental Working Group of Experts on International Accounting Standards began its work. The main purpose of its activities was to address issues related to the accounting of environmental activities. Gradually, the first requirements were created for accountants to disclose information about the impact of economic activity of the enterprise on the environment.

The information stage is a stage of significant development of public consciousness for the preservation of the environment. The ecological crisis has prompted the development of various environmental programs to save the planet, the study of the ecological situation in all regions and, of course, the development of environmental accounting, which becomes the basis of environmental management in enterprises.

The process of studying the accounting of environmental activities of the enterprise contributed to the emergence of discussions on the terminology of this process. There are the following concepts: ecological accounting, environmental accounting, natural accounting and more. However, the most correct is to use the name environmental accounting.

Scientists have identified different points of view on the definition of environmental accounting.

T.A. Kirsanova believes that environmental accounting – a system of detection, measurement, registration, accumulation, generalization, storage, processing and preparation of relevant information about the activities of the enterprise in the field of nature in order to transfer it to internal and external users to make optimal decisions [12, p. 235].

K.S. Saienko defines environmental accounting as an orderly system of collecting, registering and summarizing information in kind and in monetary terms about natural resources, environmental obligations, business operations of environmental activities of the organization through continuous, continuous documentary accounting of nature management of the business entity [4, p. 219].

O.V. Ilichova treats environmental accounting as a system that can be used to identify, organize, regulate and present data and information on the state of the environment in kind and value indicators [12, p. 235].

Scientist O.V. Taranicheva believes that environmental accounting is a system that should be used to identify, organize, regulate and present data and information on the state of the environment in kind and value indicators [12, p. 235].

Analyzing the definitions of researchers, we can conclude that the definitions of "environmental accounting" are similar, but have some differences in interpretation. Therefore, in general, it can be established that environmental accounting is a system of detection, measurement, registration, generalization, storage, processing of information about the environmental activities of the enterprise, intended for potential users.

At the modern period of development of society, it is important for the public to obtain information about the activities of the enterprise in terms of ecology: what impact the company has on the environment, cost management methods, waste disposal and more.

Such attention to the state of the environment has certain reasons (Figure 2).

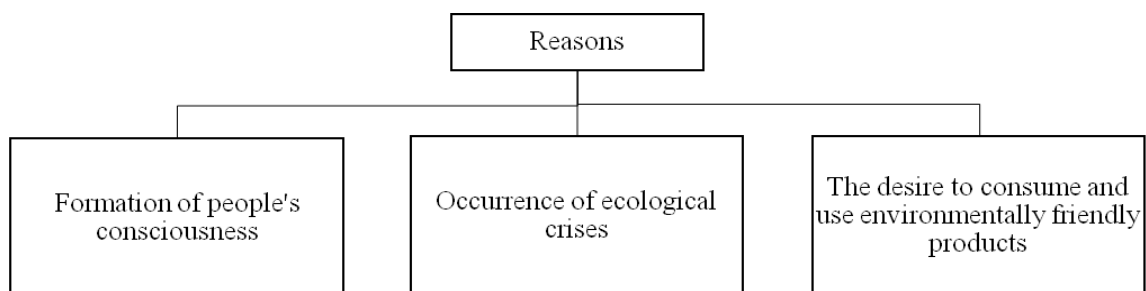


Fig. 2. Reasons for the formation of public attention to improving the environment

Environmental accounting can change the state of the environment. This type of accounting should be carried out at all enterprises, especially for large manufacturing and processing enterprises.

Information on environmental activities is very important for external and internal users. The external ones include: state and local authorities, investors, environmental organizations, etc. Internal users are: environmental department, environmental specialists, accounting, management, staff.

The subject of environmental accounting is the enterprise itself, especially when it is large-scale industrial and works closely with the environment.

Objects include: assets related to environmental activities, income from environmental activities, environmental costs, sources of funding for environmental activities (Figure 3).

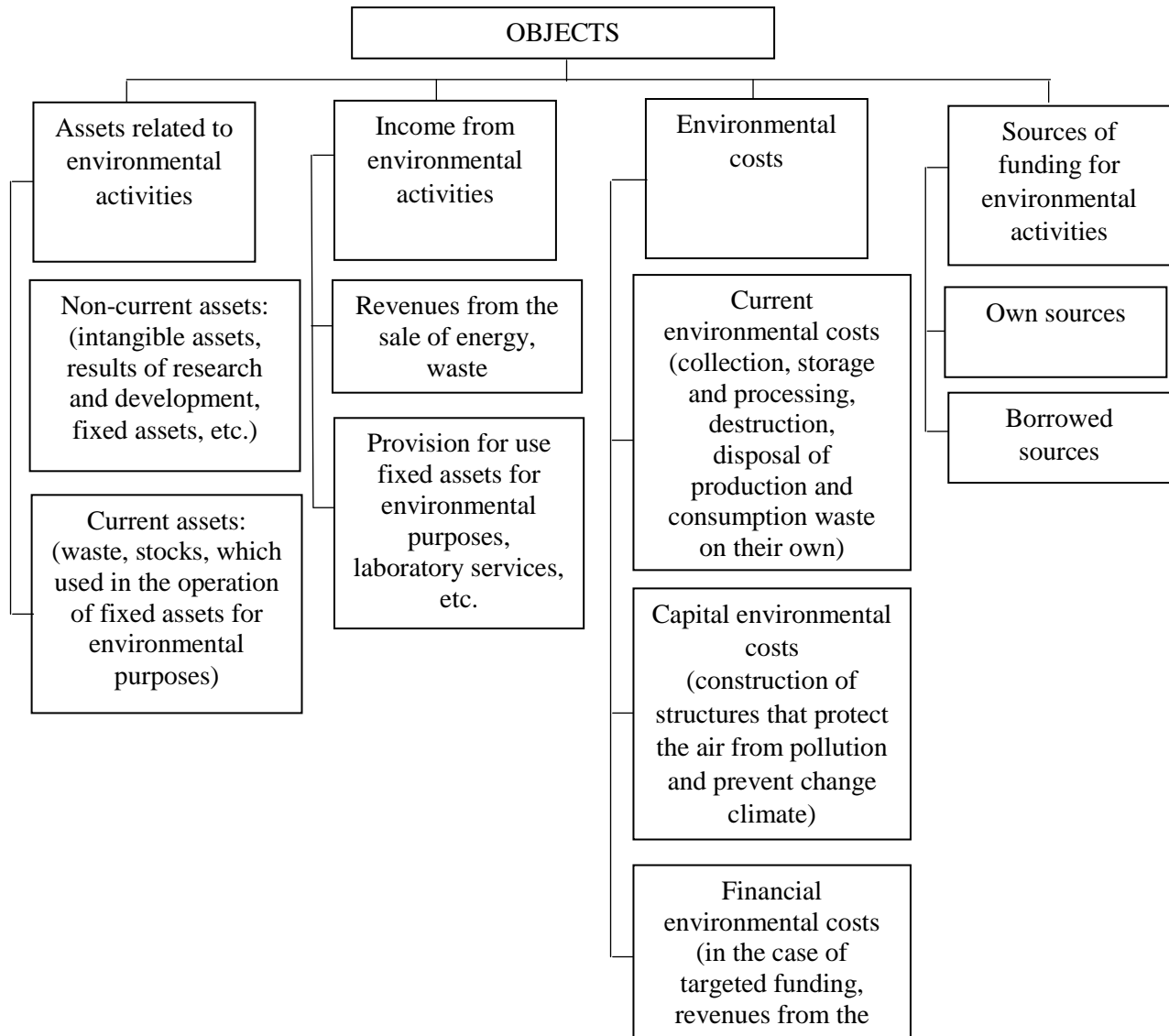


Fig. 3. Objects of environmental accounting

Developed on the basis of the source [12, p. 236]

Environmental accounting performs certain functions. The main ones are the following:

1. Optimistic – creating conditions that would promote the best choice of options for effective and safe environmental activities of the enterprise;
2. Motivational – provides information about the environmental activities of the enterprise to stimulate the implementation of solutions to environmental problems and their implementation;
3. Controlling – carrying out measures to manage the costs incurred for the environment.

In addition to the above functions, environmental accounting performs those that are provided for accounting. For example: information (collection, processing and transmission of information about the environmental activities of the enterprise to users in the form of reports), analytical (economic analysis of deviations in different categories), social (global problem solving), evaluation (cost measurement of environmental accounting).

The methods of environmental accounting include:

- methods of accounting (documentation, inventory, evaluation, calculation, invoices, double entry, reporting);

- methods of statistical accounting (collection, control, editing, compilation and grouping of primary statistical environmental data);
- ecological-parametric methods (results of chemical and physical experiments, calculation methods, methods of computer modeling).

An important issue in the study of environmental accounting is the study of the main accounting components in terms of environmental. That is, consideration of the peculiarities of the formation of accounts and reporting. The study of the composition of environmental accounting accounts is reflected in the article by O.E. Shmyhel [11, p. 119]. The author believes that the composition of environmental accounting accounts should depend on the volume of environmental activities at the enterprise (table 2).

Table 2

Environmental accounting accounts

Characteristics of the enterprise	Accounts
The company has a small amount of environmental activities, does not provide environmental services	Account in class 8 "Environmental activities" to which the following sub-accounts are opened: - material costs; - labor costs of colleagues working in the field of environmental protection; - costs of social insurance for employees employed in the field of environment; - depreciation of fixed assets for environmental purposes; - environmental fees and charges; - other environmental costs.
The company has a significant amount of environmental activities with the use of special shops, providing environmental services	1st class: basic means of environmental protection; depreciation of fixed assets for environmental protection; acquisition of fixed assets for environmental purposes; 2nd class: natural resources (raw materials); 4th grade: financing of environmental measures; reserve capital for investments in the field of environmental protection; 5th grade: long-term environmental commitments; 6th grade: environmental fees and charges; environmental insurance calculations; remuneration of personnel employed in the field of environmental protection; calculations on social insurance of employees employed in the field of environmental protection; 7th grade: income from the sale of environmental funds; income from the provision of environmental services; 8th class similarly as for the enterprises with insignificant volume of nature protection activity.

Developed on the basis of the source [11, p. 119]

The effectiveness of environmental accounting, the formation of proper reporting, obtaining positive financial results depend on the proper organization, which is based on the principles (Figure 4).

O.E. Shmyhel notes the need to create a new reporting form "Report on the environmental activities of the enterprise", which will monitor the state of environmental activities of the enterprise and provide the necessary information to users. The company may add the following to the reporting: calculation of the fee for environmental pollution, information on air protection, information on water protection, information on land protection, report on waste disposal, information on research in the field of environmental protection, information on restoration and dismantling of equipment, calculation of depreciation of environmental protection equipment, information on other activities in the field of environmental protection (staff training, general administrative activities).

Yu.V. Shtyk, M.V. Shchurenko and A.O. Panasenko [12, p. 236] believe that environmental reporting should have the following components:

1. Accounting: balance sheet (statement of financial position) and statement of financial performance (statement of comprehensive income);
2. Statistical reporting: form № 1 – waste (annual), № 1 – hazardous waste, № 2 – TP (air) (annual), № 1 – environmental costs (annual).

3. Tax reporting: tax returns for the payment of rent for the use of natural resources, for pollution and negative impact on the environment.

4. Reporting on environmental standards: reporting that reveals the level of environmental friendliness of the enterprise [12, p. 236].

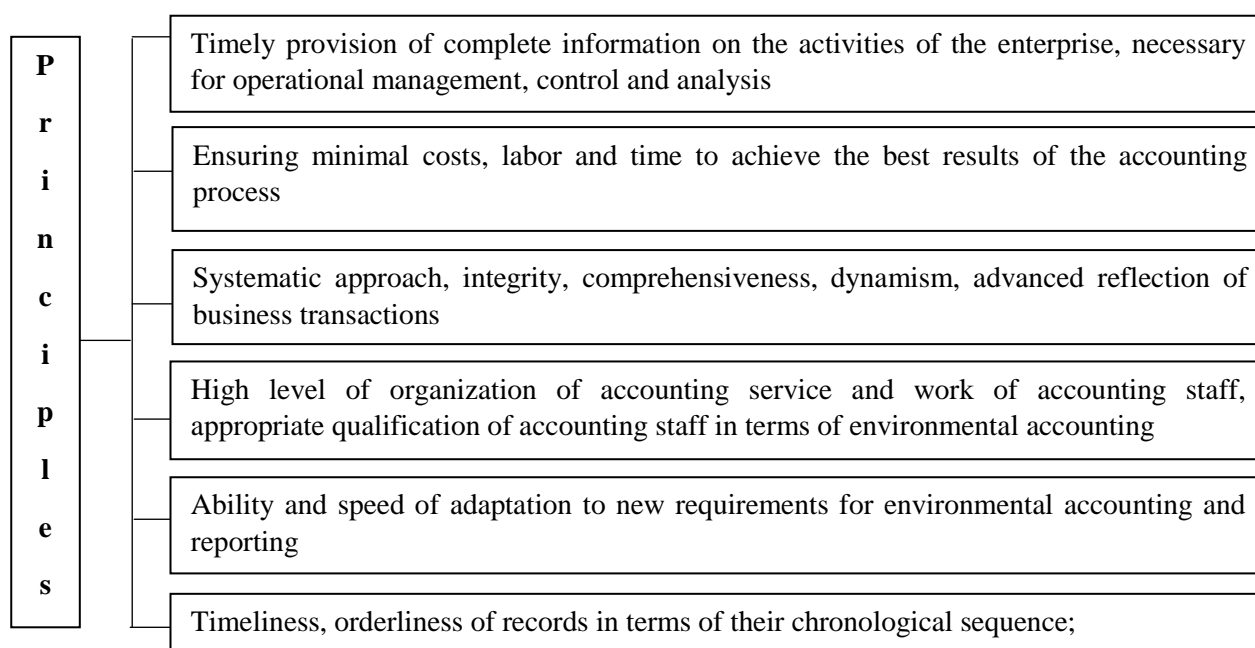


Fig. 4. Principles of environmental accounting

Developed on the basis of the source [5, p. 682]

The main problem of environmental accounting is the complexity of allocating and accounting for costs incurred for environmental activities.

There are two approaches to implementing environmental cost accounting.

The first involves making adjustments to traditional accounting. The differentiation of financial statements to fully, accurately and reliably reflects the impact of environmental management on the property of the entity and its profitability. This approach involves the allocation of environmental costs from the total and the implementation of their division by type and place of origin.

The second approach proposes the implementation of reorganization and expansion of accounting, compiling eco-balance sheets to accurately reflect external environmental costs.

The most acceptable is the introduction of cost accounting under the first approach, as it is the simplest and most feasible today.

Synthetic accounting of environmental costs should be carried out in separate accounts and open the necessary sub-accounts, according to the groups of costs used by the company.

Since today in Ukraine there are no regulations on the accounting of environmental costs, it can be noted that their distribution and write-off must be carried out according to generally accepted methods. That is, the distribution should be carried out in proportion to the wages of workers in the main production, because environmental costs in economic terms are variable overhead costs.

Analytical accounting should be carried out on the basis of classification, which will monitor the level of environmental costs in accordance with the selected groups at the enterprise.

Ukraine is one of the countries seeking to improve the environmental situation in the world and conducts various environmental activities.

The state has a large number of companies that work closely with the environment. The main ones are business entities engaged in agriculture, metallurgy and oil and gas industry. These sectors of the economy contribute to soil pollution due to the introduction of harmful substances, air, water. Therefore, environmental accounting is urgent in today's economy.

N.A. Chuhrii and H.A. Chuhrii [10] formed the relevance of the introduction of environmental accounting in Ukrainian enterprises in terms of three areas of need.

The first direction is economic necessity. It is an environmental activity in support of the state program of environmental control and investment activities.

The second is the ecological necessity caused by the deterioration of the environment and the depletion of natural resources.

The third direction is social necessity, ie maintaining the image of the enterprise and public relations.

Environmental accounting will provide non-economic and economic information for potential users.

Non-economic information will include the following: accounting for the availability of natural resources, accounting for the use of natural resources, accounting for the state of the environment. That is, users will be able to obtain information about what natural resources the company uses and to what extent and what environmental impact is caused by the use of these resources.

Economic information is an accounting of environmental activities, it is a subsystem of accounting, which forms and transmits to users information about business transactions related to the use of the natural environment and the impact of economic activity on its condition [7, p. 52].

The formation of environmental accounting in Ukraine will allow companies to:

- to form the necessary information for planning and forecasting of ecological expenses and incomes;
- create environmentally friendly, safe products and compete with them in the market;
- to form reliable, accurate and complete information about the environmental activities of the enterprise and provide it to potential investors and other external users;
- to prevent negative consequences of economic activity on the state of the environment;
- creation of business plans, projects to improve the environmental performance of the enterprise;
- control and reflection of the results of environmental activities.

Thus, it can be noted that Ukraine has all the prospects for the introduction of environmental accounting. Its creation will help improve the environmental situation in Ukraine and the world, as well as increase the economic situation in the country by creating safe, environmentally friendly and correct products.

Conclusions. We concluded that environmental accounting can be a driving force in the fight against environmental crises. But this requires:

- to create a regulatory framework that would reflect the theoretical foundations of environmental accounting and on which the activities of enterprises would be based;
- create a system of chart of accounts. In our opinion, the most correct option would be to make subaccounts to the 8th class of accounts, as in Ukraine there are not a large number of enterprises that would have separate branches engaged in environmental activities and for which it would be possible to expand the general chart of accounts for all classes;
- It is important for businesses to introduce a new form of reporting that would reflect the environmental performance of enterprises. It is advisable to submit it together with the annual financial statements. This will allow to analyze their activities and further make appropriate management decisions in relation to the environmental direction;
- it is expedient to create a separate service that would investigate the issues of environmental accounting, namely: development of regulations, establishment of standards, methods, control over the activities of enterprises, detection of violations of environmental activities.

So, environmental accounting is currently little studied, there is no regulatory framework, it is not used in Ukraine, but its implementation is quite important. Therefore, it is necessary to study this type of accounting and create an effective system of application of environmental accounting by business entities in Ukraine.

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Дмитренко Алла Василівна, доктор економічних наук, доцент. **Токаюк Лілія Олександрівна** студентка. Національний університет «Полтавська політехніка імені Юрія Кондратюка». **Передумови виникнення та особливості ведення екологічного обліку.** Масштаби екологічних проблем, зростання забруднення навколишнього середовища вимагає від керівництва підприємств усунувати їх та заохочувати до пошуку екологічних та економічних інструментів управління на принципах сталого розвитку. Одним з основних інструментів, покликаних розв'язати це завдання на рівні господарюючого суб'єкта, є наукове розроблення і постановка екологічного обліку. На сьогодні немає єдиної встановленої системи впровадження й функціонування такого виду обліку, що може призвести до порушень інформування зацікавлених користувачів звітності щодо екологічної діяльності підприємства. Тому екологічний облік потребує детального дослідження, яке дозволить сформувати у світі злагоджену систему ведення цього виду обліку, а в результаті сприятиме поліпшенню екологічної ситуації на планеті.

Новизною є визначення перспектив впровадження екологічного обліку в Україні та його значення для діяльності підприємств. Досліджено історичні аспекти формування екологічного обліку, шляхи його створення й функціонування, з'ясовано можливості впровадження екологічного обліку в Україні. Розкрито інформацію про шляхи впровадження екологічного обліку, можливий план рахунків, складові екологічної звітності, досліджено питання обліку екологічних витрат. Виділено заходи України щодо збереження навколишнього середовища й описано перспективи впровадження екологічного обліку в державі.

Ключові слова: екологічний облік, екологічні витрати, екологічна діяльність, екологічна звітність, рахунки, навколишнє середовище.

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Dmytrenko A.V., D.Sc. (Economics), Associate Professor. **Tokaiuk L.O.**, Student. National University "Yuri Kondratyuk Poltava Polytechnic". **Prerequisites and Features of Environmental Accounting.** The article deals with the problems of environmental accounting. It is very important, because the scale of environmental problems, increasing environmental pollution requires management to eliminate them and encourage them to seek environmental and economic management tools based on sustainable development. One of the main tools designed to solve this problem at the level of the business entity is the

scientific development and formulation of environmental accounting. To date, there is no single established system for the implementation and operation of this type of accounting, which can lead to violations of informing interested users of reporting on environmental activities of the enterprise. Therefore, environmental accounting requires a detailed study that will form a coherent system of this type of accounting in the world and as a result will improve the environmental situation on the planet.

A novelty is the definition of prospects for the introduction of environmental accounting in Ukraine and its importance for the activities of enterprises. The article considers the historical preconditions for the emergence of environmental accounting and the definition of its essence. The information on ways of introduction of the ecological account, the possible plan of accounts, components of the ecological reporting is opened, the questions of the account of ecological expenses are considered. Ukraine's measures to preserve the environment are highlighted and the prospects for the introduction of environmental accounting in the country are described.

Key words: ecological accounting, ecological expenses, ecological activity, ecological reporting, accounts, environment.