

Ecological-Oriented Approach in Providing of Sustainable Development of UKRAINE'S Agrarian Sector: Place and Role of Accounting

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Abstract: *The main components of the concept of sustainable development are investigated in the article. The ecological component of sustainable development of the agricultural sector of the national economy of Ukraine is highlighted and the ecological problems of the domestic agricultural sector are outlined, including the uncontrolled application of mineral fertilizers. The volumes of pollutant emissions into the atmosphere, the level of plowing of the land fund of Ukraine, the application of mineral and organic fertilizers were analyzed separately. At the same time, greening is recognized as the main activity of agricultural enterprises during the transition to the model of sustainable development.*

Keywords: *sustainable development, ecological component of sustainable development, agricultural sector, accounting*

JEL codes: M40, M41, Q15

1 Introduction. The issue of sustainable development has been the focus of attention of scientists and practitioners for many years, but due to its complexity, multifacetedness, importance and degree of impact on the development of society, many of its issues remain open and require further research. According to the accepted concept of sustainable development, the ecological component must ensure the integrity of natural systems, their viability, on which the global stability of the entire biosphere depends.

The implementation of measures to ensure sustainable development is especially important for the agricultural sector, which is closely linked to the biological characteristics of natural resources, including the regional characteristics of the territory, its ecological status and the implementation of actions to minimize environmental risks.

An important tool for sustainable development is environmental impact assessment. That is, to reduce the negative impact of man on the environment, it is necessary, first of all, to measure (reflect in accounting) this impact.

2 Methodology and data. The problems of sustainable development of agriculture and economic entities in this field have always been in the field of view of domestic agricultural scientists. Their research became the basis for the implementation of agrarian transformations and the formation of a system of sustainable agricultural development. However, the complexity and diversity of issues related to their implementation in practice necessitate further research. This is primarily due to the fact that at the present stage a number of factors have been identified that were not previously taken into account by Ukrainian researchers. In our opinion, this is especially true of the environmental component of sustainable development of the agricultural sector.

3 Results of the discussion. The development of economics in the search for solutions to problems of social development, their sources, the consequences of their existence, complementarity and interdependence contributed to the consideration of sustainable development in philosophy, ecology, world, national and regional economies, political economy, economic and mathematical modeling, law, sociology, biology and other disciplines, which led to the emergence of new areas of science (environmental economics, "green" economy, global studies, social philosophy, etc.) (Morozova O.V., 2013).

It should be noted that in the scientific literature, analytical documents and reports of well-known organizations, the concept of "sustainable development" has different interpretations. And today the existing definitions of sustainable development differ from each other in different focus on the most priority issues: the nature of economic growth, quality of life, environmental protection, relations between developed and developing countries, the need to manage global processes, resource management, balanced social spheres. development, etc.

Sustainable development is also understood as socio-ecological-economic balanced development of certain territories and urban and rural settlements (settlements) located on them, aimed at coordinated formation and functioning of economic, social and ecological components of this development on the basis of rational use of all types of resources, labor, production, scientific and technical, information, etc.) (Popov O.L.).

The United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992 with the participation of heads, members of governments and experts from 179 countries, representatives of many non-governmental organizations, academia and business, formally adopted the concept of sustainable development.

The concept of sustainable development is based on three main principles:

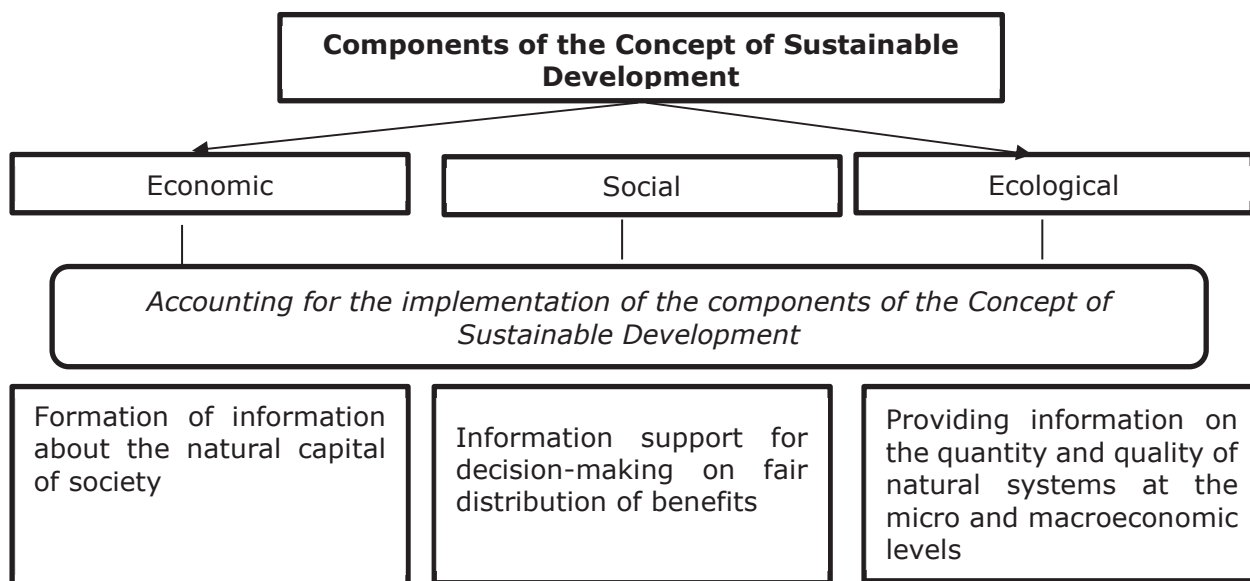
- ensuring the balance of economy and ecology;
- ensuring the balance of economic and social spheres in the human dimension, which means the maximum use in the interests of the population of the resources provided by economic development;
- solving problems related to development not only in the interests of the modern generation, but also all future generations who have equal rights to resources (Kvyatkovska L.A., 2013).

The concept of sustainable development was formed as a result of combining three main components: economic, social and environmental.

One of the tools for implementing the economic component is accounting as an information system that provides information on the natural capital of society. The accounting records the business operations of the enterprise, which are carried out using natural resources or lead to environmental consequences.

The role of accounting in the implementation of the social component is to provide information on decisions on the fair distribution of benefits. The ecological component is designed to ensure the integrity of biological and physical natural systems through the preservation of the ability to self-healing and dynamic adaptation of such systems to change. The source of information on the quantity and quality of natural systems at the microeconomic level can be an accounting system (Fig. 1).

Fig. 1. Implementation of sustainable development components through the accounting system



Source: Compiled by the authors

Currently, the environmental component is under the greatest pressure, so it needs special attention. Development must be based on the conservation of wildlife, the protection of the structure, functions and diversity of natural systems on which species depend. To do this, it is necessary to maintain life support systems (life support), preserve biodiversity and ensure the sustainable use of renewable natural resources.

Ecological prerequisites for the need for sustainable development are: environmental pollution; formation of new zones of man-made disasters; violation of biochemical cycles at the global and local levels; depletion of stocks of raw materials and energy resources; man-made violations of surface integrity, loss of recreational potential and aesthetic integrity of landscapes, reduction of forest and fertile lands; water and wind erosion of soils, occurrence of catastrophic floods and wind waves; siltation and disappearance of small rivers, destruction and degradation of aquatic ecosystems; biodiversity reduction; deterioration of drinking water and food quality.

Business perceives natural resources as a virtually free production resource, which in the process of carrying out production activities are not only excessively polluted and depleted, the state of the environment deteriorates, obstacles are created for its self-reproduction (Trynko R.I., Stadnyk M.E., 2014).

Greening is the main activity of agricultural enterprises and is based on the development of ecological and economic management methods to ensure expanded reproduction of natural resources through the formation of sustainable ecological and economic systems, increase production of competitive environmentally friendly products, the creation of agricultural systems for use of ecological management methods.

The agricultural sector of the economy of the last century has traditionally focused on the development of energy-intensive and resource-consuming technologies. The desire to take from nature as much as possible and in the shortest possible time has led to a huge imbalance in the system "society-ecology". In order to assess with the maximum degree of reliability of the causes of the ecological crisis situation in a particular agronomic enterprise, a more in-depth study of economic activity and a more extensive classification of signs and causes of this situation is needed.

The cause of the ecological crisis in the agricultural sector are mainly economic factors, namely:

- extensive development of agricultural production, which is not able to provide the population of the state with a sufficient number of environmentally friendly food products;
- Lack of environmental justification of economic development plans and projects developed by the relevant departments of ministries and departments on the basis of departmental methods and instructions, regulatory and technical documentation for the location, construction and operation of facilities and complexes, the creation of new equipment, environmentally friendly agricultural production technologies products;
- there are almost no effective administrative and economic mechanisms for environmental protection; low moral level of society and lack of ecological thinking of the management (Voronovskaya O.V., 2010).

In the course of research of the ecological component of sustainable development it is possible to allocate a number of negative tendencies which agriculture faced (Sokolskaya T.V., 2012):

- violation of crop rotations;
- giving preference to growing crops for which there is increased demand;
- increasing the load on pastures;
- expanding the use of agrochemicals;
- narrowing of specialization of agricultural production and land concentration, consolidation of farms;
- the structure of supply and demand is formed without taking into account the most complete reflection in the production costs of any type of product "objective" economic assessments of natural resources and environmental actions.

The components of environmental safety in agriculture are:

1. Environmentally friendly products - materials or products (food, technical purposes) that do not contain harmful impurities in concentrations dangerous to the environment, animals

and plants, human health. The entry of harmful substances into the environment is also completely excluded.

2. Ecologically clean soils - those that do not contain harmful elements and their compounds in quantities that threaten the state of soil biota and human health.

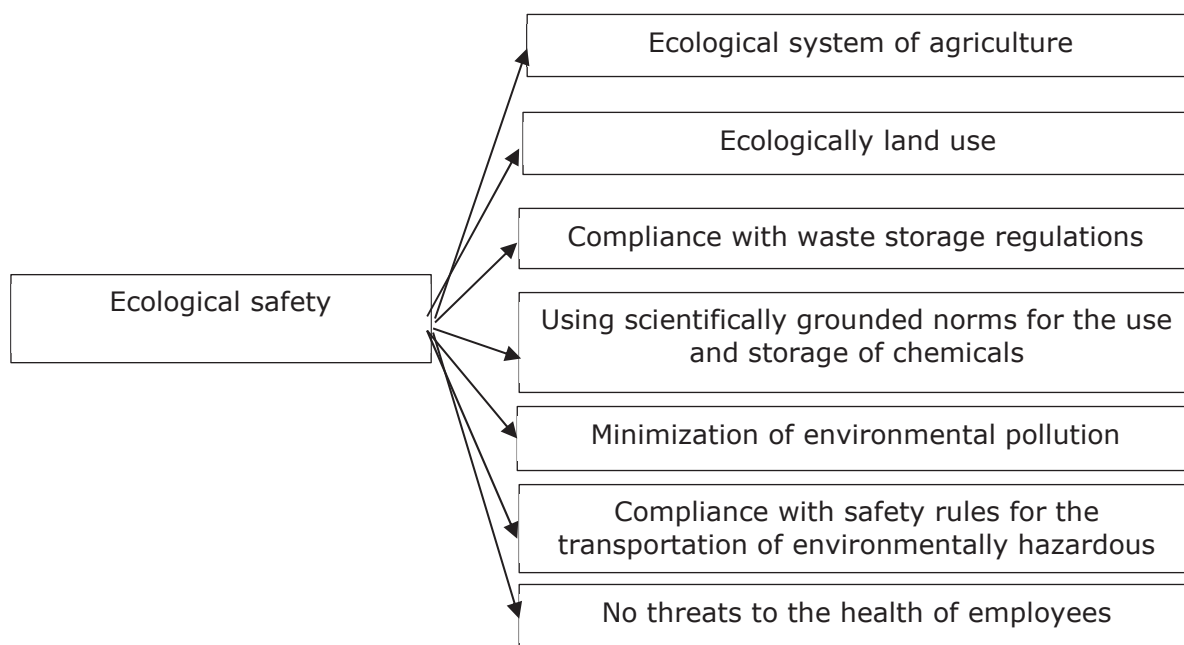
3. Environmentally friendly production - the level of organization of production, which establishes compliance with environmental requirements. This means not only the production process, but all stages of the product life cycle, including transportation, exchange, consumption and disposal of waste (Tsarenko O.M., 2006).

Issues of environmental safety of agriculture are twofold: on the one hand, the generation of the entire sphere of environmental threats to nature, as well as the health of consumers of agricultural products; on the other - counter-threats to agriculture on a set of unfavorable, external to this area, factors. In practice, this leads to non-compliance with the requirement of sustainable use of nature for agricultural purposes and increased environmental hazards. In particular, it has become problematic to ensure rational scientifically based crop rotation schemes for growing crops due to a number of organizational, economic and agrotechnical factors, and, above all, small-scale production, which in addition to depletion of fertile soil layer due to non-compliance with the required technology The factor of salinization of irrigated lands.

From the ecological point of view, agro-industrial production has reached a turning point, which objectively necessitates the development of a qualitatively new approach to the organization of agricultural nature management, an approach based on harmonization of society, production and nature, and as a strategy of environmentally sustainable development. For Ukraine, the priority areas of this approach are the further greening of agricultural production, preservation and restoration of natural resource potential of the agricultural sector (Lantukh A.O., 2015).

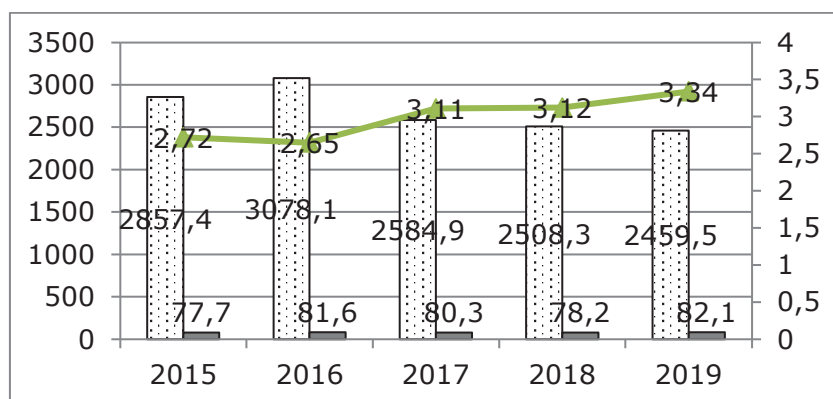
The importance of identifying the environmental component in the context of agricultural research is explained by the fact that land is a major factor in production and significantly affects the results of agribusiness. There are several areas of environmental safety (Fig. 2).

Fig. 2. Directions for the implementation of environmental safety



Source: Compiled by the authors

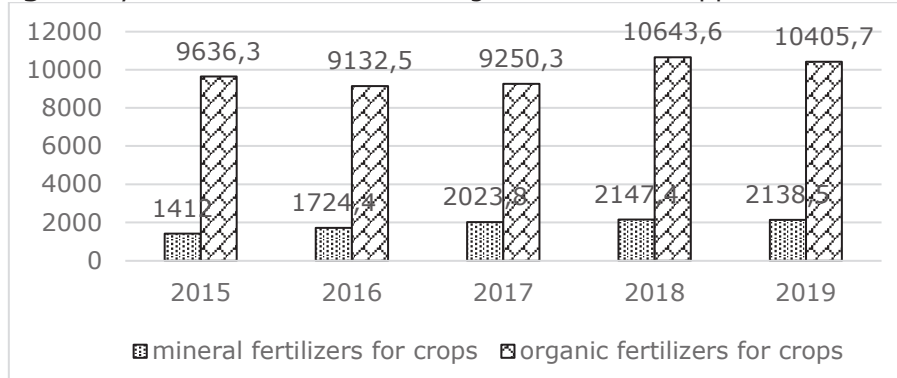
Thus, the agricultural sector of the economy has a negative impact on the environment. In particular, emissions of pollutants into the atmosphere have a negative impact. Although, according to Figs. 3, the agricultural sector does not have the greatest impact on their total number, but in recent years have tended to increase the share of agricultural emissions.

Fig. 3. Dynamics of pollutant emissions into the air of Ukraine, thousand tons

Source: Compiled by the authors on the basis of <http://www.ukrstat.gov.ua>

Another negative consequence of agricultural production, monoculture, soil and agro-landscape degradation is a significant loss of agrobiodiversity. It is established that the "point" habitats of approximately 45% of plant species and 47% of animal species listed in the Red Book of Ukraine were located in agricultural areas (Borodina O., Prokopa I., Yurchyshyn V., 2012).

An important factor that negatively affects the environmental component of sustainable development of the agricultural sector is the uncontrolled application of mineral fertilizers. The figure 4 shows information on the dynamics of the use of mineral and organic fertilizers in Ukraine during 2015-2019. The graph shows that the use of organic fertilizers increased by 7.98% (10405.7 thousand tons against 9636.3 thousand tons) compared by the base year, the use of mineral fertilizers also increased by 33.97% (2138.5 thousand tons against 1412.0 thousand tons).

Fig. 4. Dynamics of mineral and organic fertilizers applied in Ukraine

Source: Compiled by the authors on the basis of <http://www.ukrstat.gov.ua>

We support O.I. Burynska's (2016) opinion, that today in Ukraine the main tasks of greening the agar sector, taking into account the environmentally friendly use of natural resources are as follows:

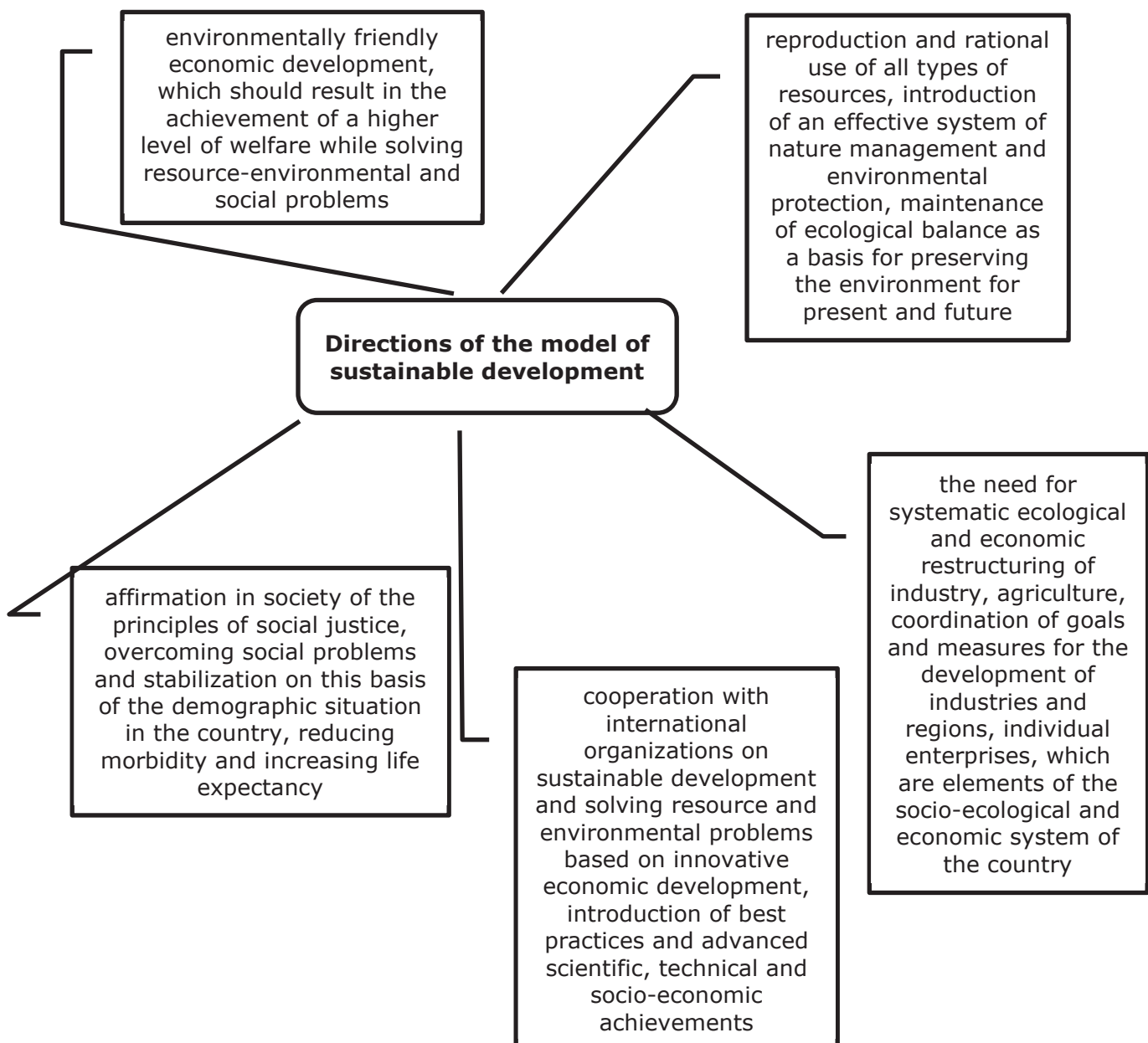
- introduction of innovative, ecologically safe technologies of agricultural production with the use of international experience, as well as stimulation of organic production;
- guaranteeing the ecological security of the state by creating effective regulatory and legal support taking into account economic and environmental interests;
- formation of measures to reproduce and increase the level of soil fertility, as well as the preservation of agricultural landscapes;
- regulation of reasonable (from an economic and environmental point of view) use of agrochemicals;
- creation of a system of economic incentives for the production of environmentally friendly products;

- improving the system of liability of agricultural sector entities for violation of environmental requirements;
- support and formation of environmentally friendly infrastructure to ensure decent working conditions, recreation and development of the population in rural areas.

In order to direct the actions of agricultural producers in the direction of greening, it is necessary to develop a motivational mechanism, the main components of which are tools for motivating the innovative development of agricultural enterprises and economic tools for greening agricultural production. The key motive for solving the issue of environmentally friendly production, which will create a truly functioning sector of producers of environmentally friendly products, should be material incentives and changes in the internal philosophy of agribusiness (Bagorka M.O., 2018).

The main conditions of Ukraine's transition to the model of sustainable development are presented in Fig. 5.

Fig. 5. The main conditions for the transition to a model of sustainable development



Source: Compiled by the authors on the basis of Vergun A.M., Tarasenko I.O. (2014)

4 Conclusions. Sustainable development of agricultural production is an important

component of the region's economy and aims to ensure long-term balanced economic growth, improving the social and environmental parameters of its activities. The solution of these problems involves increasing the volume of production of quality and competitive agricultural products, increasing the economic efficiency of production, reproduction and protection of natural resources, reducing the eco-destructive impact of agriculture and environmental improvement. This can be ensured by greening the activities of agricultural enterprises, the formation of a rational structure of their resource potential and its effective use.

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