

## DEVELOPMENT OF EXPORT POTENTIAL OF UKRAINE'S AGRICULTURAL SECTOR

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### Abstract

*Given the trends of the economic development, economic crisis, situation of food security, impact of the pandemic Covid-19, it is sensible to research the situation in the agricultural sector in the world and in Ukraine, identify areas for development and assess export potential. These trends indicate the appropriateness and relevance of the study. The aim of the research is to study the state of the agricultural sector of Ukraine and identify areas of development, prospects for development, assessment of export opportunities and export potential. The initial data for the research are obtained on the portal of the State Statistics Service of Ukraine. In the process of research the methods of comparison, analysis, synthesis, generalization, SWOT-analysis are used. The results of the research indicate that Ukrainian enterprises of the agricultural sector are technically equipped, produce high quality products that fit international norms, but concerning the geography of trade of most rural companies, it should be noted a great number of unexplored markets. Moreover, it should be noted that the development of export potential will be facilitated by innovations in the agricultural sector, development of infrastructure in the country, attracting investment.*

**Key words:** export potential, agricultural sector of Ukraine, export, international activity

### INTRODUCTION

Ukrainian agricultural business occupies a particular position in international trade. For a long period of time, Ukrainian agribusiness remains an influential exporter on the world market of sunflower oil and grain. The leading positions in world trade are occupied by cereals, namely wheat, corn, barley, as well as sunflowers, sugar beets, beans, fruits and vegetables.

Ukraine's agriculture plays a significant role in the structure of exports. As of the end of 2020, the agricultural sector has brought the country almost 40% of foreign exchange earnings, showing stability over the past three years. Ukrainian agrarians produce 90-100 million tons of grain per year, which is one of the highest world indicators [7]. With annual sales of 50-60 million tons of grain, Ukraine ranked third in terms of exports [5]. Ukraine exported grain crops in 2021 for \$12.35 billion, which is more than in 2020 for 31.1%, including corn was exported by \$5.89 billion,

wheat is by \$5.07 billion, and barley is by \$1.28 billion [8].

In this context, the purpose of the paper was to study the state of the agricultural sector of Ukraine and identify areas and prospects of development, assessment of export opportunities and export potential.

### MATERIALS AND METHODS

The information base of the research was the data of the State Statistics Service of Ukraine. The article explores the tendencies of world trade in the agricultural sector of Ukraine, examines the prospects for export. The period considered for analysis the year 2020 compared to 2019.

The main studied indicators were: value indicators of total exports and imports of agrarian products, growth rates of trade in agrarian goods, volumes in international trade in agrarian goods, values of trade in agrarian goods by region, share of agricultural product in GDP.

The specific indicators reflecting the efficiency of foreign trade are trade balance, export/import ratio, terms of trade index (quantities and price), and indicators of export growth dynamics.

The methodology used in this research included general scientific and special methods of research of export potential as comparison, monitoring, abstraction and concretization, analysis, synthesis, induction, deduction, historical and logical methods. SWOT analysis used as a tool for assessing the external and internal environment of agribusiness.

## RESULTS AND DISCUSSIONS

As of 2020, about 280,000 hectares of agricultural land under organic production are registered in Ukraine. Most of the land is concentrated under cereals is 133.4 thousand hectares, or 46% of all agricultural land under organic [8]. Over the past 10 years, the amount of agricultural land for organic production has increased by 39 thousand hectares [10].

Agribusiness in Ukraine is a priority segment in exports, given the signing of the Association Agreement between Ukraine and the EU and the Agreement on the Free Trade Zone. According to the State Statistics Service of Ukraine, for 9 months of 2021 Ukraine increased the total exports to the EU by 50% to \$21.8 billion, for 9 months of 2020 this data was \$14.7 billion [5]. Based on the monitoring data of the European Commission on trade in agricultural products, Ukraine occupies a top position in the structure of exporters of the agricultural sector to the EU countries.

After the signing of an agreement on a free trade zone between Ukraine and the EU, Ukrainian agrarians received additional quotas for honey, grape juice, processed tomatoes, barley, oats, wheat, barley and corn on preferential terms [2]. In addition to crop products, the European Commission has increased the quota for livestock products, namely, introduced duty-free import of chicken. Some tariff quotas are used up by

Ukrainian exporters to the EU during the year, such agricultural products are honey, corn, barley groats and flour, processed starch [5].

Consider the commodity structure of Ukraine's foreign trade in agricultural sector in 2020 (Table 1).

For some goods, there is a negative trade balance and, accordingly, the export-import coverage ratio is below 1, such as live animals, fish and crustaceans, vegetables, edible fruits and nuts, natural shellac, meat and fish products, cocoa and cocoa products, vegetable processing products, different foods, alcohol and soft drinks and vinegar, tobacco and industrial tobacco substitutes etc.

Terms of trade are special index of export and import prices. If the index is greater than 100%, a country has positive terms of trade and the country is accumulating more capital from exports than it is spending on imports. Terms of trade quantitative and price is greater than 100% for meat and edible offal in Ukraine. Ukrainian agrarians took the leading positions in the world exports of 2020 for such goods as sunflower oil (1st place), sunflower meal (1st place), rapeseed (2nd place), millet (2nd place), corn (4th place), barley (4th place), wheat (5th place), soybeans (7th place) [3].

As for the import of agricultural products from Ukraine, it should be noted that there is a downward trend in 2020 for the following commodity groups as milk and dairy products, eggs, honey by 82.0%; fruits and nuts by 18.1%; tobacco by 12.3%; alcoholic and non-alcoholic drinks by 10.2%; vegetables by 23.6%; cocoa and cocoa products by 14.9%; other food products by 10.3%; grain products by 20.3%; fish and seafood by 5.5%; meat products by 26.1%; coffee, tea and spices by 13.0%; fat and oil products by 10.7%; processed products of vegetables and fruits by 10.0% [5].

Due to the aggravation of the food crisis, the market for agricultural products is growing on world markets. Analyzing the structure of the world market for agricultural products, we should pay attention to the uneven development of individual foreign markets.

Table 1. Commodity structure of Ukraine's foreign trade in agricultural sector in 2020 versus 2019

Code and name of goods*	Export			Import			Terms of trade index / quantitative	Terms of trade index / price	Trade balance	Export/Import ratio
	thousand dollars USA	with 2020/2019 %	in% to the total	thousand dollars USA	with 2020/2019 %	in% to the total				
Total	49,212,901.3	98.3	100.0	54,091,267.8	89.0	100.0	92.9	99.3	-4,878,366.5	90.9
including:										
I. Live animals; animal products	1,188,368.1	93.1	2.4	1,257,768.0	117.4	2.3	77.0	101.3	-69,399.9	94.5
01 live animals	51,524.1	82.4	0.1	80,912.1	105.6	0.1	96.5	91.2	-29,388.0	63.7
02 meat and edible offal	652,235.8	91.6	1.3	165,010.4	104.0	0.3	113.1	105.2	487,225.4	395.3
03 fish and crustaceans	42,204.0	125.5	0.1	680,271.5	105.5	1.3	46.4	111.2	-638,067.5	6.2
04 milk and dairy products, poultry eggs; natural honey	426,598.9	94.0	0.9	308,396.9	182.0	0.6	119.5	83.8	118,202.0	138.3
05 other animal products	15,805.2	105.0	0.0	23,177.2	104.8	0.0	77.0	101.3	-7,372.0	68.2
II. Vegetable products	11,890,050.9	92.1	24.2	1,988,349.6	110.8	3.7	91.8	98.1	9,901,701.3	598.1
06 living trees and other plants	5,746.6	88.7	0.0	48,790.8	119.3	0.1	72.5	102.6	-43,044.2	11.8
07 vegetables	168,147.4	91.1	0.3	262,508.0	123.6	0.5	74.2	99.3	-94,360.6	64.1
08 edible fruits and nuts	238,399.6	91.7	0.5	794,893.7	118.1	1.5	71.7	108.3	-556,494.1	30.0
09 coffee, tea	15,011.2	128.2	0.0	251,294.7	113.0	0.5	96.3	117.8	-236,283.5	5.9
10 grain crops	9,417,313.8	97.8	19.1	178,912.0	98.9	0.3	102.4	96.6	9,238,401.8	5,263.6
11 products of the flour and cereals industry	154,639.6	76.5	0.3	35,161.0	100.2	0.1	88.7	86.1	119,478.6	439.8
12 seeds and fruits of oilseeds	1,842,436.6	71.9	3.7	388,047.9	96.8	0.7	70.1	105.9	1,454,388.7	474.8
13 natural shellac	944.1	115.3	0.0	28,036.0	99.1	0.1	125.1	93.0	-27,091.9	3.4
14 vegetable materials for production	47,412.0	90.8	0.1	705.4	99.6	0.0	124.9	73.0	46,706.6	6,721.3
III. 15 Animal or vegetable fats and oils	5,759,599.1	121.7	11.7	280,379.8	110.7	0.5	113.0	97.3	5,479,219.3	2,054.2
IV. Ready-made food products	3,361,124.0	104.4	6.8	2,968,950.4	113.5	5.5	90.0	100.4	392,173.6	113.2
16 meat and fish products	22,603.0	99.0	0.0	160,617.8	126.1	0.3	85.8	91.5	-138,014.8	14.1
17 sugar and confectionery	250,241.4	98.4	0.5	74,092.6	105.1	0.1	96.9	96.6	176,148.8	337.7
18 cocoa and cocoa products	201,400.2	98.4	0.4	375,925.4	114.9	0.7	84.2	101.7	-174,525.2	53.6
19 finished grain products	313,077.2	116.2	0.6	241,472.9	120.3	0.4	90.4	106.9	71,604.3	129.7
20 vegetable processing products	172,633.0	90.0	0.4	208,991.8	110.0	0.4	77.1	106.1	-36,358.8	82.6
21 different foods	159,621.3	111.9	0.3	484,871.9	110.3	0.9	101.1	100.4	-325,250.6	32.9
22 alcohol and soft drinks and vinegar	223,688.5	106.1	0.5	587,440.1	110.2	1.1	89.1	108.1	-363,751.6	38.1
23 residues and wastes of the food industry	1,576,500.6	106.1	3.2	278,047.9	120.1	0.5	88.9	99.3	1,298,452.7	567.0
24 tobacco and industrial tobacco substitutes	441,358.8	100.9	0.9	557,490.0	112.3	1.0	96.7	92.9	-116,131.2	79.2

Source: calculation by the author according to the data of the State Statistics Service of Ukraine [5].

Note: \*according to Ukrainian classification of foreign economics goods.

The share of agricultural products in GDP can be divided into growing markets are 98 countries as 51%, underdeveloped markets are 37 countries as 19%, markets with insufficient supply and demand are 24 countries as 12%, mature markets are 35 countries as 18%. Countries such as Australia, Belarus, Brazil,

Bulgaria, Greece, Canada, China, Mexico, Germany, New Zealand, Russian Federation, USA, France, and Japan are steadily growing markets for agricultural products today. This group of markets is gradually growing from 1% to 10% in the share of agricultural products in the gross domestic product [5;

11]. Vietnam, India, Moldova, Thailand, Ukraine belong to the group of countries with mature markets, they account for 10-25% of agricultural products in terms of GDP. 37 countries belong to the group of underdeveloped agricultural markets; in their GDP, the share of agricultural products ranges from 0% to 1%. Some countries are characterized by markets with insufficient demand and supply; these are the markets of countries with the largest share of agricultural products in GDP (25%-60%). The group of these countries is represented by the countries of Africa, Asia, the island states of the Indian and Pacific Oceans, which is about 12% of the world market, these countries produce agricultural products mainly for their own consumption and practically do not engage in foreign economic activity.

Thus, large producers of some agricultural products are almost always the world's leading exporters. However, China and India cannot be considered the leading exporters due to their large population, which creates demand for agricultural products and limits their supply on the world market. As for importers, these are countries where the production of agricultural products either does not fully meet domestic demand, or is limited by certain climatic conditions or other problems. Most countries of the world are quite productively using their domestic agricultural potential, but there are countries that, despite the existing opportunities, do not fully use their potential.

Today, when the market is saturated with both domestic and imported goods, and purchasing power is not very high, competition is intensifying. In order to make your product special or unique, you need not only knowledge of the customer's needs, but also new equipment, new technologies, and this requires significant investment. In market conditions, some companies benefit precisely because of the quality of service offered by the service, the use of advertising technologies, the correct positioning of goods in the market, trying to constantly expand market positions. Analysis of the world market for agricultural products showed that the market is unstable, volatile, which

encourages the leadership of Ukrainian agricultural firms to expand foreign economic activity, seek new buyers in new countries, to minimize the risk of losing markets.

The features that characterize the agricultural market are seasonality, dependence on weather and natural conditions, the specificity of agricultural production, as well as inelastic demand for products, which determine the vital needs of the population. The world agricultural market is characterized, in addition, by the massive consumption of food, the social significance of goods, and the high level of state regulation with the help of tariff and non-tariff instruments, such as quotas, import duties, sanitary and phytosanitary measures, subsidies for producers (farmers) and exporters, and others [1]. The list of restrictive regulatory instruments is established by the governments of the countries taking into account national conditions and global significance. Exports of agricultural products are affected by price, location of production facilities, the amount of duties, the availability of quotas, as well as natural conditions that affect the quantity and the quality. The expansion of foreign markets of the enterprise is a complex and complex issue, to address which it is necessary to determine the factors influencing the choice of market for agricultural products (Figure 1).

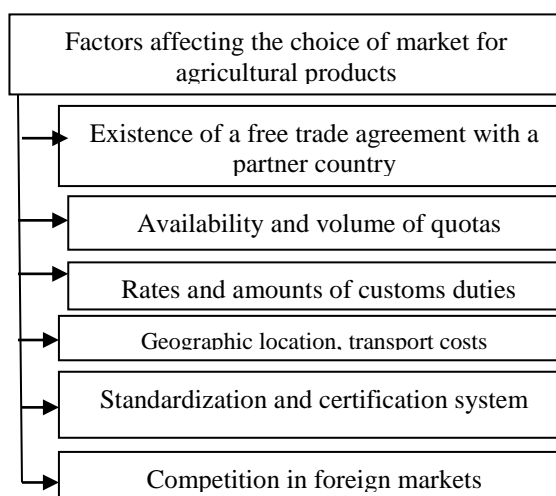


Fig. 1. Factors affecting the choice of market for agricultural products.

Source: designed by authors.

When studying the factors affecting the choice of markets for agricultural products, it

should take into account industry characteristics, government regulation, terms of free trade agreements and others, presented in Figure 1. Agribusiness is a very diverse field of activity, each of the sub-sectors is characterized by its own characteristics. When choosing a country of export, suppliers need to study in detail trade regimes, take into account restrictions on the import of products that are introduced to protect domestic producers by setting customs duties, introducing quotas, requiring a special license, and more. Exported agricultural products must fit the quality requirements of the importing country, namely labelling, standardization, safety, etc. For guaranteed supplies of agricultural products, the governments of the countries sign interstate agreements. Export and import requirements are specific parameters required for analysis and accounting by national governments. Table 2 presents an analysis of the strengths and weaknesses, as well as threats and opportunities for Ukrainian agricultural producers in foreign markets.

Table 2. SWOT-analysis of Ukrainian agricultural producers in foreign markets

<p style="text-align: center;">Strengths</p> <ol style="list-style-type: none"> <li>1. Product quality</li> <li>2. Availability of quality certificates</li> <li>3. Competitive price</li> <li>4. Modern powerful equipment</li> <li>5. Sufficient production capacity</li> <li>6. Export deliveries to some countries have been established</li> <li>7. Positive image</li> </ol>	<p style="text-align: center;">Weaknesses</p> <ol style="list-style-type: none"> <li>1. High competition in the market</li> <li>2. Unbundled relationships with market counterparties</li> <li>3. Location of production facilities of the enterprise far from the borders with EU countries</li> </ol>
<p style="text-align: center;">Opportunities</p> <ol style="list-style-type: none"> <li>1. Gradual increase of quotas within free trade zones.</li> <li>2. Strengthening integration processes</li> <li>3. Stimulation and support of export of products of Ukrainian producers by the state.</li> </ol>	<p style="text-align: center;">Threats</p> <ol style="list-style-type: none"> <li>1. Seasonality of agricultural products.</li> <li>2. Unexpected price fluctuations in the world market.</li> <li>3. High competition between agricultural producers on the world market</li> <li>4. High standards and requirements for food products.</li> <li>5. Complex process of finding contractors.</li> </ol>

Source: designed by authors.

Based on the results of the SWOT analysis of Ukrainian agricultural producers regarding export opportunities, it is necessary to highlight the strengths that provide additional opportunities, enhancing the export potential.

Ukrainian farmers manufacture high-quality products that fully comply with international quality standards, all products have the necessary certificates; agricultural firms are equipped with modern technologies.

In the process of studying the geography of exports of some Ukrainian agricultural producers, it is necessary to highlight such threats as ignoring the markets of developing countries, focusing on a narrow studied market segment, and lack of diversification. The market of African countries is interesting for research. Exports to the African continent should continue to grow as many African countries have problems with providing food to their populations.

In recent years, African countries have become a promising sales market for Ukrainian agricultural products. The reasons for the promising export of Ukrainian food products to African countries is that the population growth rates are one of the highest here, while the national food production does not provide the growing demand. According to UN estimates, the population of sub-Saharan Africa is approaching 1 billion, which is twice as many as in the EU or North America. That is, the increase in the population of African countries is able to meet the demand for Ukrainian food products. In addition, population growth is accompanied by rapid urbanization. Large agglomerations cover part of the demand for food through imports, as agricultural production in rural areas of African countries is unproductive. Also interesting is the fact that the rate of economic growth in African countries is ahead of the rate of population growth, i.e. countries are solvent.

At the moment, the main consumers of Ukrainian agricultural products on the Sub-Saharan Africa are Ethiopia, Nigeria, Djibouti, South Africa, Senegal, Kenya, Ghana and Mauritania. Considering that the incomes of the African population are quite low, and the prices for Ukrainian agricultural products are low, this makes them competitive in this market. Today, the supply of Ukrainian agricultural goods to Tanzania, Guinea, Mozambique, Cameroon, Congo, Namibia, Uganda, Mali, Angola, Liberia, Togo, Benin

and Somalia remains insignificant. Wheat, corn, flour, poultry, pork, eggs, condensed milk and cream, and cheese are promising niches for export. Some of the competitive goods on the African market are grain, corn, dairy products.

African markets are not similar, have different capacities and diversified demand that meets Ukrainian supply. With a low standard of living, the population of Africa needs cheap goods of medium quality. The key criteria when choosing goods for sale in Africa are the ability to store the product for a long time without special equipment; low price segment; the presence of similar products on the market that are already familiar to consumers; use of B2C (own-brand) and B2B (distributor's) market technologies. The main competitors in the markets of Sub-Saharan Africa for Ukrainian agricultural producers are New Zealand and EU countries. Given the right export policy for Ukrainian agricultural firms to enter the markets of Sub-Saharan Africa, the range of its potential exports is in a wide range.

Expanding the market in Africa requires detailed preparation and planning of exports. One of the most difficult steps is choosing the target country. High levels of risk are inherent in exports to all African countries. In-depth research into local markets is needed to find partners and understand the external market. Essential goods and dry food are a priority for most markets. To determine the most attractive agricultural products for export, a comprehensive analysis of potential partner countries should be conducted.

Nigeria, Angola, South Africa and Ghana may be a priority for the export of Ukrainian agricultural firms. The economies of these countries are growing slowly due to the production of fuel and chemicals, but the agricultural sector is shrinking due to difficult weather conditions for agriculture.

To determine the feasibility of exports to Africa, it is also necessary to calculate the logistical component of exports. In the process of transportation to African countries, mainly sea transport is used, in terms of customs tariffs and fees, as most countries have not signed trade agreements; the full rate

of payment is used. With regard to standardization and certification, all agricultural and food products exported to African countries must be accompanied by an appropriate phytosanitary, medical or veterinary certificate issued by the regulatory authorities of the exporter. Customs clearance involves the provision of the necessary package of documents, while obtaining an import permit simplifies this procedure and the process of inspecting goods. With regard to processed foods that can be supplied to African countries through an importer, separate registration of these products is not required. The main regulations governing food security in Africa are The Foodstuffs, Disinfectants and Cosmetics Act (FDCA) 54 of 1972: (Regulations on Food, Disinfectants and Cosmetics), Consumer Protection Act, 2008: (Consumer Protection Act), The Health Act, 1977: Animal Disease Act (1984), Meat Safety Act, 2000: Animal Disease Act, 2000) [4]. Thus, a brief study of the markets of African countries shows that entering these markets is a complex and time-consuming process, while the process of obtaining certificates of quality, compliance with standards is not quite demanding and unfeasible.

We will evaluate the prospects of exports of Ukrainian agricultural products to the EU countries. Some markets of European countries have been sufficiently studied by Ukrainian agribusiness and are actively used for export. Let's move on to assessing the difficulties of exporting agricultural products to the countries of the European Union. Firstly, Ukrainian farmers need to draw up and receive the required documents to confirm the conformity of products to EU requirements. Secondly, EU countries are exporters of a significant amount of agricultural products. In order to occupy leading positions in agricultural markets, EU countries are implementing modern technologies that help ensure the required production volumes, regardless of weather conditions. EU countries also buy agricultural products from other countries in order to create a strategic stock. In addition, the export of most agricultural goods to EU countries is

subject to tariff quotas, which limit the volume of exports of Ukrainian agricultural producers. For example, milk has a tariff quota of 3,600 tons in 2019, 4,300 tons in 2020 and 5,000 tons in 2021 [6].

To enter the EU markets, Ukrainian agricultural firms use a B2B market strategy. Mandatory condition for export to the European Union is to obtain an operating permit number and issue a certificate EUR.1. Compliance with international food quality and safety standards is a prerequisite for the export of agricultural products to EU countries. As for the priority requirements for the import of Ukrainian agricultural products into the EU countries, they must be confirmed by a certificate of origin, have a quality certificate issued by the competent authority of the exporting country, and must also be checked at the EU checkpoint. At the same time, for each group of risks it is necessary to determine management methods and ways to prevent possible risk situations (Table 3).

Table 3. Risks of export of Ukrainian agricultural products to the EU and methods of their prevention

Group of risks	Risk factor	Management method	Methods of risk prevention
Competitive risks	Competitive impact on target markets	Risk localization and increased control	Improving quality; increase in volume, improving the effectiveness of communication policy
Risks of uncertainty of the external environment	Uncertainty of demand Uncertainty of the maximum price that can be expected	Risk dissipation	Signing forward contracts
Risks of potential losses	Focus on sales and marketing	Risk localization and increased control	Creating reserves of resources to cover contingencies
Risks of overestimation of opportunities for commercialization of development	Revaluation of relationships with prospective consumers	Risk localization and increased control	Diversification

Source: designed by authors.

Thus, risk assessment provides an opportunity to analyse the operating environment of the agricultural firm and develop tools to prevent

risks. To prevent the main risks of agricultural exports to the EU, it is advisable to focus on improving quality, increasing supplies, effective communication policy with partners [9], concluding forward contracts, creating reserves of resources to cover contingencies, and diversifying export supplies.

Thus, the export of Ukrainian agricultural products to the EU countries has certain technical and organizational difficulties, which are quite expensive and labour-intensive. At the same time, Ukrainian agricultural firms' exporters to the EU have significant advantages that allow them to increase profitability, competitiveness, strengthen their position and reputation in the market. That is, Ukrainian agricultural firms should ensure a high level of quality of their own products, which would fully meet European standards in order to open new opportunities for foreign economic activity in the long run.

## CONCLUSIONS

Ukraine has significant export potential in the agricultural sector. Expansion of exports is possible subject to mandatory food requirements. In addition, support by state institutions for the agricultural sector is important. To increase the export potential of Ukraine in the agricultural sector, it is necessary to develop and modernize the auxiliary infrastructure. An example of strengthening the agricultural infrastructure can be the development of seaports and their transfer to concessions to domestic and foreign investors. In addition, attracting investment is an important element in developing the export potential of the Ukrainian agricultural sector. The volume of investments in the agricultural sector of Ukraine in 2020 amounted to more than UAH 60 billion, of which UAH 45 billion went directly to agriculture [5; 6]. Investments were also directed to projects in the field of animal husbandry, such as the construction of farms, the development of organic animal husbandry, beekeeping, fish farming and aquaculture, which have a high profitability (on average 50-100%) and pay off within 3-5 years. In the

crop production segment, the bulk of investments are directed to the construction of elevators and storage facilities for agricultural crops, start-ups in the field of growing berries, nuts, legumes, edible herbs and spicy crops. The important prerequisite for attracting investment in the agricultural sector of Ukraine was the opening of the land market. From 2024, the limit for land sales will be up to 10,000 hectares per person [6]. Currently, foreigners and foreign companies cannot officially own land.

Despite the fact that foreign investors are well aware of the competitive advantages of agricultural land, Ukraine is also known for quality and innovation in the agricultural sector. Ukrainian agro-technical companies are developing modern solutions aimed at improving traditional methods of agriculture and introducing organic production. In agriculture, there are new methods of work that involve digital and technological innovations that increase its efficiency. The use of drones in agriculture is one of the most promising innovative technologies. Unmanned aerial vehicles are used to plan and control the cultivation of plants, for chemical treatment of crops. GPS control allows you to control many parameters, including the location and routes of movement of all equipment; fuel consumption in motion, fuel consumption during parking, fuel consumption during field work, fuel consumption per 1 hectare of cultivated area, etc.; time of entry and exit from the field, time of downtime and field work; area of cultivated areas of fields. In addition, the system allows you to plot field maps or import them from other mapping programs; keep records of the history of field cultivation, crop rotation; automatically identify drivers to keep track of work time; set the prices of works for the preliminary calculation of the cost of work performed; compare the planned field work with those actually performed. Examples of the latest IT products introduced by Ukrainian agricultural companies are products for monitoring weather conditions, planning technological operations in agricultural production and modelling the risks of plant diseases; system of control and management

of animal feeding on meat and dairy farms, etc.

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