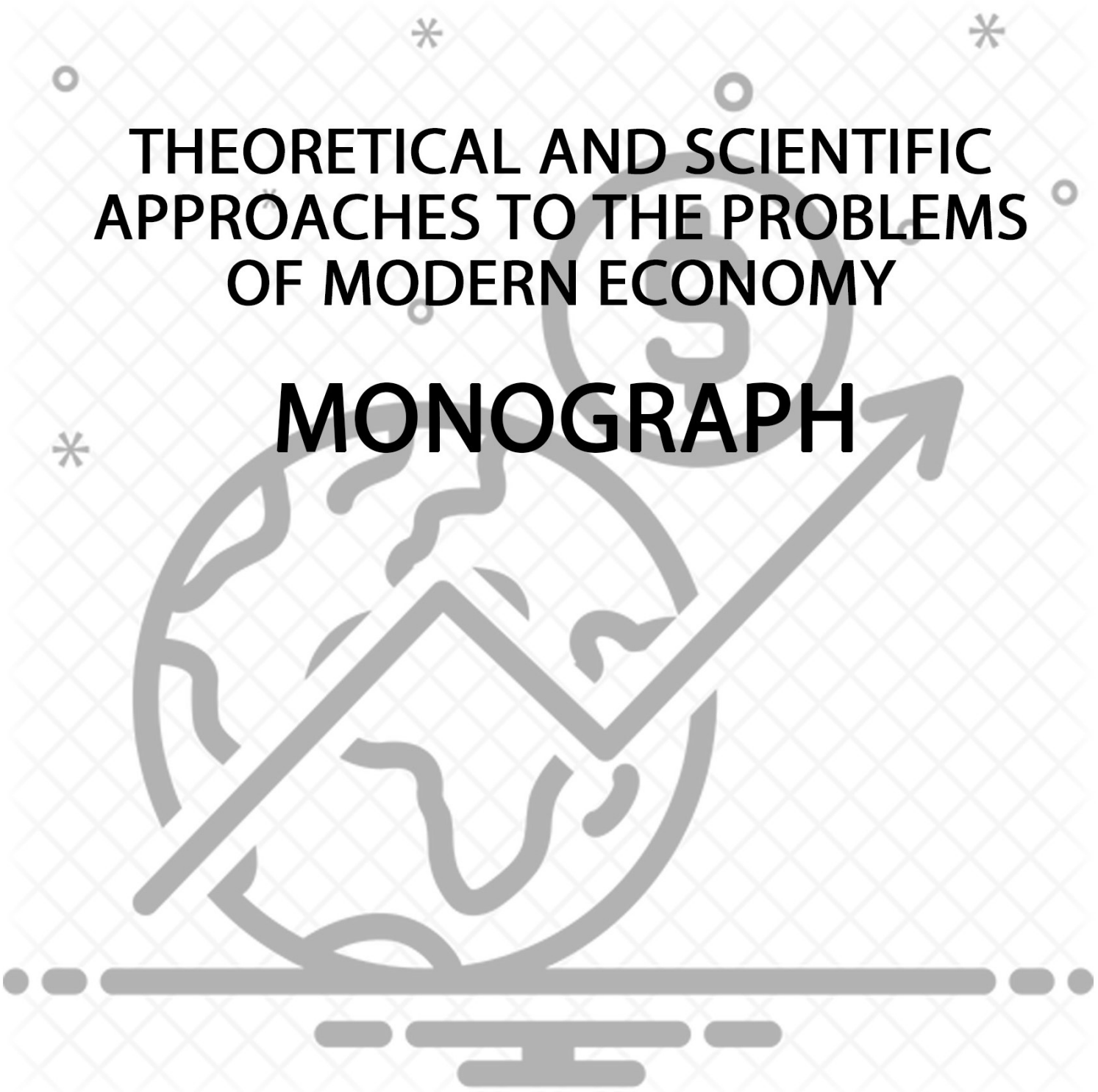
International Science Group
ISG-KONF.COM

THEORETICAL AND SCIENTIFIC APPROACHES TO THE PROBLEMS OF MODERN ECONOMY

MONOGRAPH



DOI 10.46299/ISG.2020.MONO.ECON.I
ISBN 978-1-64871-915-8
BOSTON (USA) – 2020

ISBN - 978-1-64871-915-8
DOI - 10.46299/isg.2020.MONO.ECON.I

THEORETICAL AND SCIENTIFIC APPROACHES TO THE PROBLEMS OF MODERN ECONOMY

Monography

Boston 2020

Library of Congress Cataloging-in-Publication Data

ISBN - 978-1-64871-915-8
DOI- 10.46299/isg.2020.MONO.ECON.I

Authors - Polyvana L., Lutsenko O.A., Marenych T.H., Polyvana A., Volska A., Tripaĸ M., Volskyi O., Sirenko N., Baryshevska I., Melnik O., Poltorak A., Kosterchuk K., Moroz L.I., Pavlyuk M., Pavlyuk I., Natalia V., Marina P., Oleynik O., Dolha H., Iziumtseva N., Karamushka O., Mushenyk I., Semenyshyna I., Odarenko O.,, Pashchuk L., Poliatykina L., Samoshkina I., Poliatykin V., Stoian K., Dzhyndzhoian V., AntonenkoV., Chugunov I. Y., Koroviy V. V., Demchenko I. V., Krainik O.,Kuris Y., Sergiienko T., Kvasnytska R., Dotsenko I., Melnychuk N. Yu.,Zalyubovskaya S. S., Prykaziuk N.,Diachuk H., Kiian A., Sereda O., Skhidnytska H., Shevchenko I., HavryliukV.,Mushenyk I., Milena K., Hrabar M., Kashka M., Ivanenko V.,Pazynich O., Viktoriia B. KhachatrianV. Davidyuk L., Bulkot O., Bludova T., Fokina-Mezentseva K., Boretskaya N., Dinits R., Koibichuk V., Hordienko V., Shevchenko N., Kobushko Aleskerova Y., Hutsalenko O., Fedoryshyna L., Todosiichuk Vr. I., Kobushko Ia.,Tiutiunyk I. Sitak I., Shyriaieva N., Makarenko A., Kravchenko M.

Published by Primedia eLaunch
https://primediaelaunch.com/

The recommended citation for this publication is:
THEORETICAL AND SCIENTIFIC APPROACHES TO THE PROBLEMS OF MODERN ECONOMY: monography / Polyvana L., Lutsenko O.A., Marenych T.H., Polyvana A. etc. – International Science Group. – Boston : Primedia eLaunch, 2020. 371 p. Available at : DOI : 10.46299/isg.2020.MONO.ECON.I

TABLE OF CONTENTS

SECTION 15.
ENTERPRISE ECONOMICS AND PRODUCTION MANAGEMENT

15.1 Financial mechanism of organizational and economic basis of effective use of land for organic production

Introduction

Earth is the wealth of mankind, the main means of production, the efficiency of which affects the performance of an entity. In addition, the efficiency of the land used in different sectors of the economy is a factor in improving the competitiveness of the national economy with sustainable economic results.

The issue of land use efficiency is relevant to the present day, as it concerns, first and foremost, environmental protection of the environment and environmentally safe use of land resources, protection of soils and increased fertility.

The land issue is one of the priorities in shaping the sustainable development of the agricultural sector of the national economy. Therefore, the problem of resource potential, in this case - land, land, should be based on the concept of resource conservation, land greening and environmental trends of government programs. The following Ukrainian scientists are actively engaged in scientific problems of organizational and economic foundations of efficient use of land for organic production, namely: Borschevsky P.P., Gunchenko O.V., Dadashev B.A., Zinchenko O.I., Korenyuk P.I. , Korchinskaya O.A., Koshkalda I.V., Makarova V.V., Makin G.I., Semenda O.V., Kharchenko T.O. and other.

Emphasizing the scientific theoretical, methodological and practical value of conducting research and the results obtained, it should be emphasized that a number of problematic issues regarding the efficiency of land use in agriculture require generalization and further development.

The purpose of the study is the financial mechanism of organizational and economic basis of effective use of land for organic production.

Economic crisis effects on consumer behavior

Earth is a priority resource for the life of both individuals and society as a whole. Therefore, the issues of its effective use have always been on the verge of discussing points of view on ecology, economics, resource conservation, environmental protection, etc. Today, these issues are quite extensive, but many issues (efficiency, efficiency assessment, implementation of energy-saving technologies of land resources) need further elaboration. Depending on the nature of the industry, there are different ways of assessing land use.

Scientists have a consensus on improving economic efficiency and achieving better results in agriculture, emphasizing that an integrated approach to address all environmental factors: economics, legislation, policy, natural processes, etc., plays a big role. Quantitative and qualitative indicators, which are rather individual in nature and require detailed study and definition of economic indicators, are traditionally used to assess land use efficiency. [270]

The modern agro-ecological state of the environment contributes to the development of organic production as a promising avenue for agricultural production. However, for organics to emerge, it is necessary to give the farmer the economic feasibility of producing them. The practice of market economy confirms the indisputable truth that the efficiency and effectiveness of agricultural enterprises depends primarily on the effective use of land.

The Great Ukrainian Interpretative Dictionary interprets the category of effective (Latin effective) as a characteristic of any object (device, process, event, activity) that reflects its public benefit, productivity and other positive qualities. [269]

Efficiency is the ratio of the beneficial effect (result) to the cost of obtaining it.

Considering economic efficiency, it is clear that it is closely linked to the main purpose of human activity - to meet the ever-increasing material and spiritual needs of society. Economic efficiency:

1) indicator of saving of social work as a result of application of certain measures;

2) comparison of the results (including indirect and indirect) of economic

activity with the spent resources: labor, material, natural, financial, fixed capital, etc. The theory of efficiency develops methods of measuring the costs and results of the functioning of the national economy and its individual units.

The economic efficiency of land use in agriculture is characterized by a system of natural and value indicators.

Natural indicators include:

1) crop yields;

2) production of certain types of agricultural products per 100 hectares of land (milk, meat of all kinds, beef, wool - per 100 hectares of agricultural land; grain, sugar beets and other crop products, as well as pork - per 100 hectares poultry production - per 100 ha of crop area).

Cost indicators include:

1) the cost of gross and marketable products per 1 ha of agricultural land;

2) gross and net income and profit per 1 ha of agricultural land.

Improvement and rationalization of the use of land in agricultural enterprises is achieved by taking measures to increase soil fertility, protection against environmental damage and erosion. The policy of the state should aim at land use so that future generations have it in the best possible condition. Current trends and many intensive technologies in agriculture must be carefully studied and tested before use to prevent the negative effects caused by the specific manifestation of the means of production. [280]

In addition, the specific features of the industry should be taken into account, namely:

- the relationship between economic reproduction and reproduction of natural resources;

- the property of the land at the same time to serve as the main means of production and the object of industrial relations;

- seasonality of production;

- interdependence of agriculture with other branches of the agro-industrial complex. [270]

These circumstances have a direct impact on the product's ability to meet social needs as intended, which in turn results in the profitability of producers. The likelihood of such a result makes the optimal distribution of intellectual, natural, economic, technical and information resources. The allocation of resources by characteristics also provokes the classification of efficiency as follows: technical, structural, economic, environmental and social. The characteristics of these categories are based on a comparative analysis of the relevant costs of achieving a certain volume of output of the required quality products and revenues from its realization. [267]

Land use efficiency can be measured by economic indicators, but before doing so it is necessary to analyze a number of other factors that directly affect land use efficiency. The expediency of using agricultural land is closely linked to soil fertility rates and the magnitude of financial contributions to production. For fertility, this factor is due to geographical location and climatic-natural influence, and if for the next factor, it depends on the nature of land use, crop culture, use of agricultural machinery and fertilizers, labor organization, etc. [270]

Improving the efficiency of land use is a key objective in agriculture in the form of increasing the volume of products produced per land unit in economic terms. Therefore, land use efficiency is closely related to the notion of profitability of land use. The optimum size of land area for the purpose of performance evaluation is on average 1 ha.

According to V.V. Makarova, the indicators of land use efficiency include natural characteristics of land (soil fertility, relief, location); degree of development of productive forces (culture of agriculture, production technology, state of logistical base); system of economic and legal relations, etc. According to her, the main condition for improving the economic efficiency of agricultural production and the creation of competitive products in market conditions is rational land use and land use of agricultural products. The basis for determining this indicator is the method of specific participation, which requires the presence of two components: a set of objects and comparable indicators - the area of agricultural land and the cost of

production. [270]

According to OI Zinchenko, in determining the economic efficiency of the use of land resources for crop production, determine the indicators that characterize the use of economic territory: the ratio of agricultural land to the total area of the enterprise (characterizes the structure of land); level of plowing (characterizes the structure of agricultural land); the ratio of the sown area of individual crops to the total sowing area (characterizing the structure of the sown area).

The main indicator of economic efficiency of land use is measured by the cost of production per unit area. This indicator reflects not only land use, but also the entire production potential of the enterprise, its coherence and interchangeability. Economic efficiency of production is the main characteristic of the performance of enterprises.

According to some scientists, economic efficiency is measured by the ratio of produce per 100 hectares of agricultural land. To evaluate the effectiveness of economic management of agricultural land by other scientists, a methodology based on the use of effective indicators of efficiency and intensification of agricultural land use, which should include: natural intensification indicators that characterize the output per unit of land area; natural indicators characterizing the increase of production over a certain period per unit area; economic indicators characterizing the ratio of the value of gross output from 1 ha of land to the main assets of the organization; economic indicators that characterize the cost of production; economic indicators characterizing the output of gross and net income per hectare of agricultural land, etc; economic indicators characterizing the ratio of gross output per hectare to cost per hectare. [270]

To determine the economic efficiency of agricultural production, they use a system of economic indicators that characterize the output of gross output and net income per unit of production costs. Land quality factor is also taken into account, which can have a significant impact on the change in performance. Of particular importance in the analysis of agricultural production are indicators calculated per unit of land area. An important role is played by rationalization of land use, which

influences the general indicators of the quantity of production and the efficiency of land use. [267; 270]Of course, none of these factors justify the approaches in isolation, as they affect product output and performance metrics. Thus, the volume of gross output (net production and net income, respectively) per unit of land directly depends on the quality and method of land use, as well as the size of financial investments and means of production. In order to determine the relationship between agricultural production efficiency and land quality, it is necessary to calculate this indicator on land of different quality, provided that all the same factors are present. Consideration should also be given to the use of larger volumes of fertilizers, additional labor costs and working materials. Given the change in factors within certain quantitative limits, when the relationship between them may not appear or be insignificant, it is possible to evaluate each factor individually.

According to many economists, a generalized assessment of the activities of agricultural enterprises is the level of profitability, which is essentially a ratio of profit to the level of production costs. GI Makin emphasizes that the criterion of economic efficiency in agro-industry is profit. [277] S.A. Konstantinov clarifies the formula of the criterion of efficiency of production of an agricultural enterprise, emphasizing that it is the maximization of profit per unit of agricultural land while minimizing costs. [272] In order to select the main indicator of economic efficiency of land use, the following questions should be answered: what agricultural products are selected for calculation, which land should be calculated, what indicator characterizes land use (gross production, income, profit, etc.), what indicators should be used (natural / value).

Central to this is the value of commodity output per unit of land area. According to scientist V.S. Shamanaev, for a more objective characterization of the efficiency of land use as the main means of production in agriculture, it is necessary to deduct from the cost of commodity products of crop production all consumed means of production in order to avoid recalculation of production [284].

According to other scientists, the indicators of economic efficiency are productivity and labor intensity, productivity and capital intensity of products,

economic efficiency of capital investments, new equipment, energy consumption of products and so on. According to V.K. Tereshchenko, the criterion of evaluation in agricultural production is economic efficiency, because efficiency is affected by many factors. The choice of this criterion is also associated with an increase in the production of consumer values, based on increased productivity and rational use of production resources. In a market economy, the economic efficiency of farms can only be fully evaluated after the sale of products [272].

Scientist V.G. Andriychuk emphasizes that it is appropriate to use indicators such as the intensity and effectiveness of their use in characterizing and assessing the use of agricultural land by agricultural enterprises. The level of land use intensity is determined by the following indicators:

- degree of economic land use;
- degree of plowing;
- degree of reclamation;
- the share of intensive crops in the total acreage of the enterprise;
- land reuse factor. [267]

The economic efficiency of land use is measured by value and natural indicators. Natural indicators include: crop yields; production of certain types of livestock products per 100 hectares of corresponding land (cattle and sheep production is calculated per 100 hectares of agricultural land, pig production - arable land, poultry farming - on the area of cereals). Cost indicators include: production of gross output at constant 2010 prices, production of commodity (sold) products at current selling prices, net production and profit per 1 ha of agricultural land, where natural indicators characterize the productivity of only a certain part of agricultural land, and value - the entire area of agricultural land.

According to the International Federation of Organic Agricultural Movement in Ukraine, as of 01.01.2016, there are 178 certified organic farms, the total area of which is 403.0 thousand hectares. In addition, 530 thousand hectares of wild animals have been certified in Ukraine

At the same time, as of January 1, 2016, there are 16 non-resident certification

companies operating in Ukraine, which carry out certification of agricultural production according to the rules of organic production, adopted in accordance with EU Regulation No 834/2007.

According to the Law the current structure of functioning of organic production in Ukraine is as follows

The Cabinet of Ministers of Ukraine directs, coordinates and approves by-laws; The Ministry of Agrarian Policy of Ukraine shapes the state policy, develops detailed rules and criteria for the quality of land, their suitability for organic production, prepares proposals for the appointment of conformity assessment bodies;

The central executive body implementing state policy in the field of safety and certain indicators of food quality, in the field of production and circulation of organic products (raw materials), carries out state supervision (control) of the activities of economic entities and conformity assessment bodies and maintains a register of producers organic products;

The Ministry of Economic Development of Ukraine appoints conformity assessment bodies and maintains their register, organizes the preparation and certification of auditors for certification, organizes the supervision of the designated conformity assessment bodies, determines the rules of the procedure of conformity assessment;

Organic production conformity assessment body (certification body) performs:

1) Evaluation (Certified Certified Auditor and / or Conformity Assessment Specialist),

2) Confirmation of conformity of production, assessment of conformity of production of organic products (raw materials); issuance, refusal of issue, revocation of the certificate.

The current certification scheme, unlike the organic sector control systems in the EU, is too regulated, which requires considerable time and energy from operators to develop activities in this field.

Presence of regulatory gaps, ambiguity of the provisions regarding the definition of organic production as an economic system, the entity engaged in organic

production, the Rules of organic production and circulation of organic production, the procedure for certification of organic production, the implementation of state supervision (control) of the activities of organic market operators , the requirements for organic production and the circulation of organic produce do not allow agricultural producers who decide to ovadyty organic production principles for managing it effectively.

A working group set up by the Ministry of Agrarian Policy with the participation of organic producers, representatives of public organizations uniting participants of organic production and scientific institutions has prepared a draft Law of Ukraine "On Amendments to Some Legislative Acts of Ukraine on Organic Production and Organic Trafficking", which provides for improvement of legislation in the field of production and sale of organic agricultural products (raw materials) to ensure full and effective development th production.

Organic is forbidden to apply artificial mineral fertilizers, forbidden GMOs, there are different standards that regulate the distance between traditional fields and organic. In 2015, there were approximately 210 organic producers in Ukraine. These are mostly family farms that grow organic vegetables, berries, greens, fruits, develop livestock and dairy. Family farms are a successful form of farming in many developed European countries: Poland, Italy or the Netherlands families own an average of 5-15 hectares of land. In Ukraine, most organic producers own an area of 0.5-2 ha. One of the farms of Cherkasy region, with an area of only 2 hectares, today produces 42 types of certified organic products - greens, salads, vegetables and processed products. Regarding the achievements of organic producers this year, it can be noted that their number is constantly growing, regardless of whether there is state support or not. Organic sector representatives are convinced that there is no competition here: the more successful farms and quality products are grown, the better for all participants, especially for exporters. A large batch of homogeneous products can be more expensive to sell for export. Therefore, cooperation in this case is an advantage for all participants, because the price premium can be 50-80%, you only need to have good volume and proper quality. The organic market in Ukraine in

2016 was estimated at 20 million euros (+ 17% compared to 2015), for comparison: in Germany it is 8 billion euros. Compared to European countries, our consumption of organic products is just beginning to develop, most of the products are exported. In particular, one in four tonnes of organic wheat in Europe comes from Ukraine. There is a great demand abroad for frozen berries and fruit products (apples), fresh and processed. A segment such as fresh vegetables, herbs, fruits, dairy products is finding its consumer in the domestic market. Kutovoy's 3 + 5 APC strategy states that organic matter is a priority for Ukraine. After all, it is a niche export-oriented product, high-margin direction. This also applies to land use, ecology, conservation of natural resources, etc. Last year, Ukraine exported cereals for 8 billion euros, the market for organic products in Germany alone is valued at the same amount. By exporting raw materials, we deplete the soil and do not get the proper economic effect. Instead, value added production and organic production should be developed. European farmers can develop organic direction because the state provides them with sufficient financial support. The average amount of such aid in Europe is € 200–300 / ha. In the first years of organic cultivation, the yield will not be as high as in traditional agriculture, in addition, the farmer will not be able to sell his produce as organic during the transition period. There should also be certification costs for farms that are partially or fully covered by the state in European countries. By defining organic products as a priority, it is necessary to provide state financial support to organic producers and exempt them from taxation for at least the first 2-3 years of the transition period or to provide tax benefits. A separate issue is the decline in soil fertility in Ukraine, one of the reasons being that land is not property. It is also necessary to create effective bodies for monitoring the state of land resources.

It should be noted that organic crop products also include wildlife products. In Ukraine, 300 thousand hectares of wild animals have been certified. About 6% of organic farms are engaged in harvesting berries, mushrooms, nuts, medicinal raw materials and birch juice. The vast majority of these products are also exported. Crop production is significantly influenced by the crop yield, which can be analyzed using the example of certified organic farms in Ukraine. In general, according to 22

years of Cornell University experience, the results of which were published in 2005, organic methods of growing cereals and soybeans have the same level of yield as traditional ones, with a significant reduction in fuel costs. The American experience shows that the average yield of organic farming is 95-100% of traditional [276].

Grain yields in the studied economy increased by 97%, early cereals - by 110-116%. Sugar beet yields increased by 64% and sunflowers by 74%. Comparing the yield levels of crops grown by organic technology with the data on the average in the Shyshatskiy rayon and Poltava region, we can conclude that much higher yield levels in PE "Agroecology". Thus, if the yield of cereals and legumes in the farm was 43.8 centners per 1 ha, in the same period the average yield in the region was 33 centners per 1 ha, and in the region - 24.2 centners per 1 ha [272].

The Poltava region is indicative of the progress of organic production. Organic farms of the region specialize in the production of cereals, legumes and livestock products. The average yield of cereals grown by organic technology is inferior to the yield of crops grown under traditional technology and ranges from 75.1-97.7%. Agriculture in this enterprise is conducted under the "Drevlyanskaya" system with four-axis rotation: a diaper-oat mix for grain, rye, oat-mix, winter (rye, polba, wheat). Its essence lies in the biological way of restoring soil fertility due to the saturation of crops with annual legumes - field peas (diaper) and spring germination in pure sowing and in mixtures with oats and barley, spring rape, white mustard and white mustard. In the production process, weeds are used biologically, and nitrogen is replenished to improve the physical and microbiological properties of the soil - legumes are widely used. They also take all possible measures for the efficient cultivation of arable land and low-cultivated lands with high soil acidity levels. Emphasis is placed on the high crop saturation with winter cereals (up to 66%) and annual legumes (up to 50%). This method of production is characterized by the possibility of permanent changes in the structure of the acreage, depending on the needs of the market and ease of implementation, which consists in the use of reduced crop rotations and their high specialization.

As for the yield of organic spring barley, it exceeds the yield of traditional technology. And this leads to the conclusion that organic production can be an alternative to traditional agricultural production and, moreover, given the lower costs and higher price of organic produce, the alternative is quite profitable. It is known that production costs depend on the specifics of industry, culture, production organization, region and its climate, etc. The analysis shows that the cost of production on an organic farm is lower than that of a traditional farm, especially when crops are grown. Twenty years of research in Switzerland show that, with all other things being equal, the costs of producing crop products (primarily winter wheat and potatoes) by organic and traditional technologies were as follows: the cost of maintaining fertility is 50% lower in the organic economy; costs of disease control - 97% lower in organic farming; energy use is 50% lower in organic farming.

It should be noted that the costs of purchasing and using mineral fertilizers and plant protection products, which are prohibited in organic production, are not included in the articles of costs in the production of organic crop production. This significantly reduces the cost of production of these products. In addition, analyzing the structure of material costs for agricultural production in organic and traditional farms of Poltava region in 2011, we can note the reduction of costs for petroleum products, spare parts and repair.

Similar findings are also demonstrated by the results of the activity of FG Don Oleksiy Pylypovych, Teplitsky district, Vinnytsia region, which is engaged in growing organic agricultural products. Thus, comparing the costs of organic production in this farm and the average data on the farms of the district in 2013, it should be noted that only the production of barley spring production costs by organic technology exceed the average cost of farms (by 8.51%).

The cost of production of 1 oz of organic winter wheat, soybeans and buckwheat is much lower than the cost of producing these types of products by traditional technology.

The system of certification of organic agricultural products covers the whole chain of promotion of organic products from producer to consumer (from field to

table): certification of soils and water sources for environmental cleanliness; certification of production technologies; control of the production process on the field; primary processing of products; packaging; sorting; purification; washing; processing of organic raw materials; production of prepared food products; transportation; storage; sale of organic products.

Unfortunately, Ukraine has not developed its own national standards, so domestic products are certified by internationally recognized standards. The certification of organic products is based on the following standards:

- Council Regulation (EC) No 834/2007 containing the rules and requirements for organic production and the corresponding labeling of agricultural products and foodstuffs. It operates within the EU and is the most widely used standard for organic certification in Ukraine;

- National Organic Program (NOP) - the US national organic program, which certifies organic products destined for the US market;

- Japanese Agricultural Standards (JAS) - Japan's national standards, according to which the certification of organic products intended for the Japanese market is carried out;

- Bio Suisse Standards - the private standards of the Swiss Bio Sisses Association, distributed in Switzerland and certified for organic products intended for the Swiss market;

- Organic Farming and Labeling Standards for BIOLan agricultural products and foodstuffs are private Ukrainian standards created on the basis of international organic production standards and certification of organic products intended for the Ukrainian market is carried out accordingly.

Certification, as a major component of the warranty system, confirms the quality of organic produce at three levels:

The first is product safety (ISO 22 000 standard, GMP, BRC / IFS) Second - Product quality (ISO 9001-2009 standard)The third is Organic Quality (Organic production standards (EU regulation, private standards)) [10].

The evident result of certified organic produce is its marking. Marking is any

written, printed or graphic material present on a label accompanying a food product or a food product, such as commercial documents, shipping bills.

When choosing standards, domestic producers are oriented towards the end consumer of organic produce, since it must be certified in accordance with the regulations or standards of the country to which the products will be exported. The IFOAM (International Federation of Agrikulture Movement) is an international organization that develops standards and controls compliance with certification rules by accredited national organizations. Products cannot be recognized as "organic" unless they are certified by a body accredited by IFOAM and are not allowed to export abroad as such. IFOAM standards consist of the IFOAM Basic Standards for Organic Production and Processing, and the IFOAM Principles for Accreditation of Organic Production and Processing Certification Authorities. IFOAM accreditation based on these standards is carried out by a non-profit, independent institution, the International Organization for Accreditation of Organic Production IOAS [270].

The total area under organic production in Ukraine is about 400 thousand hectares - less than 1% of all land. At the same time, the main organic products grown in Ukraine are exported for more than 100 million Euros. The domestic market today exceeds € 20 million and continues to actively expand through major supermarket chains, which are increasingly developing an attractive and image-based organic product line.
Organic production potential in Ukraine is ten times higher than current capacity. So, at the end of 2015, German traders were trying to buy 100,000 tonnes of organic wheat in Ukraine. Domestic producers with EU organic certification were able to collect 10 thousand tons of the total 20 produced in Ukraine.

The cost of production in organic plant production is lower than intensive chemical technologies by $ 200-400 / ha, the major part of which (55-65% of the total cost) consists of energy-intensive agrochemical products. Profitability per 1 organic export-oriented hectare reaches $ 1-1.5 thousand under the conditions of complex agricultural production and adherence to optimal growing technologies.

“Super-food” cultures produce even more profitability than classic cereals and

legumes. More interesting are the niches of organic nuts, berries, medicinal plants, oleaginous crops and cereals such as polba, buckwheat and oats. Even the production of organic hay for export is several times more cost-effective than growing inorganic corn or soybeans.

The main reasons for limiting the development of organic production in Ukraine are the myths about the "transitional period" risks, low awareness of producers and investors about the state of the global organic produce market, general conservatism of investors in the agro-sector, commercial interest in non-chemical production technologies. On the other hand, there is a lack of qualified specialists, academic and practical training bases and any state strategy for the development of agricultural production.

Survey methodology

Ukraine has considerable potential for shaping the supply of organic agriculture. First of all, it manifests itself in the favorable natural and climatic conditions of the country, which are suitable for growing many types of crops. The fertile lands of Ukraine provide on the foreign market its competitive advantage in the production of agricultural products. However, due to the active use in agriculture of toxic chemicals, antibiotics, growth promoters, hormones, the issue of production of quality organic products becomes especially relevant. Thus, according to W. Beck's research, in today's world, with the increasing speed of scientific and technological progress, there is a widening global gap between the world of the risks that we think and act within, and the world of invisible threats. This is due to the fact that scientific and technological achievements in the field of atomic energy, genetic engineering, nanotechnology and other technologies have unpredictable, uncontrolled and unclear consequences for human life. Organic agriculture, along with the production of safe food at the present stage, is performing another extremely important mission - the preservation of the environment.
The basis of organic farming is, in fact, the return of the primary sources of agriculture, which increases the natural biological activity in the soil, restores the balance of nutrients, increases the amount of humus, normalizes the work of living

organisms [267].According to experts, Ukrainian land is capable of providing food to 140-145 million people, and therefore improving the use of land resources will increase the production of high-quality environmentally friendly products and ensure food security of the country, as well as expanding agricultural exports, preserving landscape and landscape country diversity [271].

According to domestic scientists, Ukrainian agricultural enterprises earn 79% of their income from the fertility of the land and only 21% as a result of the use of various technologies, which testifies to the considerable possibilities of agricultural production [272]. M. Andreishin has determined that Ukraine has about 26.6 million hectares of black soil (44% of the total area of Ukraine), or 6.7% of the world's black soil reserves, and the area of agricultural land with such soil is almost 23.2 million hectares, or 5.9% of the world's black earth. In the 30-ies of the last century, the content of humus in almost all domestic black earths was 6-8%. By the 80s, they had transformed into low humus - 3-5% [273].

Speaking about the potential of Ukraine's land resources in terms of organic production, it should be noted that as of 2012 the total territory of Ukraine amounted to 60354.9 thousand hectares, of which 41557.6 thousand hectares (68.86%) are agricultural land. The share of arable land is 78.1% (32.5 million hectares), which is much higher than in the EU. The high level of fertility of the land makes it suitable for growing valuable crops. Agricultural production is mainly conducted on the highest quality lands, the total area of which is 14.9 million hectares or 36% of the area of agricultural land. However, the distribution of valuable land throughout the territory is uneven - from 2.3% in Lugansk to 79.8% in Poltava regions. According to the research of V.I. A considerable part of the agricultural land is suitable for the production of organic products [273].

In Ukraine there are four soil-climatic zones, nine soil-climatic subzones, 23 soil nomenclatures and 1147 species, which contributes to the diversity of organic agricultural production [272].

According to research by domestic scientists, there are four regions in Ukraine where soils have not yet been contaminated to dangerous limits and where clean

production at the level of the most stringent world standards is possible:

• North Poltava - covers most of the Poltava region (except for the regions adjacent to the cities of Kremenchuk and Komsomolsk), northwestern districts of Kharkiv region, southwestern districts of Sumy region, southeastern regions of Chernihiv region and eastern districts of Kyiv areas (left bank).

• Vinnytsia-Prykarpattya - stretches a wide strip about 100 km from the town of Popelnya of Zhytomyr region and extends to the north of Vinnytsia, Khmelnytsky and Ternopil regions towards Lviv.

• South Podilsky - includes a small southeastern part of Vinnytsia region, southwestern part of Kirovohrad region, north of Mykolaiv region and northern half of Odessa region.

• Northeast Lugansk - covers Milovsk and Novopskov districts of Lugansk region [268].

The period of industrialization of agriculture in Ukraine has led to significant degradation of agricultural land. Thus, according to the State Land Agency of Ukraine, about 1.7 million hectares (4.1%) of agricultural land are subject to wind erosion (deflation) and 13.3 million hectares (32%) - water erosion, more than 2 million hectares of land (4 , 8%) are exposed to both water and wind erosion. The eroded lands include 4.6 million hectares of medium and heavily blurred land, including 68 thousand hectares of those that have completely lost the humus horizon. In addition, 10.7 million hectares (25.8% of agricultural land) are acidic soils, 2.3 million hectares (5.4%) are saline and 1.7 million hectares (4.1%) are saline. 1.9 million hectares are wetted, 1.8 million hectares are wetlands and 0.6 million hectares are rocky. More than 20% of Ukraine's territory is contaminated with various toxic compounds, including a large area contaminated with radioactive isotopes due to the Chornobyl disaster. Negative geological phenomena (collapse of the earth's surface, landslides, floods, rising groundwater, etc.) are widespread in more than 50% of the territory of Ukraine [271]. This all leads to a rethinking of the philosophy of management and the transition to organic farming. After all, organic production is a process that ensures the cultivation of agricultural products, using only biological

resources, without harming the natural environment. And the peculiarity of production of products by organic technologies is the care of the quality of produce and land to a greater extent than its quantity.

Comparison of soil humus indices during the time of V.V. Dokuchaev (1882) with those corresponding to the present soil condition, shows that the relative humus losses for the 120-year period reached 22% in the forest-steppe zone, 19.5 - in the steppe and about 19 - in the Polissya zones.

The National Report on Soil Fertility of Ukraine (2010) shows that a decrease in the weighted average humus content influences changes in the redistribution of areas by its availability [267]. Thus, according to the results of the 8th round of agrochemical certification, the area of soils with high and very high humus content is 22.7% (5.0 million hectares from 22.17 million hectares) surveyed and mainly concentrated in the steppe zone [267]. The area of soils characterized by medium and high humus content is 13.5 million hectares or 60.9% of the surveyed. Of these, 51.8% are concentrated in the Steppe, 33.8 - in the Forest-Steppe, 14.4 - in Polissya. According to calculations, the humus balance in the soils of Ukraine has been sharply scarce in recent years and ranged from 0.4-0.8 t / ha. In the regions, the lowest humus balance deficits were observed in the Transcarpathian (-0.01 t / ha), Dnipropetrovsk (-0.08 t / ha), Kyiv (-0.08 t / ha) and Ternopil (-0.08 t / ha), and the largest - in Vinnitsa (-0.87 t / ha), Rivne (-0.84 t / ha) and Zaporizhzhia (-0.81 t / ha).

The estimated parameters of annual humus losses on chernozems under cereals of continuous seeding are 0.6-0.8 t / ha, under tilled - 1.5-2.0 t / ha and black steam crops - 2.0-2.05 t / ha [271].

The results of scientific research and practical experience with the use of the non-grain part of the crop show that straw is the effective part of improving the fertility of arable land, maintaining a deficient balance of humus and nutrients, and some of it must be turned into a biological crop in one way or another. The data in Table 3.1 show the effectiveness of nutrient-root residues in humus formation. The direct introduction of straw into the soil will largely solve the problem of recycling excess straw and at the same time improve the humus cover of the soil.

Provided that grain is harvested at 40 million tons, Ukraine produces 40-45 million tons of straw, of which about 20 million tons can be used as organic fertilizers. With average grain yields per hectare of crops, 15-20 kg of nitrogen, 8-10 - of phosphorus and 30-40 - of potassium, as well as a number of trace elements, will return to the soil. Considering the area of winter crops alone (about 7 million hectares), it saves over 100 thousand tonnes of nitrogen, 70 thousand tonnes of phosphorus and 250 thousand tonnes of potash fertilizers annually [272].

The scientifically sound application of straw as an organic fertilizer has a positive effect on the humus condition of the soil and, with the humus equivalent of 37 μm, straw corresponds to 100 μg of manure or 270 μg of green fertilizer [272].

Without reducing the value of the use of crop by-products for crop fertilizer and siderates, it should be noted that at the expense of them it is possible to compensate only one third of the needs of agriculture in biogenic nutrients of plants. Therefore, we believe that the main reserve in providing a deficit-free crop fertilizer system is to increase production, manure and organic compost.

In general, an organic fertilizer system involves the application of the principles, rules and methods of organic farming in accordance with international rules, which prohibit the use of chemically synthesized and genetically modified organisms. According to these rules, the use of fertilizers and plant protection products is only of natural origin.

Thus, it is necessary to introduce in the production of soil-protection crop rotations with the optimum ratio of crops, as well as to expand the area under perennial grasses, to grow intermediate crops and siderat, etc., which will have a positive effect on the quality of the land and increase the opportunities for the formation of the offer of organic agricultural products.

Domestic scientists argue that scientifically valid short and full rotation crop rotation is one of the factors in maintaining soil fertility. Alternation of cultivated and grain crops provides accumulation of organic matter of root residues and crop residues in the arable layer, and introduction, in addition, of the legume component creates conditions for fixing by the root system of biological nitrogen. The value of

rotation is also to eliminate such phenomenon as soil, provides biological diversity, has a positive effect on soil biological activity, on the increase of moisture and water nutrition of plants, on the regulation of photosynthetic activity, etc. [272].

Crop rotation is a scientifically sound rotation of crops and vapors in time and in territory or only in time. Alternating over time means that there is an annual or periodic change of crops and clean steam on a particular field. During alternation, crops are grown annually (alternately) in different parts of the field on which they alternate over time.

Crop rotation is required to obtain higher yields, since cultivation of the crop on the same field (area) depletes the soil and increases the risk of disease and pests. The crop rotation uses the fact that different field crops, by their biological properties, can actively restore soil fertility. Plants, depending on the species, can influence such factors as nutrient and moisture content, humus content, biological regime, physical properties, and the rate of detoxification of harmful substances entering the soil during its agricultural use.

Crop rotation allows you to develop an agronomic strategy for increasing soil productivity and crop yields, to identify and interconnect in a single complex all the links of the agricultural system. The specialization of crop rotation, composition and alternation of crops depend on the systems of fertilization, mechanical tillage and other agricultural and ameliorative measures [274].

In the 25 postwar years, the countries of Western Europe doubled, and in some cultures and three times increased the yield compared to the prewar period. The analysis of the structure of yield increase, performed by foreign researchers, showed that intensive growth of agrocenosis productivity by 50% is due to the fertilizer system, 25% to the system of soil cultivation and care of the cultivated crops, 15% to new varieties, hybrids and seed system. % - on improvement of rotation [276]. Thus, the cultures of continuous seeding have the lowest value of the mineralization factor, and due to cultivated crops this indicator increases. It is established that with the increase of the share of cultivated crops in the structure of the sown area by 10% annual humus losses increase by 0.2-0.4 t per 1 ha.

In crop rotations with herbs and intermediate crops of annual crops and siderata of deficient balance of humus can be achieved by applying much smaller doses of organic fertilizers, and in cereals and forage crop rotations, where the proportion of herbs is about 40% - even without additional application.

The positive impact of organic production on the composition and properties of the soil is confirmed by the results of a long experience of the Institute of Organic Agriculture in Switzerland.

Thus, studies show that crop rotation has a direct impact on the formation of organic agricultural supply.

It is well known that fertility elements include specific soil properties that determine the yield level. Namely: water-air, physical and chemical properties, content and composition of salts and organic matter, nature of soil absorption complex, capacity and saturation of soil bases, buffer capacity, structure and structural state of soil, composition and number of soil organisms.

Soil biological activity is determined by the amount, composition and activity of soil microorganisms and soil fauna, as well as enzymes that directly participate in the transformation of inaccessible soil nutrients and plant residues into the compounds available to them. Microorganisms that stimulate plant growth and development are extremely important. However, improvements in agricultural production and accelerated rates of scientific and technological progress extend the degree of human impact on the biosphere as a whole and especially on agrobiocenoses. Thus, the intensification of agriculture leads to a disturbance of the balance between microorganisms in favor of pathogens, which leads to the accumulation of infection and infection of plants.

Thus, over 60% of acreage in Poltava, Kyiv, Vinnitsa, Khmelnitsky, Rivne and Lviv regions are infected with root rot pathogens. Crop losses from these diseases can range from 30 to 50% or more. Therefore, methods of biological enhancement of soil fertility are important [267].

In general, according to FAO, humanity does not harvest an average of 34% of the potential crop because of losses from harmful organisms that use environmentally

hazardous chemicals and consumers. As of 2011, 1,132 types of pesticides were registered in Ukraine, incl. 187 insecticides, 241 fungicides, 132 chemical agents, 469 herbicides and only 44 biologicals [271]. Biological preparations are allowed in organic agricultural production. The basis for them are useful for the protection of plants really existing in the nature of microorganisms or products of their vital activity, which cause disease and death of plant pests.

Biological plant protection is based on a systematic approach and comprehensive implementation of two main areas: conservation and promotion of the activity of natural populations of useful species (entomophages, microorganisms), self-protection of cultivated plants in agrobiocenoses and renewal of agrobiocenoses with useful or non-viable species. The fundamental elimination of the biological method of plant protection from any other is the use of the very first direction, which is carried out using biological preparations, methods of seasonal colonization, introduction and acclimatization of zoophages and microorganisms. Agro-technical measures contribute to the multiplication and efficiency of useful species, and some ways of cultivating soil can help to create favorable conditions for the life of zoophages.

The first scientific experiments on the use of biological methods of struggle were investigated in the 70-80-ies of the XIX century, when Mechnikov discovered pathogens of fungal and bacterial diseases of the grain beetle and practically substantiated the prospects for the use of pathogenic microorganisms [273].

To date, the biological method is one of the components of an integrated system of protection and is used in combination with other pest control agents.

All microbiological preparations have a number of positive properties, among which the most significant are: highly effective against target pests; harmless to humans, warm-blooded animals, fish, pollinating insects, entomophages; do not accumulate toxic substances in the environment and crop products; non-toxic to plants; not addictive; can be used in any phase of plant vegetation.

Therefore, it can be concluded that the use of biotechnology is also one of the factors that directly influence the formation of the supply of organic agricultural

products.

In our opinion, an important determinant of influence on the formation of supply of organic products of agriculture is the technology of cultivation of crops. Yes, the application of traditional farming systems usually results in the depletion and degradation of soils. Therefore, so-called soil-tillage and No-till technologies have become widespread today.

No-till - "zero technology" - a term that came to us from North America. In the UK and South America, the concept of "direct sowing" is used to describe this process. This farming system is based on the following principles:

- plowing is not a major component in growing crops;
- vegetable residues are a valuable product and should be on the soil surface as mulch;
- the burning of plant residues (mulches) is prohibited;
- the presence of a permanent soil cover;
- Emphasis on the development of biological processes that ensure high soil fertility;
- biological control of insect pests;
- rational, which takes into account all the features of the terrain, the use of soil resources;
- optimum use of precipitation.

It should be remembered that No-Till technology is a holistic system, and the transition to direct sowing involves not only the abandonment of plowing, but also the complete restructuring of the worldview of farmers.

The idea of modern No-till was born in the 1940's in E. Falkner's research. His followers consider Klingman, L.A. Porter (New Zealand) and more. According to recent data, the worldwide use of No-till technology is around 105 million hectares. This includes America, where the area with newly introduced technologies is about 87 million hectares, Australia - 12 million hectares, other countries in the world - 6 million hectares. Six countries - Brazil, Argentina, the United States, Canada, Australia and Paraguay - account for 95% of the world's total

technology space, and European countries account for 2.5-3%. The area under No-till grows annually by about 1 million hectares.

According to domestic scientists, about 70% of arable land in Ukraine is suitable for the application of No-till technologies. The exceptions are wetlands and poorly drained soils where the level of biological activity is insufficient to efficiently decompose organic residues. Thus, O. Demidenko points out that practically all arable land in Cherkasy region (1.1 million hectares) is optimally suited to minimize soil cultivation: for example, for such cultivation under cereals, the area falls by 100%, which is almost 70% of the area of agricultural land.

Summarizing the work of domestic researchers, we can distinguish the following benefits of No-till: Sharp, 3.5-fold increase in productivity. Possibility of sowing of field crops in the best agrotechnical terms. Reduction of labor costs by 1.6 times, purchase of equipment - 1.5, fuel - by 2.2 times. Soil protection against erosion, deflation and anthropogenic re-compaction. Possibility of significant increase of organic matter and humus content in soil. In conditions of sufficient moisture increase of the coefficients of use of nutrients of plants from mineral fertilizers, first of all, phosphorus (especially at moderate application doses) due to the localization of fertilizers of the root system in the most biologically active surface layer. Preservation of soil moisture from losses on physical evaporation. Enrichment of soils for micro and mesofauna, in particular for earthworms, which play a significant positive role in the formation of soil fertility. Reduction of CO2 emissions into the atmosphere due to lower fuel consumption in the annual fieldwork cycle. Ability to extract hundreds of millions of tons of CO2 from the atmosphere and secure it in the form of soil organic matter. The possibility under certain conditions (but not always) to increase the yield of field crops and reduce the cost of crop production. Leveling the surface of the fields, which improves the conditions of work of mechanizers and the operation of technical means and reduce the vibrational load on the human body and metal.

Therefore, given the benefits of using No-till technology, we believe that this technology will be widely used in organic agriculture in Ukraine. Of course, along

with the advantages of No-till technology, domestic manufacturers also point out a number of disadvantages, one of which is the price. Thus, the high cost of the basic equipment for zero tillage - direct sowing machines, so the replacement of existing tillage and sowing equipment, which has mostly worked out the depreciation terms, is a serious financial problem for any farm. The price of different complexes with different capture width and set varies from 30 to 300 thousand USD.

Annual depreciation on a 5-year basis using traditional technology is: $ 3.22 million: $ 5 = $ 664,000. That is, the depreciation load per hectare is $ 66.4 US. For No-till technology, the annual depreciation charge is 550000: 5 = $ 110000 and the $ 1 ha of depreciation is $ 11. The cost of equipment used by traditional technology is 6 times higher than the introduced No-till technology. The savings in the introduction of No-till technology on an area of 10,000 hectares in just one year equals the cost of new, high-performance equipment required to implement the technology. Therefore, it is advisable to use it in enterprises with a large area of crops, which are characteristic of modern organic farms in Ukraine.

According to T. Burnsen, the advantage of the No-till farming system over the traditional one can be expressed by the following indicators:

- investment in agricultural machinery is lower by 39%;
- tractor power requirement is lower by 75%;
- labor costs are reduced by 80%;
- fuel consumption is lower by 84%.

Along with this, one of the resource-saving technologies is strip-tile technology, or strip processing, which combines all the best moments of minimal tillage and No-till technology. However, if the transition to No-till technology in the first years, there is a decrease in yields, then the technology of "strip-till" yields may even increase. Strip deep loosening of the soil in the area of seed sowing helps to improve the physiological state of the soil, increasing its permeability.

Strip teal is the cultivation of only the strip of soil that will be sown, 25-30 cm wide and 32 cm deep, in order to destroy the soil compaction, create a loose seed bed and conditions for its rapid warming in the spring.

Along with the agrotechnical advantages of strip-body, domestic researchers also highlight the economic benefits:

• Reduce pre-sowing apertures to 1 or 2.

• Reduce fuel consumption by up to 70% compared to traditional technology.

• Reduction of fertilizer up to 30% due to more accurate and closer rooting.

• Reduction of labor costs and extension of technical service life.

It should be noted that this technology greatly simplifies the management of the farm, because the farmer knows that in one pass he creates the ideal conditions for sowing.

All the agro-technical benefits that lead to higher yields, in addition to significant cost reductions, make strip-telly a new effective approach in organic farming.

In addition to production technology, the supply of organic produce is influenced by the quality of the seeds and varieties used in organic production. Thus, in accordance with the requirements of organic production, seeds, vegetative organs and seedlings must be grown on farms with an organic production system, and seeds obtained in conventional farms should be treated exclusively with preparations and means authorized in organic production.

Seeds, vegetative parts of plants used for reproduction and seedlings are considered organic if:

- the seeds are not genetically modified and are not genetically modified organisms;

- the use of seeds grown with the help of genetically modified organisms or of any products or substances derived therefrom is prohibited;

- previous reproduction is grown in an organic production system for a period of not less than one year.

As an organic planting material, vegetative parts of plants (seedlings, buds, shoots, seedlings) that have been grown under organic farming for at least two years should be used.

Ukraine has a strong potential to produce high quality seeds. In recent years,

resources of domestic breeding have increased significantly in the State Register of Plant Varieties of Ukraine. Among winter cereals, there are 79% of them, among those that are sown, including wheat - 85%, barley, legumes and cereals - 72-79%, technical and oilseeds - more than half. They are characterized by high productivity, grain quality, resistance to lodging and various diseases, have high environmental plasticity.

Economic, economic and organizational-legal relations in the field of agricultural seed production in the current conditions of market relations formation in our country are regulated by the Law of Ukraine "On seeds and planting material", the Law of Ukraine "On protection of rights for plant varieties", the Law of Ukraine "On plant quarantine" ", State Standards of Ukraine: DSTU 2240-93" Crop seeds. Varieties and sowing qualities ", DSTU 2949-94" Crop seeds. Terms and definitions ", DSTU 4138-2002" Crop seeds. Quality Determination Methods ", as well as the State Register of Plant Varieties of Ukraine and the State Register of Seed and Planting Producers.

In addition, there are examples of successful organic seed production in Ukraine. For example, the Soy Age Group was established in 1997 in the Kirovohrad region. Since 2001, with the creation and registration of the Soy Age Age NSNF, the company has set its strategic goal of creating high-yielding soybean varieties that specialize in organic farming without using genetically modified organisms.

NSNF Soy Age has been successfully certified by the Swiss IMO for compliance with the requirements of European Standards EC 834/2007 and 889/2008 for organic production, and in accordance with Certificate No. 100043 grown soybean seeds are certified with the status of "ORGANIC".

The main task of the organization:

- production of high-yielding soybean varieties without the use of genetically modified organisms and suitable for use in organic farming. These varieties rapidly and intensively increase the green mass at the beginning of the growing season, than quickly shading the soil around the plant, preventing the emergence and development of weeds;

- withdrawal of soybean varieties for the food industry - these varieties have a light yellow shell with a light scar color and high protein content;

- adaptation of soybean varieties to different climatic zones;

- production of original, elite seeds, suitable for growing in organic farming;

- promotion of soybean co-cultivation programs for seed production;

- improvement of high-quality agricultural cultivation of cultivation;

- the sale of competitive seeds that meet the requirements of European standards for organic products, the quality of which would fully satisfy agricultural producers and processors both in Ukraine and abroad;

- implementation of new improved loyalty programs;

- information support of the client base with the help of the Center for Agrotechnological Consultations.

The company has created a new variety of soybean "Anushka", which has successfully passed the state variety testing and is listed in the Register of Varieties of Plants of Ukraine since 2007. This variety has been tested not only in the fields of Ukraine - in 2008 the variety was registered in Russia, passed a successful variety test in Belarus, with further entry in the State Register of Varieties for 2009, showing a yield of 48 ц per 1 ha.

Since 2008, this variety occupies the largest areas of crops (almost a fifth of all soybean crops in Ukraine and 24% of crops of Ukrainian originators) and is the absolute leader among 106 soybean varieties of Ukrainian and foreign breeding. Having a growing season of 75-85 days, the Anushka soybean variety in the steppe zone allows to harvest two crops a year and is a reliable precursor to winter crops. This variety of soybeans was bred specifically for organic farming.

The organization is actively continuing to create new productive varieties. The Register of Varieties of Plants of Ukraine also includes soybean varieties: Anastasia, Silver Ruta, Smuglyanka, Antoshka, Bilyavka. Among the achievements of the company are such promising varieties as Mavka, Sandra, Atlanta and Alliance, which are undergoing state testing. The use of quality elite seeds grown using organic farming technology for 20-30% depends on the future harvest.

Farming, especially organic farming, requires considerable labor costs, on which the supply of organic produce depends. As of January 1, 2013, the population of Ukraine amounted to 45 million 553 thousand people, which is less than 7 thousand 251 persons compared to December 1, 2012. Urban population for the period. amounted to 31 million 378.6 thousand people, rural - 14 million 174.4 thousand people.

The economically active population is the population of both sexes aged 15-70 years, which over a certain period provides labor supply in the labor market. The economically active population (labor force) includes only those persons who were engaged in economic activity or were looking for a job and were ready to start, that is, classified as "employed" or "unemployed" (in the definition of an international labor organization).

Crisis processes in the functioning of the economic mechanism and the system of economic management, as a result of which sharply reduced production and consumption of products and services of all industries and, consequently, reduced demand for labor, led to a decrease in employment due to the reduction of employees. The largest volumes of rural population lay-offs were due to the reduction of employees in agricultural enterprises.

This has caused an increase in unemployment in all its forms, although the current level of fixation does not reflect the true size of the phenomenon. Many jobless villagers do not turn to the employment service because of the lack of prospects for employment in rural areas, low unemployment benefits, difficulty in registering, and the need for frequent re-registration, which is associated with the time and expense involved in remoteness relevant authorities. The majority of peasants who are released from agricultural and other enterprises and organizations are forcibly enrolled in the group employed in private peasant farms.

The analysis of the structure of employment of the population of Ukraine by types of economic activity shows that during the period 2000-2013 the share of the employed in agriculture, although decreased from 21.5 to 16.7%, but remains quite high relative to the countries with developed economies. However, such a high level

of employment in the agricultural sector does not provide sufficient agricultural production, while in the EU countries about 5% and in the US - 3% of the total labor force not only fully meet the needs of their own countries in the agricultural sector. agricultural products, but also a large amount of it is exported.

Findings

Thus, by analyzing the provision of economically active population to Ukraine, we can conclude that it has considerable potential for organic production. In summary, it should be noted that the financial mechanism of organizational and economic foundations for the effective use of land for organic production in Ukraine has all the necessary conditions and grounds for its further development, and the available potential - quality land resources, scientifically sound crop rotation, organic fertilizers, biological biology of agriculture, technologies of minimum tillage, reclamation of soil, use of raw materials, availability of labor resources - will allow to provide organic agricultural products not only to the population of Ukraine and production and export

As recommendations for action and tools to support an economically efficient organic sector, the following can be summarized as follows:

• State control and support: Legal frameworks and institutional capacity for managing and controlling organic agriculture in Ukraine are still in the making. The use and exchange of experience with the German authorities in establishing an accreditation and oversight system for certification organizations can greatly contribute to the successful development of the legal framework. An effective control system is the basis for building the confidence and success of the organic industry in Ukraine.

In the future, it is necessary to create a state market overview, a detailed analysis of the current situation and a principled open recognition for the development of agriculture and appropriate management of natural resources in Ukraine. An important supporting element here may be the establishment of a national organic action plan that will provide specific support programs for

businesses that are particularly environmentally friendly and that agricultural and processing enterprises will have access to tailor-made means.

The organic sector in Ukraine needs market-oriented support structures, further incentives for organic producers and trade enterprises to cooperate, and should focus on the poorly developed value chain and actively participate in the professionalisation of organic logistics and related procedures (drying, storage, transportation, such as ports, etc.).

The promotion of private organic standards (eg Naturland, BioSuisse, etc.) offers a good chance to build stable, full trust and long-term relationships with EU customers / processors and processors, and ultimately, through their high requirements, reduce the risk of contamination and potential contagion. falsification.

• Training, advanced training, counseling: To date, there are only a few specialists in the country, and the required specialist knowledge is lacking. This applies, above all, to the technical aspects of agriculture, but also to the certification and marketing of organic products. The widespread lack of knowledge is probably the biggest obstacle to the development of organic farming in Ukraine. Helped here can be enhanced international cooperation between high schools and universities in both countries. Next, the focus should be on state consultation on organic farming. Here, the state can act as a central authority in transferring knowledge, providing access to support facilities and in further linking farms and businesses (farmers with each other, farmers and processors, processors with each other), as well as stimulating innovation and identifying needs.
Developing a system of training and advanced training for those employed in organic farming and related fields, in particular in processing (enterprise management, storage organization, reloading stations, processing, etc.), like special vocational schools, technical colleges and academies, and / or the integration of organic farming into existing organizations and educational content, will allow the transfer of knowledge from universities to practice, which should also be taken into account.

• Technology research and development: Central European scientists need to prepare production and technical bases (for example, fertilizer experiments). In the

future, we will come to find specific solutions that will be tailored to a particular growing location. It is organic farming methods that must justify themselves and be developed on the basis of the appropriate environmental conditions of the place of cultivation. Accordingly, there is a need to develop and conduct research at research stations and at selected selected enterprises. It is possible to offer cooperation of Ukrainian research organizations with German universities, state and non-governmental research institutes.
There is still a significant lack of knowledge, both in production-related topics (such as crop yields, plant protection, protein provision), and in relation to issues of interest to society (eg, results for the general well-being, animal welfare, health). The need for research is present in other areas along the value chain, such as processing, marketing, etc. The systematic approach of organic farming has not yet been sufficiently taken into account in research projects. With the creation of a multi-year research plan for organic farming, the most pressing topics could be explored with limited funding. Knowledge transfer should take place regularly in the form of scientific conferences and events.

• Plant breeding and sowing: Organic plant breeding and providing organic sowing are essential fundamentals for development that are greatly underestimated. The EU regulation mandates the use of organic seed; those traditional varieties used by Ukrainian producers based on exclusive regulations or organic seed from Western Europe, which is not usually adapted to the specific conditions of the place of cultivation, does not meet international organic standards (for example, on issues of seed treatment / treatment). Instead, there is a need for varieties that will meet the specific requirements of organic farming in Ukraine. In order to build this area, it is recommended to establish cooperation of Ukrainian breeders with existing German non-profit organizations in the field of organic plant breeding.

• Consumer sensitization and awareness campaigns: Consumers are given a decisive role in the development of organic farming. The introduction of the National Organic Seal helps consumers to identify quickly and easily organic foods that come from Ukraine. A public information company should also promote consumer demand

and accurately explain the relationship between land use, the state of natural resources, living conditions and own consumption.

From an economic point of view, organic agriculture is currently only a small niche in Ukraine's agricultural sector. However, as an engine of innovation, it can have a significant impact. Yes, it can make a decisive contribution to improving public health and making Ukraine's agriculture more environmentally friendly. In the future, topics such as groundwater protection on soil will play an important role, especially in the current debate on climate change and food security.

It is necessary to further increase the value added formation in agricultural production. Organic farming provides a unique opportunity to create and retain jobs in rural areas and related areas. Therefore, there are many arguments for giving organic agriculture high agro-political value.

For the further development of organic farming, certain policy areas and clear strategic statements regarding the organic sector are important.

Establishing a follow-up expert working group on policy, civil society and the economy will help ensure that the above-mentioned strategy, as well as milestones and roadmaps, are validated through policy implementation and continued to evolve.

Conclusions

The further development of efficient organic farming in Ukraine requires a holistic approach: training and professional development, research and development of technology, plant breeding and sowing, regulation and support of organic agriculture by the state, and last but not least creating awareness consumer questions.

In order to create a medium-term policy in this area, a strategic definition of key areas should be set with specific areas of action and operationalized goals to be met. It is as clear as possible that political signals indicate to manufacturers, as well as to processing and marketing partners, that when deciding whether to switch to "alternative production", one can expect high political framework conditions.

Specific measures should focus on four main points:

• "structure": these include measures that will help to improve the organizational and strategic framework for the further development of the domestic

share of production, as well as to deepen vertical communication and cooperation in the organic sector.

• “support” measures that will help to overcome obstacles to development and weaknesses, in particular in comparison to traditional management, and to improve the dynamics in the value chain.

• 'motivate' covers measures that support producers, processors, sellers and consumers in their actions to increase the use and consumption of organic products.

• 'inform' covers activities that contribute, differentiated by target group, to the dissemination of knowledge about organic products and to improving the state of knowledge on sustainable agriculture.Organizational prerequisites for the further development of the domestic share of organic natural agro-production;

Introducing transformational changes into the traditional commodity management system;

Marketing and analytical measures to form supply and demand for environmentally friendly products.

Recommendations on actions for Ukrainian organic farming:

The further development of organic farming in Ukraine requires a holistic approach: training and advanced training of specialists, research and development of technology, plant selection and sowing, regulation and support of organic agriculture by the state, and last but not least creating awareness this issue among consumers.

In order to create a medium-term policy in this area, a strategic definition of key areas should be set with specific areas of action and operationalized goals to be met. As clear as possible, political signals indicate to manufacturers, as well as processing and marketing partners, that when deciding to switch to "alternative production", one can expect the high reliability of policy framework conditions.

State control and support: The legislative framework and institutional capacity for managing and controlling organic agriculture in Ukraine are still in the making. The use and exchange of experience with German authorities in establishing an accreditation and oversight system for certification bodies can greatly contribute to the successful development of the legal framework. An effective control system is the

basis for building the confidence and success of the organic industry in Ukraine. In the future, it is necessary to create a state market overview, a detailed analysis of the current situation and a fundamentally open recognition for the development of agriculture and the proper management of natural resources in Ukraine. An important supportive element here may be the creation of a national organic action plan, which will provide specific support programs for businesses that are particularly environmentally friendly, and agricultural and processing enterprises will have special access the means provided for this purpose. Organic sector in Ukraine needs market-oriented support structures, further incentives for organic producers and trade enterprises to cooperate, should focus on the poorly developed value chain and actively participate in the professionalisation of organic logistics and related procedures (drying, harvesting, harvesting transportation, places of congestion, such as ports, etc.). The promotion of private organic standards (eg Naturland, BioSuisse, etc.) offers a good chance of creating stable, full trust and long-term relationships with customers / processors and processors in the EU and, by their high demands, ultimately reduces the risk of contamination and possible cases of fraud. Training, advanced training, counseling: To date, there are only a few specialists in the country, and the required specialist knowledge is lacking. This applies, above all, to the technical aspects of agriculture, but also to the certification and marketing of organic products. The widespread lack of knowledge is probably the biggest obstacle to the development of organic farming in Ukraine. International cooperation between higher education institutions and universities of both countries can help. Next, the focus should be on state consultation on organic farming. Here, the state can act as a central authority in transferring knowledge, providing access to support facilities, and in further linking economies and enterprises (farmers with each other, farmers and processors, processors with each other), and stimulating innovation and identify needs.

Developing a system of training and advanced training for those employed in organic farming and related fields, in particular in processing (enterprise management, storage organization, reloading stations, processing, etc.), like special

vocational schools, technical colleges and academies, and / or the integration of organic farming into existing organizations and educational content, will allow the transfer of knowledge from universities to practice, which should also be taken into account.

Technology R&D: Central European scientists need to prepare production and technical bases (for example, fertilizer experiments). In the future, we will come to find specific solutions that will be tailored to a particular growing location. It is organic farming methods that must justify themselves and be developed on the basis of the appropriate environmental conditions of the place of cultivation. Accordingly, there is a need to develop and conduct research at research stations and at selected selected enterprises. It is possible to offer cooperation of Ukrainian research organizations with German universities, state and non-governmental research institutes.

There is still a significant lack of knowledge, both in production-related topics (eg, crop yields, plant protection, protein provision), and in relation to issues of interest to society (eg, outcomes for general well-being, well-being animals, health). The need for research is present in other areas along the value chain, such as processing, marketing, etc. The systematic approach of organic farming has not yet been sufficiently taken into account in research projects. With the creation of a multi-year research plan for organic farming, the most pressing topics could be explored with limited funding. Knowledge transfer should take place regularly in the form of scientific conferences and events.

Plant breeding and sowing: Organic plant breeding and providing organic sowing are essential fundamentals for development that are greatly underestimated. EU regulation mandates the use of organic sowing material; those traditional varieties used by Ukrainian producers based on exclusive regulations or organic seed from Western Europe, which is not usually adapted to the specific conditions of the place of cultivation, does not meet international organic standards (for example, on seed treatment / treatment). Instead, there is a need for varieties that will meet the specific requirements of organic farming in Ukraine. In order to build this area, it is

recommended to establish cooperation of Ukrainian breeders with existing German non-profit organizations in the field of organic plant breeding.

Consumer sensitization and awareness campaigns: Consumers are given a decisive role in the development of organic farming. The introduction of a national organic seal helps consumers to recognize organic foods from Ukraine quickly and easily. A public information company should also promote consumer demand and accurately explain the relationship between land use, the state of natural resources, living conditions and own consumption.

From an economic point of view, organic agriculture is currently only a small niche in Ukraine's agricultural sector. However, as an engine of innovation, it can have a significant impact. Yes, it can make a decisive contribution to improving public health and making Ukraine's agriculture more environmentally friendly. In the future, topics such as groundwater protection on soil will play an important role, especially in the current debate on climate change and food security.

It is necessary to further increase the value added formation in agricultural production. Organic farming provides a unique opportunity to create and retain jobs in rural areas and related areas. Therefore, there are many arguments for giving organic agriculture high agro-political value.

For the further development of organic farming, certain policy areas and clear strategic statements regarding the organic sector are important.

Establishing a follow-up expert working group on policy, civil society and the economy will help ensure that the above-mentioned strategy, as well as milestones and roadmaps, are validated through policy implementation and further developed. Agrarian enterprises producing organic products were most widespread in the Kyiv region, with 25.0% of their total concentrated, as well as in Vinnitsa (11.1%), Volyn and Lviv (8.3% each), Transcarpathian, Ivano-Frankivsk and Chernihiv oblasts - 5.6% each.

The basis of their specialization is the production of cereals, legumes and oilseed organic crops. However, in recent years, organic berry and horticulture has been characterized by rapid development, with a predominantly export orientation. Given

that the volume of the European market for organic fruit and berry products exceeds € 1.0 billion, domestic organic producers in the context of resource competitive advantages, have unlimited opportunities for development in this direction.

In addition, the specialization in organic berries shows a much higher profitability than traditional legumes and oilseeds. Thus, the price of selling 1 kg of organic strawberries in the EU is 2.0 euros, raspberries - 3.0 euros, blueberries - 3.5 euros. In addition, picking berries is done manually, with the involvement of a large number of seasonal workers.

In the last decades, especially after the accession to the WTO, activities aimed at comprehensive standardization and certification of agricultural production have become increasingly understood and supported in the country. Thus, the main task of the EU Common Agricultural Policy (CAP) is the need to ensure the protection of nature in the organic production process. Therefore, it is based on the following points: taking into account the public interest; quality assurance and standards; organic production and its development; integrated agricultural production. This puts new demands on agricultural producers regarding the content of business processes and their control. On the other hand, organic production has already been found to have a higher rate of return than traditional production, and is therefore economically viable.

In the last decades, especially after the accession to the WTO, activities aimed at comprehensive standardization and certification of agricultural production have become increasingly understood and supported in the country. Thus, the main task of the EU Common Agricultural Policy (CAP) is the need to ensure the protection of nature in the organic production process. Therefore, it is based on the following points: taking into account the public interest; quality assurance and standards; organic production and its development; integrated agricultural production. This puts new demands on agricultural producers regarding the content of business processes and their control. On the other hand, organic production has already been found to have a higher rate of return than traditional production, and is therefore economically viable.

However, the certification procedures for organic production and produce are flawed and costly. In our opinion, the basis for the further development of organic production enterprises is: the formation of organic agroecosystem; minimizing financial risks during the transition period; increase the confidence of producers and consumers.

To regulate these actions just as well as the required international and national binding standards. Among them, the main ones are EU Regulation 889/2008 on organic production and labeling of organic products; Basic International Organic Production Standards approved by IFOAM; FAO / WHO Standard Codex Alimentarius Commission. Organic Production and Certification Rules have been developed in Ukraine (2003); Standards of the BIOlan Association (until 2012); the relevant standards of Switzerland, the USA, Japan and others can be used.

In the most general form, standards cover the following sections: ecosystem management; general requirements for plant and animal husbandry; plant growing; animal husbandry; processing and transportation of products; marking; aquaculture; control and certification. At the same time, the certification covers the whole chain of promotion of organic products, and its content differs significantly from other quality certification systems. This is not about analyzing the quality of the origin of the food, but about assessing the conformity of the whole organic reproduction process. In Ukraine, certification of organic producers is carried out by 15 organizations, but their network is insufficient and needs to be expanded. The cost of certification services has a significant impact on the development of organic production enterprises. It depends on the size, specialization of farms, accepted payment systems. Yes, the methods of hourly payment, base price are applied; surcharges for 1 ha or 1 head of cattle, reimbursement of business expenses. If the price is 1 hour. is, on average, 70-80 euros, the base price starts from 300-400 euros for farms of 100 hectares or less; with an area of 1000 or more hectares - 600-700 euros.

Considerable and elaborate investment support for organic production in agricultural enterprises should be implemented through the implementation of regulatory, certification, tax, depreciation, customs, price and credit policies.

Important financial levers should be: credit; taxation; insurance protection; state support for rural producers and rural territories that will ensure the effective functioning of agricultural enterprises producing organic products. The main sources of investment of these enterprises are own finances, budgetary funds, funds of foreign investors, loans and loans, financial leasing, factoring and forfeiting, mortgage loans secured by agricultural land (in case of lifting the moratorium on land sale), investing in equity capital (agricultural joint stock companies); venture financing and more.

In today's environment, the main source of investment for the development of organic production is own funds. Regarding state support, in the last 3 years funding for research decreased by 35.5%, support for activities in the agro-industrial complex decreased by 75%, reform and development of communal services in rural areas - by 14.5%. State support increased only in livestock farming by 23% and land reform by 29.6%. Comparing state support in Ukraine to EU countries, the initial maximum level of subsidies is € 461 per organic hectare per year (received during the transitional period by gardeners) and the minimum is about € 66 (for certified organic perennial pastures over a large area). . Thus, depending on the type of agricultural enterprise producing organic products and their product specialization, direct subsidies in the EU countries averaged 240 euros per 1 ha. As far as information and advertising activities are concerned, organic producers are reimbursed up to 70% of their costs in this area. The income of 255 euros per 1 ha per year brings to the farmer participation in the quality control programs.

Another source of investment in the organic segment is bank loans. With the state support in Ukraine a program of preferential crediting of agricultural production was developed. However, the defined approach did not intensify the cooperation of banks. The main reasons for this were and still are the cost of loans, late payment of compensation payments, high demands on borrowers, poor distribution system and complicated procedure for obtaining budgetary compensation. Therefore, cooperation and formation of integrated structures in the field of organic agricultural production is important.

In the last two years, the solvency of the population has been falling rapidly,

and this is forcing producers to sell products at low prices. In addition, banks cannot fully meet the needs of innovative development, provide a full cycle of organic products, since short-term loans consistently outweigh the total credits, and the innovation payback period is longer than one year. However, the geopolitical position of the country gives considerable preferences in the development, including the organic sector of agricultural business.

West European investors are looking for a place to place new production and a base for expansion into dynamic markets of Eastern Europe, entrepreneurs from the CIS countries are seeking to enter the European and world markets.

Under these conditions, Ukraine, bordering on economic cultures of both the West and the East, stands out as an attractive, economically independent environment for conducting organic agribusiness, producing organic goods and services. But there are some risks to consider. Yes, most foreign investors have the strategic goal of obtaining quality products with minimal investment and minimal payroll. Organic products produced are not always available on the Ukrainian market. Therefore, this resource should be used taking into account the interests of domestic producers and consumers.

In addition, the preferential tax regime should encourage manufacturers to innovate in production and reduce the cost of final products for their consumers; provide tax breaks for growers who have begun the certification process for organic standards, before receiving revenue from the sale of certified organic produce.The methodology for assessing the performance of organic farming enterprises uses both traditional and specific indicators and criteria. The first are natural, value and relative indicators of resource supply, organic production, greening, financial and economic sustainability, quality of organic products. Specific features are the structure of the cost of production (through certification, monitoring and control of organic production and production and the absence of traditional costs of mineral fertilizers, chemical plant protection, etc.); comparative efficiency due to environmental and social components; payback periods, etc. State programs of organic production are important for the further development of agricultural enterprises producing organic products. They are

regionally predetermined and oriented, they are the basis for an unbiased economic assessment of the natural and labor resources of these agro-formations; substantiation in accordance with it organic specialization and diversification of production; the duration, forms and opportunities of state, regional and local support for organic producers. Their content should also include information and advisory support; development of processes of clustering, cooperation and integration of organic production entities. It is advisable to align business plans for the development of individual enterprises with state programs, needs of the national agrarian market and directions of state agrarian policy in general.

The financial efficiency of land use is a comprehensive, results-based process after analyzing the many factors and indicators that accompany land cultivation. Various factors and their influence lead to different views of scientists in assessing the efficiency of land use. It should be emphasized that the very concept of "efficiency" can also have a different connotation: environmental, economic, social, etc. Considering the specific nature of the agricultural industry, the environmental and economic efficiency of land use, the content of which is generally reflected in the main mission of the entity, deserves the greatest attention; profit and effective land management, sustainable production of environmentally friendly products, etc.

For the efficient use of land, in order to preserve the environment, it is necessary, first of all, to pay attention to the protection of agricultural land resources, their reproduction and fertility. For this purpose it is recommended to introduce the marketing concept of restoration and preservation of useful properties of land of different purpose and functioning, for the purpose of effective supervision of the environment.

The rational and efficient use of land in agricultural enterprises can be achieved by taking measures to improve soil fertility and protect it from erosion and other destructive processes. Based on national interests, society should use the land to pass it on to improved generations. The implementation of the achievements of scientific and technological progress and intensive technologies in agriculture objectively requires consideration not only of their positive impact on the land, but also the

possible negative consequences caused by the specific manifestation of certain means of production.

In this regard, we can distinguish the following main directions of increasing the economic efficiency of land use in agriculture: 1) a system of measures to increase the fertility of land; 2) protection of soils from erosion and other destructive processes; 3) reduction of land areas falling out of agricultural turnover.

The diversity of natural conditions necessitates the introduction of a scientifically sound system of agriculture, which provides for the increase of soil fertility, improvement of the quality of agricultural land. Therefore, the main component of the farming system is the farming system.