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METHODOLOGICAL APPROACH TO DIAGNOSTICS OF SUSTAINABLE DEVELOPMENT OF SOCIALLY ORIENTED AGRICULTURAL ENTERPRISES

МЕТОДОЛОГІЧНИЙ ПІДХІД ДО ДІАГНОСТУВАННЯ СТАЛОГО РОЗВИТКУ СОЦІАЛЬНО ОРІЄНТОВАНИХ АГРАРНИХ ПІДПРИЄМСТВ

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Левкіна Р.В., Сулімовський Т.І. Методологічний підхід до діагностування сталого розвитку соціально орієнтованих аграрних підприємств. Науково-методична стаття.

Метою статті є обґрунтування теоретико-методичних засад діагностики сталого розвитку соціально орієнтованих аграрних підприємств. У статті визначено сутність та складові сталого розвитку аграрних підприємств з соціальною орієнтацією. Авторами запропоновано комплексну систему збалансованих показників для проведення діагностики сталого розвитку соціально орієнтованих аграрних підприємств. Методологічний підхід представляє собою розробку і обґрунтування комплексної системи збалансованих показників для досягнення синергетичного ефекту в управлінні розвитком аграрних підприємств з урахуванням специфіки галузі. Наукова і практична цінність проведеного дослідження полягає у розробці методологічного підходу до діагностики сталого розвитку аграрних підприємств на основі комплексної системи збалансованих показників, що враховує специфіку аграрного виробництва. Прояв синергетичного ефекту визначається на основі використання інтегрального підходу до діагностики відповідності рівня розвитку аграрних підприємств сталому розвитку, що дозволяє своєчасно внести зміни у стратегію їх функціонування і спрямувати її на вирішення поточних і перспективних завдань.

Ключові слова: діагностика, сталий розвиток, солідарне підприємництво, соціальна орієнтація, система збалансованих показників, аграрні підприємства

Levkina R.V., Sulimovskyi T.I. Methodological Approach to Diagnosing the Sustainable Development of Socially Oriented Agricultural Enterprises. Scientific and methodical article.

The purpose of the article is to substantiate the theoretical and methodological foundations for diagnosing the sustainable development of socially oriented agricultural enterprises. The article defines the essence and components of sustainable development of agrarian enterprises with social orientation. The authors propose a comprehensive system of balanced indicators for diagnosing the sustainable development of socially oriented agricultural enterprises. The methodological approach is the development and substantiation of a comprehensive system of balanced scorecards to achieve a synergistic effect in managing the development of agricultural enterprises, taking into account the specifics of the industry. The scientific and practical value of the study lies in the development of a methodological approach to diagnosing the sustainable development of agricultural enterprises on the basis of an integrated system of balanced indicators that takes into account the specifics of agricultural production. The manifestation of the synergistic effect is determined on the basis of an integrated approach to diagnosing the compliance of the level of development of agricultural enterprises with sustainable development, which allows timely changes in the strategy of their functioning and directing it to solving current and future problems.

Keywords: diagnostics, sustainable development, solidarity entrepreneurship, social orientation, balanced scorecard, agricultural enterprises

General statement of the problem and its connection with important scientific or practical issues. The current conditions in Ukraine, military operations, the state of development of the national economy, and dependence on foreign financing require agricultural enterprises to find new ways of development, adapt to difficult conditions in order to reduce financial dependence on the state and international assistance and increase efficiency. The simultaneous solution of economic, social and environmental problems in rural areas can be both a way out of the current crisis situation and the beginning of a new management crisis, as it requires simultaneous processing of a large number of diverse tasks. The presence of a developed social and transport infrastructure in rural areas practically means the existence of favorable conditions for the development of agrarian entrepreneurship, as it increases the level of demand for consumer and food products, and also allows for an increase in the level of employment in sectoral entrepreneurship.

Currently, one of the problems of domestic agricultural enterprises is the difficulty in providing highly qualified personnel with relevant competencies and capable of implementing innovative models of agricultural business development. On the other hand, the specialization of agricultural enterprises in the production of grain and

technical products does not require a large number of young workers with extensive knowledge in related industries and information technologies. Thus, considering socially oriented business as one of the forms of sustainable development of agricultural enterprises, it is possible to solve economic and social problems in a complex way, which allow, first of all, to create a basis for further effective functioning and development of rural areas. The only question is the choice of a business model, product specialization and financial support for enterprises in the context of military operations or in the post-war years. Choosing solidarity agrarian entrepreneurship as a business model, which should develop on the principles of self-sufficiency and sustainability, we believe that management efforts should be directed to controlling functions and diagnostics of a balanced scorecard. This does not allow ignoring some groups of indicators and focusing on others. Thus, diagnostics of sustainable development of agrarian enterprises with a social orientation is an important condition and basis for making informed management decisions, which determines the relevance of this publication and the results of the research.

Analysis of recent researches and publications

Over the years, prominent foreign and domestic scholars have been engaged in the scientific substantiation of theoretical and practical solutions to the problems of enterprise management on the basis of sustainable development, among which, first of all, we should mention [1]. Although this publication, at first glance, does not relate to this topic, it clearly traces the idea of certain limits of economic growth, which lead to changes in other spheres of human activity (ecology, society) and require the use of resources appropriate to the stage of scientific and technological progress and the prevailing technological mode. In the scientific publications of such scientists as: M.O. Bagorka [2], Y.M. Kotko [3], L.Y. Kucher [4], G. Syrotyuk [5], O.I. Protosvitska, O.M. Fedorchuk [6], I.A. Chaikivskiy [7], K. Fedicheva [8], V. Trehubchuk [9], etc.

It should be noted that the issues of introducing innovative models of socio-economic development of agricultural enterprises, most of which are based on the principles of integration with scientific, industrial, and government institutions, remain insufficiently addressed. We emphasize the expediency of spreading the mechanism of solidarity entrepreneurship in the agricultural sector as one of the innovative models of socio-economic development. A high level of efficiency and practical implementation on the basis of already functioning agricultural enterprises has been proven in other countries [10]. Some results of the authors' own research have already been tested at international conferences and published in scientific journals [11].

We believe that solidarity entrepreneurship in rural areas has the highest chances of being realized in the current conditions, as it combines the efforts of the state, agricultural enterprises, and consumers to obtain mutual economic benefits and implement social projects in rural areas, where such enterprises are most often located. It should be noted that the concept of "solidarity entrepreneurship" is rarely used in domestic scientific publications. Instead, it is replaced by "solidarity responsibility", "solidarity financing", "solidarity agriculture", etc. The most common term is "solidarity agriculture". Among the domestic and foreign scholars who have studied the theoretical and practical issues of organizing solidarity agriculture are C. Cone, A. Myhre [12], C. Flora, C. Bregendahl [13], O.M. Borodina, I.V. Prokopy [10, 14], and others. It was O.M. Borodina and I.V. Prokopa who were among the first among domestic scientists to pay attention to this model of agribusiness, to study its essence and other similar models [10].

However, despite the large number of scientific studies and published works, this issue requires further development in terms of the relationship and interdependence of innovation models with the performance of socially oriented agricultural enterprises and the diagnosis of compliance with the principles of sustainable development. The analysis of publications has led to the conclusion that insufficient attention has been paid to these issues, which has given grounds for further development of certain theoretical, methodological and practical provisions.

Unsolved aspects of the problem

The results of our previous publications are the basis for the study of theoretical and methodological issues of diagnostics of agricultural enterprises [15, 16]. This allows us to focus on the sustainable development of agricultural enterprises that have chosen a socially oriented strategy. Thus, in publication [15], we paid attention to the peculiarities of determining the efficiency of vegetable production by agricultural enterprises on the basis of sustainable development. We used an integrated approach to assessing efficiency (economic, social, environmental or energy efficiency) using the level of anthropogenic load of 20 GJ/ha as a criterion for the negative impact on the environment. This approach proved to be the right one to solve the problems we faced earlier. Now we are using a different approach that allows us to move away from energy saving and energy analysis of agricultural production costs, which has shown a higher level of reliability of calculations and balance of the indicators used.

The aim of the article is to substantiate a methodological approach to diagnosing the sustainable development of socially oriented agrarian enterprises based on the use of world experience in introducing innovative models in agrarian entrepreneurship. To achieve this goal, the following tasks have been set: to determine the characteristics of socially oriented agrarian enterprises through the model of solidarity entrepreneurship; to develop a balanced system of indicators for diagnosing agrarian enterprises in accordance with the concept of sustainable development; to supplement the system with indicators that correspond to the model of solidarity entrepreneurship;

to formulate recommendations for agrarian enterprises in order to improve their efficiency and maximize the integral indicator of sustainable development.

The main part

At the end of the twentieth century, the United States proposed an innovative model of agricultural business implementation, which became an alternative to corporate business organization based on the principles of high concentration and intensification of production. In fact, it was and still is an alternative to large-scale commodity production using intensive technologies designed to maximize profits without taking into account the long-term environmental impact and social problems, or rather the social development of the enterprise and the community. The model is called "solidarity agriculture" or CSA and has proven to be feasible in small agricultural enterprises or farms with limited funding. The experience of CSAs in organizing organic production, the principles of which are fully consistent with the concept of sustainable development, is interesting. In other words, organic agricultural producers can be classified as social entrepreneurs, because their basic principles and goals coincide, and solving social issues, such as providing the population with healthy food, positive impact on natural resources, and their restoration, are of paramount importance. The gradual development and improvement of the principles of implementing such a model in practice in different countries of the world, economic support of CSA by governments of different countries, primarily highly developed ones, contributed to the emergence of new forms that take into account national and cultural traditions not only in production and sales activities, but also in relations between producers and consumers of products. Our research on the causes of differences in the implementation of CSA, the results of which we have published, revealed both national and cultural traditions in labor relations, as well as macroeconomic indicators of national economies and peculiarities of resource provision (primarily land and labor resources) [11].

We have proposed the concept of "solidarity agrarian entrepreneurship" as the one that most fully reflects the national peculiarities of the functioning of domestic agricultural enterprises that implement the CSA model in practice [12]. At the same time, the fundamental principles of solidarity agriculture are being implemented: financial partnership, relocation of the economy, solidarity responsibility, and direct producer-consumer relations. Consumers of agricultural products, as well as its producers (suppliers), become participants in solidarity agricultural responsibility. Such forms of interaction can include organizing recreation after a labor contribution during harvesting, weeding crops, etc. The availability of "jointly produced" products allows consumers to be confident in their quality, as production processes take place with their participation and under their control. Individualization in relations with consumers, mutual understanding, transition to the production of organic (environmentally friendly) products, such as vegetables, milk, meat, honey, etc. and their delivery according to an individual schedule helps to avoid additional market and financial risks. Thus, we focus on the innovative CSA model as belonging to social entrepreneurship, and, accordingly, agricultural enterprises that implement it have a social orientation. This is confirmed by the main characteristics of the business organization model. Specialization in organic (environmentally friendly) products allows us to classify agricultural enterprises as those that operate on the principles of sustainable development.

For the long-term effective functioning of such enterprises, management must be confident in the correctness of the chosen development path and the compliance of the values of key indicators with the principles of sustainable development. Therefore, it is logical to move to a methodological approach to diagnosing enterprises for compliance with the principles of sustainable development based on a system of balanced indicators that characterize it within the scope of its activities. The variety of diagnostic methods is not limited to balance sheet, value-oriented, and indicative. Each is aimed at diagnosing certain groups of indicators without taking into account the synergistic effect [16]. In a publication on the study of theoretical and practical issues of diagnostics of pharmaceutical enterprises, O.V. Posylkina, Y.S. Bratishko and K.S. Svitlychna substantiate the feasibility of using an integral approach that combines the social and economic components of sustainable socio-economic development and allows to determine complex and integral indicators for a particular pharmaceutical enterprise [18].

The synergistic effect is proposed to be calculated by determining the potential growth rate of the value of the integral indicator of socio-economic development. We somewhat agree with the general wording of the provision on diagnostics of the level of sustainable development, but consider it somewhat limited and requiring methodological additions. Thus, the conceptual essence of sustainable development of an enterprise should be reflected. In our opinion, the very concept of "sustainable socio-economic development of an enterprise" has contradictions associated with its definition, which is enshrined in the decisions of international organizations (United Nations conferences, 1972, 1992, the Club of Rome, 1972, the United Nations Conference on Sustainable Development "Rio +20", 2012, and others) on the triunity of the components of sustainable development: economic, social and environmental [19, 20]. Instead, the authors use only two overlapping components. The list of indicators corresponds to "sustainable development" in the context of "stable", "gradual", "permanent", and is confirmed by recommendations for pharmaceutical companies according to their level of development. In some scientific articles, we were also unclear in the interpretation of sustainable development [21].

Currently, we use the term "sustainable development" in its traditional sense by combining three components: economic, social and environmental. We believe that the system of indicators should not be transformed into a simple list of all existing indicators related to the three areas. Instead, it is only through interaction and

interdependence that sustainable development can be achieved, which is capable of self-reproducing a balance between meeting the healthy needs of society for new goods, maintaining environmental cleanliness, and the profitability and self-sufficiency of business processes. Given the mandatory requirements to ensure process controllability, which is a basic management function at the micro level, sustainable development requires management and direction of the general strategy in a certain direction.

Thus, we move on from the generally accepted components of the concept of sustainable development of any enterprise to the specific characteristics of an agricultural enterprise, such as responsibility for the quality of land resources. On the other hand, the social security of employees affects the production, marketing and sales processes, and is dependent on general management activities and innovation and investment support for production. In turn, conducting in-house research and using the results of scientific institutions' activities allow for a conscious approach to the production process and a shift towards environmentalization and conservation of natural resources. The formation of the commodity structure using the achievements of adaptive crop and livestock production will affect the level of competitiveness of the enterprise and provide conditions for sustainable development based on the cultivation and breeding of plants and animals traditional for the area. Thus, the list of components presented in Fig. 1, the list of components grouped by economic, social and environmental components is ambiguous, indicating a close relationship and interdependence of the structural components, which is quite obvious and well grounded.

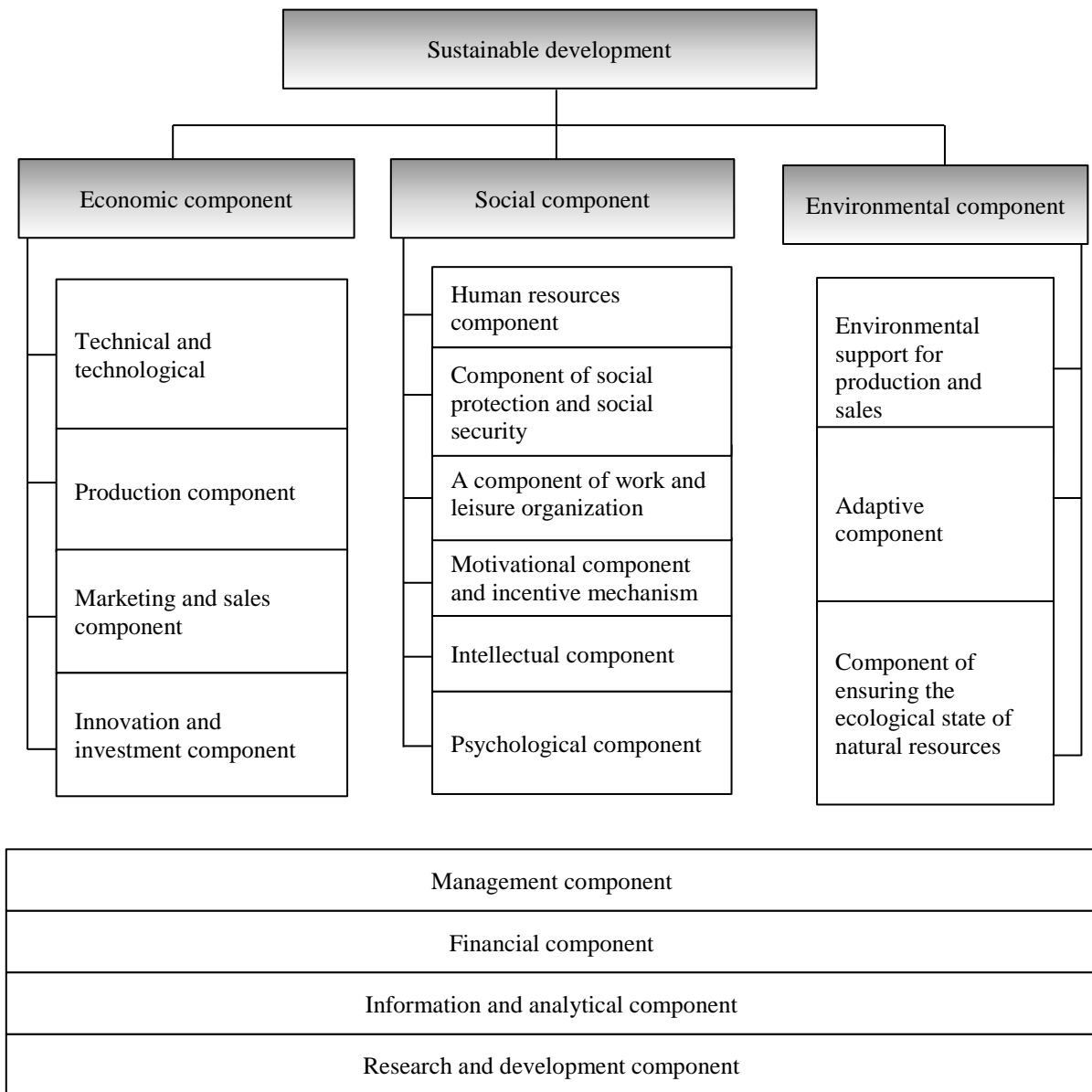


Figure 1. System of components of sustainable development of socially oriented agricultural enterprises
 Source: authors' own elaboration

The practical result of our study is the identification of a system of indicators that allow for an objective diagnosis of agricultural enterprises for compliance with the principles of sustainable development and the implementation of the solidarity entrepreneurship model. This is the main difference with the listed indicators in [18]. The list of indicators of the marketing and sales component should include the following: an indicator of the sustainability of the assortment and compliance with adaptive technologies; an indicator of the share of products transferred to consumers within the framework of the solidarity production model; an indicator of the share of marketing costs and financial interaction with consumers; an indicator of the sustainability of the level of marketability; an indicator of the share of the local market of the enterprise, etc.

The financial component, in addition to the traditional indicators of autonomy, absolute liquidity, the ratio of accounts payable and receivable, and others, which is quite logical, should be supplemented by the indicator of provision with own and borrowed funds from consumers; the indicator of finished goods turnover within the framework of the solidarity production model, etc.

The versatility of information and analytical support and its connection with all components of sustainable development is shown in Fig. 1, respectively, the indicators of information armament and information protection are related and affect the production and sales, marketing, financial, and management processes. Thus, the list of components for diagnosing sustainable development is reasonable, logical in its sequence and supported by specific indicators that can be calculated on the basis of financial and non-financial reporting data.

As noted in [11], solidarity entrepreneurship is a certain model of agricultural business organization implemented on the basis of partnership between producers and consumers. We are convinced that while there are numerous advantages for all partners of this model, the greatest potential of solidarity entrepreneurship is revealed in organic (environmentally friendly) production. We have also proved that diversification of local production by combining the agricultural sector and the processing sector (processing of agricultural products (milk, meat, vegetables) by canning (or drying or fermenting) for long-term storage) is a factor in revitalizing the local economy, stimulating the turnover of funds and filling the local budget. Thus, the main importance of solidarity entrepreneurship is its positive impact on local development, individual territorial communities, and agricultural entrepreneurs [22]. We consider the socio-economic development of an enterprise as a process of irreversible, natural change in the economic condition and its social infrastructure, as a result of which the organizational and economic structure of the enterprise moves to a fundamentally new qualitative level, which requires attention to environmental issues [23].

Agricultural enterprises are open economic systems, which means that they are influenced by numerous factors of the internal and external environment. The systemic principle of diagnostics means the use of economic and non-economic indicators that together ensure the maximum level of profitability and labor productivity; rational and environmentally safe use of natural, financial, material and technical, and labor resources in accordance with regulatory or benchmark indicators that ensure its social capacity and efficiency of production and sales activities. It is also important to introduce a system of moral and material incentives for employees [23].

We conducted a diagnosis of the sustainable development of agricultural enterprises ARSI AGRO LLC and GARANT PE, which are currently on the way to implementing the principles of solidarity entrepreneurship, but some components are sufficiently developed (Table 1).

Both enterprises are located in Bolhradskyi district of Odesa region, in the same natural and climatic zone. The distance between them is no more than 30 km, they share a common transport and logistics system and social infrastructure, their product specialization is designed for the local market and is determined by the influence of natural and climatic factors. Despite these characteristics of the enterprises, the results of the diagnostics of their sustainable development show significant differences, which are largely determined by the organization of production and sales activities and the management's focus on different methods of making management decisions. Thus, there is a difference in the integral indicator of the economic component of sustainable development, which significantly depends on the efficiency of the use and renewal of agricultural machinery and the efficiency of production and marketing, which accordingly affects the level of innovation and investment attractiveness of enterprises and human resources policy. The latter determines the policy of social protection and security and, as a result, affects the formation of a motivational mechanism for highly productive labor, the introduction of innovative developments, and entrepreneurial ideas.

Differences in the integral indicators of the environmental component of sustainable development for the studied enterprises are quite natural and clearly indicate the tendency of a private enterprise to obtain economic results, since the organizational and legal form provides for specific sources of funding (very limited).

The calculation of the synergistic effect shows the instability of this indicator, which in some years for ARSI AGRO LLC differed by 17-23 points, but exceeded 1 and had the potential for balance and unity of all components of sustainable development. In some years, there was no synergistic effect in PE GARANT (synergy coefficient less than 1), which is explained by insufficient attention to the environmental component and other components that also belong to the economic and social components.

This includes the information, analytical and research components, the importance of which is self-evident to the management, but attention is paid on a final basis, guided by ready-made technological recommendations of domestic research institutions and well-known suppliers of seeds, fertilizers and plant protection products. The latter, in combination with seeds of high-yielding varieties, provide a complete technology for growing crops adapted to specific natural and climatic conditions (soil quality and structure, nutrient content, average soil and air

humidity, temperature, etc.). Developing these components on their own requires much more effort from company management than introducing changes to production and sales processes, switching to other technologies, or searching for new markets. In fact, the research component means changes in the organizational structure of the enterprise by opening a laboratory or research center, the financial support of which will subsequently reach the level of self-sufficiency and self-financing. In other words, such a laboratory should become a strategic unit that works for the needs of its own agricultural enterprise, and eventually for the needs of other enterprises.

Table 1. Integral indicator of sustainable development of agricultural enterprises

Indicators.	ARSI AGRO STOV			PE "GARANT"		
	2019 yr	2020 yr	2021 yr	2019 yr	2020 yr	2021 yr
Comprehensive indicator of the technical and technological component	0.39	0.40	0.38	0.45	0.46	0.42
Comprehensive indicator of the production component	0.41	0.40	0.41	0.37	0.35	0.35
Comprehensive indicator of the marketing and sales component	0.31	0.36	0.33	0.37	0.37	0.38
Comprehensive indicator of the innovation and investment component	0.18	0.16	0.15	0.27	0.24	0.25
Integral indicator of the economic component of sustainable development	0.69	0.71	0.73	0.81	0.82	0.78
Comprehensive indicator of the human resources component	0.64	0.61	0.67	0.67	0.68	0.64
Comprehensive indicator of the social protection and social security component	0.68	0.66	0.69	0.67	0.68	0.65
Comprehensive indicator of labor and leisure organization	0.42	0.45	0.41	0.47	0.44	0.40
Comprehensive indicator of the motivational component and incentive mechanism	0.48	0.46	0.46	0.42	0.45	0.45
Comprehensive indicator of the intellectual component	0.22	0.26	0.24	0.34	0.34	0.35
Comprehensive indicator of the psychological component	0.38	0.39	0.35	0.33	0.37	0.31
Integral indicator of the social component of sustainable development	0.61	0.60	0.62	0.61	0.63	0.59
Environmental support for production and sales	0.75	0.75	0.76	0.63	0.64	0.63
Adaptive component	0.55	0.56	0.53	0.33	0.30	0.31
Component of ensuring the ecological state of natural resources	0.42	0.42	0.43	0.32	0.33	0.31
Integral indicator of the environmental component of sustainable development	0.51	0.52	0.51	0.44	0.46	0.45
Management component	0.68	0.68	0.64	0.74	0.75	0.74
Financial component	0.54	0.53	0.56	0.45	0.44	0.45
Information and analytical component	0.22	0.21	0.24	0.18	0.19	0.16
Research and development component	0.30	0.31	0.30	0.18	0.18	0.17
Generalized indicator of sustainable development	0.61	0.62	0.63	0.50	0.51	0.51
Synergy coefficient	1.23	1.44	1.40	None	None	1.7

Source: authors' own elaboration

The development of the information and analytical component for an agricultural enterprise will result in its gradual digitalization (use of digital technologies to solve management problems), which will require greater attention to information security and protection of business documentation, trade secrets, and financial reporting. Thus, these components will be an impetus for the introduction of technical and technological innovations, development of a change management strategy at the enterprise and introduction of a new management policy on human resources, financial, social, etc.

Conclusions

Thus, the article substantiates the theoretical and methodological foundations for diagnosing the sustainable development of socially oriented agricultural enterprises. We have analyzed the published definitions of the essence of sustainable development and specified its components for socially oriented agricultural enterprises. The list of such components differs significantly from those used to assess the sustainable development of enterprises in other industries, takes into account the specifics of functioning, and the peculiarities of resource provision in the agricultural business. This is its theoretical and practical significance, since according to these components,

we have developed a comprehensive system of balanced indicators that allows us to diagnose agricultural enterprises for compliance with the principles of sustainable development. The developed comprehensive system of balanced scorecards allows us to diagnose agricultural enterprises for compliance with the principles of sustainable development, which was done on specific examples. The methodological approach was used by diagnosing specific agricultural enterprises whose management has already realized and is practically addressing economic issues in combination with social and environmental ones. In other words, such enterprises can be defined as socially oriented, and the gradual transition to solidarity agrarian entrepreneurship, which is already taking place without legal consolidation, indicates the objectivity of their choice as a subject of research.

Abstract

The aim of the article is to substantiate a methodological approach to diagnosing the sustainable development of socially oriented agrarian enterprises based on the use of the world experience of introducing innovative models into agrarian entrepreneurship. To achieve this goal, the following tasks have been set: to determine the characteristics of socially oriented agrarian enterprises through the model of solidarity entrepreneurship; to develop a balanced system of indicators for diagnosing agrarian enterprises in accordance with the concept of sustainable development; to supplement the system with indicators that correspond to the model of solidarity entrepreneurship; to formulate recommendations for agrarian enterprises in order to improve their efficiency and maximize the integral indicator of sustainable development.

The authors determine that the specifics of the functioning of agricultural enterprises, their sectoral affiliation, and resource provision affect the list of components used to assess the level of sustainable development of enterprises in other industries. It is proposed to introduce environmental components (environmental support for production and marketing, ensuring the ecological status of natural resources and adaptive technologies and cultures) and to define the main indicators for their assessment. It is proposed to supplement the system of components of sustainable development with the research and information-analytical component and to place them, together with the management and financial component, beyond the scope of belonging to one of the three conceptual components. The developed comprehensive system of balanced scorecards allows to diagnose agricultural enterprises for compliance with the principles of sustainable development, which was performed on specific examples. This methodological approach allows determining the level of balance of the triune composition of sustainable development, which is confirmed by the integral indicator of sustainable development and the synergy coefficient.

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